INTERNATIONAL HYDROGRAPHIC ORGANIZATION

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

CHART STANDARDIZATION & PAPER CHART WORKING GROUP (CSPCWG)

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

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UKHO ref: HA317/010/031-09

To CSPCWG Members Date 17 July 2012

Dear Colleagues,

Subject: Draft revision of S-4 Section B-300:

1. **B-300 to B-330**
2. **B-340 to B-390 – Round 2**

1. In Letter 05/12, we advised you that we had incorporated a suggestion from France in the specification for Hulk. Since then, we have made two further small changes, as follows:

a. A mariner on UK staff suggested it would be useful to add an explanation of why the nature of coastline should be charted. We have therefore added the following sentence at B-310:

> Reasons for indicating the nature of the coastline may include: indicating the ease of landing, if necessary; an indication of the likely radar return.

b. During our review of the 2nd part of B-300, we agreed to remove the symbol for Nipa Palm (C-31.5 at B-354.2e) and instead include it with mangrove shore at B-312. Consequently, we have changed the sub-section title to:

> **B-312.4 Mangroves (and Nipa Palms).**

and added the following paragraph at the end of the sub-section:

> Nipa Palms share similar features to mangroves in presenting a near impenetrable mass of vegetation which grows in intertidal waters. The same symbol and guidance applies.

2. We received 18 responses to the first draft of B-340 to B-390, for which we are grateful. As usual, Andrew and I have consolidated the responses, including all the comments, into **Annex A**. As you will see, there was a good consensus on most of the questions we asked (even where the answer was 'no'). Some other answers were less clear cut, but usually the associated comments guided us to an outcome which we hope will be acceptable; we have done our best to reconcile sometimes conflicting views. There were lots of other helpful comments, and I have responded to all these,

many of them resulting in some adjustments to the proposed text.

We have now prepared a ‘round 2’ version of the section, as Annex B (although because of size, we have converted this to PDF and attached as a separate document). As usual, those changes which were not challenged in the first round have now been converted to blue text. Most deletions have been left in the margins for the moment (except where they are directly replaced by new text) to help the translators when we produce the final version. Some of the graphics still require work; these are indicated by comments with the prefix ‘DID’.

If you are content with the revised draft, there is no need to respond. However, if you do have further comment, please let us have them by 11 September (allowing for the holiday period for some). After this date, we will prepare the whole of revised B-300 for review and approval by IHO Member States.

Yours sincerely,

Peter G.B. Jones,
Chairman

Annex A: Consolidated Responses to CSPCWG Letter 05/2011

Annex B: Draft revision of S-4 Section B-340 to B-390 – Round 2 (sent separately)

CONSOLIDATED RESPONSES TO CSPCWG LETTER 05/2011

DRAFT REVISION OF S-4 SECTION B-340 TO B-390 – ROUND 1

Specification	Question	Yes	No
B-353.4	We do not understand the purpose of this sentence, which appears to deliberately follow the specification on intermittent rivers. Should it be deleted? (If you can explain its purpose, please do so below) A small addition to B-353.1 should cover the possible meaning of this sentence, which can now be deleted	AU, BR, CL, DE, DK, ES, FI, GR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA	FR,
B-353.8	We need to indicate a preferred ('should') method of depicting glaciers; please indicate your order of preference (ie1,2,3,4,5) in the 'yes' column: Option 'a' is the clear favourite. 'e1' was the preferred infill, which we suggest could be an optional extra		
	a. blue outline + legend (averaged score 2.26)	3, 1, -, 5, 3, 1, 4, 1, 3, 2, 2, 1, 3, 1, 2, 2	
	b. blue outline + blue cross lines (3.86)	7, 2, -, 5, 2, 3, 8, 3, 4, 1, 1, -. 4, 5, 4, 5	
	c. black outline + legend (2.73)	2, 6, 1, 5, 5, 2, 3, 2, 1, 4, 4, -, 1, 3, 1, 1	
	d. black outline + black cross lines (4.00)	6, 7, 2, 5, 4, 4, 7, 4, 2, 3, 3, -, 2, 4, 3, 4	
	e. a new computer-generated infill symbol, eg: • 'random' short lines on a grey background, similar to ECDIS symbol, (3.54)	4, 3, 3, 2, -, -, 1, 5, 5, 3, *, 5, -, 5, 3	
	• 'ice crystals (blue version of K11)', (4.91)	9, 4, -, 5, 5, -, 2, 1, 7, 5, -, 7, 2, 7, -	
	• repeated ice edge symbol, (6.11)	8, 8, -, 5, -, -, 5, 5, 6, 5, -, 6, -, 6, -	
	• blue hachures, (6.50)	5, 5, -, 6, -, -, 6, 5, 8, 5, -, 8, 8, -, 9, -	
	• other (please specify below).	1, -, -, 1, 1, -, -, 5, 9, 5, *, -, 9, -	
B-354.2	Do you agree that symbol 'a' should be used for any unspecified tree (or group of trees)? Agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, RU, SE, UK, US(NOAA), ZA	
	Do you agree that symbol 'b' should be obsolescent? Agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, RU, SE, UK, US(NOAA), ZA	
	Do you agree to expand term for symbol 'c' to be 'conifers and casuarinas'? Majority agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, SE, UK, US(NOAA), ZA	RU
	Do you agree that symbol 'd' should remain unchanged? Agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, RU, SE, UK, US(NOAA), ZA	
	Do you agree that symbol 'e' should be obsolescent and the 'mangroves' section should be expanded to include nipa palms? Majority agreed; this means a small change to B-312.4	AU, BR, CL, DE, DK, ES, FI, GR, JP, NL, NZ, RU, SE, US(NOAA), ZA	FR, UK
	Do you agree that symbols 'f' should be obsolescent? Majority agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, SE, UK, US(NOAA), ZA	RU

Specification	Question	Yes	No
	Do you agree that symbol 'g' should be obsolescent? Agreed	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NZ, RU, SE, UK, US(NOAA), ZA	
B-355.2	Do you have a computer-generated infill symbol for a lava flow?		AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NO, NZ, RU, SE, UK, ZA, US(NOAA),
	If 'yes', would you be prepared to provide it for use by other HOs?		RU
B-362	Is there any useful purpose in charting disused railways? Wording amended	NL, RU	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NO, NZ, SE, UK, ZA, US(NOAA),
B-362.1	We need to indicate a preferred ('should') line style for railways; please indicate your order of preference (ie1,2,3) in the 'yes' column.		
	a. top (single bold line) (averaged score 1.88)	2, 2, 2, 3, 1, 2, 3, 1, 3, 2, 2, 1, 1, 3, 1, 3, 1, 1	
	b. middle (alternating black and white sections) (2.06)	3, 3, 3, 1, 3, 3, 1, 3, 1, 1, 1, 2, 2, 1, 2, 2, 2, 3	
	c. bottom (cross lines) (2.06)	1, 1, 1, 2, 2, 1, 2, 2, 2, 3, 3, 3, 3, 2, 3, 1, 3, 2	
	Can we make any of the 3 styles obsolescent (please specify)? No clear preference	a, b, a&c, b&c, a&c, a&c, b&c, b&c, b&c, a&c, a&b, b&c	b, CL, DK,
B-368 B-374.6	Do you agree that boundaries of features on land should be fine continuous lines (as with cemetery, airfield)? Majority agreed	AU, BR, CL, DE, DK, ES, FI (B-368), GR, JP, NL, NO, SE, UK, ZA	FI (B-374.6), FR, NZ, RU, US(NOAA),
B-372.1	Do you agree to make the post office symbol obsolescent? Majority agreed	AU, BR, CL, DE, DK, ES, FI, GR, JP, NL, NO, NZ, SE, UK, US(NOAA), ZA	FR, RU
B-373.3	Box E11 in INT1 is empty. Do you agree that the addition at B-373.3 is adequate guidance for chapels and no symbol is required? Majority agreed	AU, BR, CL, DE, DK, ES, GR, JP, NL, NO, NZ, SE, UK, US(NOAA), ZA	BR, FI, FR,
B-373.5	Do you agree to retire this specification and entry E18 in INT1? (Some rationalization of E13-18 in INT1 may be needed) Agreed, to be referred to INT1 subWG	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA	
B-374.4	Box E12 in INT1 is empty. Do you agree that the addition at B-374.4 is adequate guidance for Calvary crosses and no symbol is required? Majority agreed	AU, BR, CL, DE, DK, ES, FI, GR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA	FR,
B-375.1-2	Can we really distinguish between radio/TV towers and masts; should we use just one symbol (E28) and retire E29? (A similar question would then apply to E30.1/30.2) This question was not well phrased, but it seems clear from comments that separate symbols should be retained	CL, ES, GR, ZA	AU, BR, DE, DK, FI, FR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA),

Specification	Question	Yes	No
B-376	A cylindrical silo is really no different (except possibly in terms of height) from other cylindrical tanks. Should we retain the separate symbol (E33)? Note: if retained, the term should be 'Cylindrical silo' in INT1. Deleted 'cylindrical', retain E33	AU, BR, CL, DE, GR, NL,	DK, ES, FI, FR, JP, NO, NZ, RU, SE, UK, US(NOAA), ZA
B-379.1	Do we need to retain the more complex E34.1 (two parallel lines plus tower squares), as well as the simpler version? (Currently the simpler version is shown in S-4. If the answer is yes, we will ask DE to supply their version of the symbol for S-4). Simple version preferred (as FR/ES)	BR, CL,	AU, DE, DK, ES, FI, FR, GR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA
B-381.3	Is the example of a pontoon bridge required (D23.5)? Retained	AU, BR, CL, DE, DK, ES, FI, FR, GR, JP, NL, NO,	NZ, RU, SE, UK, US(NOAA), ZA
	Do you agree to remove the example of a drawbridge (D23.6) as it is the same as a bascule bridge? No change – see AU comment	DE, ES, FI, FR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA	AU, BR, CL, DK, GR,
B-382.1	Do you agree to delete the sentence about radar echoes? Majority agreed	AU, BR, CL, DE, DK, ES, FI, FR, JP, NL, NO, NZ, RU, SE, UK, US(NOAA), ZA	GR,
B-383	Should the overhead pipe symbol be replaced by D29? Retain existing symbol	NL, ZA	AU, BR, CL, DE, DK, ES, FI, FR(N29), GR, JP, NO, NZ, RU, SE, UK, US(NOAA),

Further comments

AUSTRALIA (**see also marked up copy of Annex A**) Used as appropriate.

B-340.3: The first sentence reads as though conspicuous landmarks do not have to be visible in narrow approach channels, which does not make sense to AU. What is the definition of a "narrow approach channel" – does it mean a channel marked by navigation aids, which means that conspicuous landmarks are therefore not important? If this were the case, this is not a question as to whether the object is conspicuous, but whether it is important to show it on the chart, which does not go to the question of conspicuous/not conspicuous. Also, additional text has been included at B-300.3 to include the navigable parts of rivers, which should also be included here. Suggest the first part of this sentence read "A conspicuous object should meet the following conditions: it should be plainly visible over a large area of sea and the navigable parts of rivers; ……".

Chairman: agree; wording amended as B-300.3.

B-351.3: AU does not have any problem with the removal of the current B-351.3, but a statement for a preferred colour should be included somewhere in this section (particularly as there is a reference to black contours in the last sentence of the new B-351.3). Suggest the first sentence of the new clause B-351.3 be amended to read: "**Contour lines** should be fine continuous lines, preferably in black (but other colours may be used).".

Chairman: accepted.

B-351.6: There should be a qualification as to what is "sufficient". Suggest the first sentence be amended to read "**Height labels,** with the height in metres above height datum (see B-352), must be placed at sufficient intervals on contours to enable easy interpretation by the mariner.".

Chairman: reworded.

B-352.2: The wording of clause B-305.2 as included in B-300 to B-330 Round 2 (CSPCWG letter 3/2012) includes a clarification for depths less than 5 metres. Suggest this be included at B-352.2, e.g. "**A point or summit, the height of which has been determined,** must be represented by a dot accompanied by a figure indicating the height in metres (or metres and decimetres if less than 5 metres) adjacent to it. It should be on the landward side if space allows.".

Chairman: It seems unnecessary to specify decimetres at less than 5m for spot heights. That really only applies to islets, as explained in B-421.1. Most spot heights will be much more than 5m; if less, they are being used to indicate a flat coast, rather than a precise measurement. No change required.

B-352.3: The second sentence makes reference to "round numbers". From the example AU assumes that this is rounding to 10 metres? Suggest this should be clarified in the document, e.g. "Figures for approximate heights should be in round numbers (ie to the nearest 10 metres), but in the same style as other spot heights.".

Chairman: accepted.

B-352.4: In the second sentence, the bar above the height is an indication that the height is approximate. Suggest that the sentence be re-worded to reflect this, e.g. "Such heights should be shown as approximate heights (indicated by inserting a bar (¯) above the height figure).".

Chairman: accepted.

B-353.1: In relation to the question regarding B-353.4, AU considers that this clause may have been inserted in order to distinguish between navigable and non-navigable rivers at the chart scale. AU is in favour of removing the contents of B-353.4, but additional wording may be required at B-353.1, e.g. "Where a double line is used, either fully charted detail must be shown where the river is considered navigable at chart scale, or the tint between the lines should be the same as at the navigable water at the entrance to the river (ie either blue or intertidal tint) where the river is considered to be non-navigable at chart scale.".

Chairman: Reworded, but more succinctly.

B-353.6: AU does not consider that a lake must be shown on a chart where the navigable river is not shown (e.g. due to scale). Suggest re-word first sentence to "**Lakes** must be shown where part of the course of charted navigable rivers, or close to the coastline.".

Chairman: accepted.

B-353.8: On AU charts, we use the ice front symbol for the seaward edge, the pecked line for the landward boundary (all in black) and no land tint. We only annotate the glacier when it has a name.

Chairman: This is really option c, without the legend glacier. The voting clearly prefers option a.

B-355.1: "vol" is not an international abbreviation, and would therefore need to be proposed. When I see "vol", I normally associate it with "volume".

Chairman: 'vol' is UK's abbreviation for volcano. We did not mean to propose it as an INT abbreviation, so have added 'eg'.

B-360: AU general comment: AU no longer shows cultural information on charts unless it is used for navigation (visual and radar). We are in the process of removing much of our currently charted cultural information as part of the chart New Edition maintenance process.

Chairman: noted, but AU's practice should not change the guidance in S-4.

B-360.2: AU does not show the limits of built-up areas on its paper charts (or ENCs) as the limits are subject to constant change which is not in the scope of our Notices to Mariners, which means these limits are not kept up to date (and we are not normally kept appraised of the changes in these limits). This clause states that the approximate limits of built-up areas are important, AU would prefer a statement that an indication of the existence of built-up areas is important – AU does this through name annotation (city, town, suburb etc) only. This negates the situation of limits becoming outdated.

Chairman: a name alone is inadequate to distinguish between a major city and a small town.

B-362: AU now only charts railways where they are of some significance to navigation, i.e. where they run along the coast, are part of port infrastructure or at the approaches to bridges over navigable water (to indicate the nature of the bridge). Is part of the charts function still to give "a general indication of the land development"? AU considers that this may now be redundant given the ease of access to other sources of information (e.g. via the internet). Perhaps a statement similar to that added at the start of B-365 would be more appropriate? E.g: "Railways should only be charted (on large and medium scale charts) if of navigational significance or to give a general portrayal of development. In largely undeveloped areas, railways may be charted to draw attention to isolated ports."

Chairman: accepted.

B-362.1: As AU only uses the bottom of the 3 symbols, we would have no problem having the other 2 symbols made obsolescent. However, This depends on the results of the answers to the previous question – if all 3 symbols are used in fairly equal proportion, then it would be difficult to make any of the symbols obsolescent.

Chairman: no clear consensus achieved.

B-362.2: "Sta" is not an international abbreviation, and would therefore need to be proposed.

Chairman: 'sta' is UK's abbreviation for station. We did not mean to propose it as an INT abbreviation, so have added 'eg'.

B-365: AU uses the same criteria for depiction of roads as it does for railways (see AU comment for B-362 above).

Chairman: no action required.

B-370: See AU comment for B-360.2 regarding AU policy for depiction of built-up areas.

B-373.2: AU does not feel it is necessary to state that no symbol or abbreviation exists, therefore suggest that the last sentence of the clause be removed.

Chairman: reworded.

B-374.6: Suggest that the distinction between on-shore and off-shore wind farms needs to be clearly made in S-4. Suggest that the 3rd paragraph of B-374.6 be headed "On-shore wind farms", and similarly, B-445.9 be headed "Off-shore wind farms". This will more easily allow for the different symbology to be used for the boundary of the farm (solid line for on-shore). Suggest that this amendment also be made in INT1 at E26.2 and L5.2.

Chairman: accepted.

B-375.1-2: The distinguishing feature between a mast and a tower is that a tower is free-standing, while a mast is supported by guylines. In Australia, another difference is that masts tend to be significantly taller than towers – in some cases the masts extend to over 150 metres above the ground. Towers tend also to be more "solid" structures than masts, in terms of the ratio between height and breadth. AU would therefore prefer to keep the two symbols, and re-insert the removed text "held vertical by guylines" in B-375.1. Note that towers and masts are clearly distinguished in S-57 (and by extension in ECDIS portyrayal, the Hydrographic Register and S-101).

Chairman: accepted.

B-376: Discussions held recently within TSMAD in regard to the Hydrographic Register have identified that while most silos are cylindrical; there are instances where large silos that are required to be charted are rectangular or square. AU preference would therefore be to retain E33 as an example of a silo symbol, and remove the word "Cylindrical" from the clause heading of B-376.3 (the new last sentence in B-376.3 could also then be removed).

Chairman: accepted.

B-379.1: Based on the current S-4 wording, which makes no mention of the "towers" indicated by black squares, AU can see no reason to retain the complex symbol. However, it would be interesting

to get the users' opinion on this in regard to the usefulness (or even the understanding) of these black squares. For instance, if they are in position, can they used as a positioning aid? As AU has very few fortified structures on its charts, we are not in a good position to answer this question.

Chairman: there is a separate symbol available to chart towers if they are useful fixing marks.

B-381: The statement "Bridges may be named" is a statement of fact and not really guidance for compilers. Suggest this sentence be amended to "The name of the bridge may be shown, if known.".

Chairman: accepted.

B-381.3: I recently had the opportunity to travel across a fairly substantial pontoon bridge, which was required to be shown on the appropriate charts. Would therefore support retention of this example.

Chairman: accepted.

B-381.3: Annotation is different, and definitions of these types of bridges are slightly different (as taken from IHO Dictionary), therefore support retention of both D23.4 and D23.6.

Chairman: accepted. It seems that bascule and lift bridges are particular types of draw bridge. These are all just descriptions of various types of opening bridge; another option would be to show a profile of the open bridge.

B-382.1: AU is concerned about the new 2nd last paragraph. This seems to suggest that a vertical clearance (as distinct from safe vertical clearance) should be used where it is required to take into account additional allowances. The safest portrayal would be the vertical clearance taking into account all conditions minus the safety margin, shown on the chart as a safe vertical clearance. Suggest that this paragraph be re-worded similar to "Note: this symbol is only used to apply a safety margin from electrical discharge; for allowances for variations of the cable's catenary (curve) due to meteorological conditions, which should be taken into account in addition to the safety margin, see B-380.2.".

Chairman: slightly reworded.

B-383: If D29 were to be used for both submerged and overhead cables [pipes], the only difference between the symbols would be the vertical clearance. If the vertical clearance is not known, how would this be distinguished as a submerged pipeline? Additionally, the difference in the symbols provides a clear distinction between features which may be an overhead hazard from features which may be a submerged hazard. Suggest retain current D28 symbol.

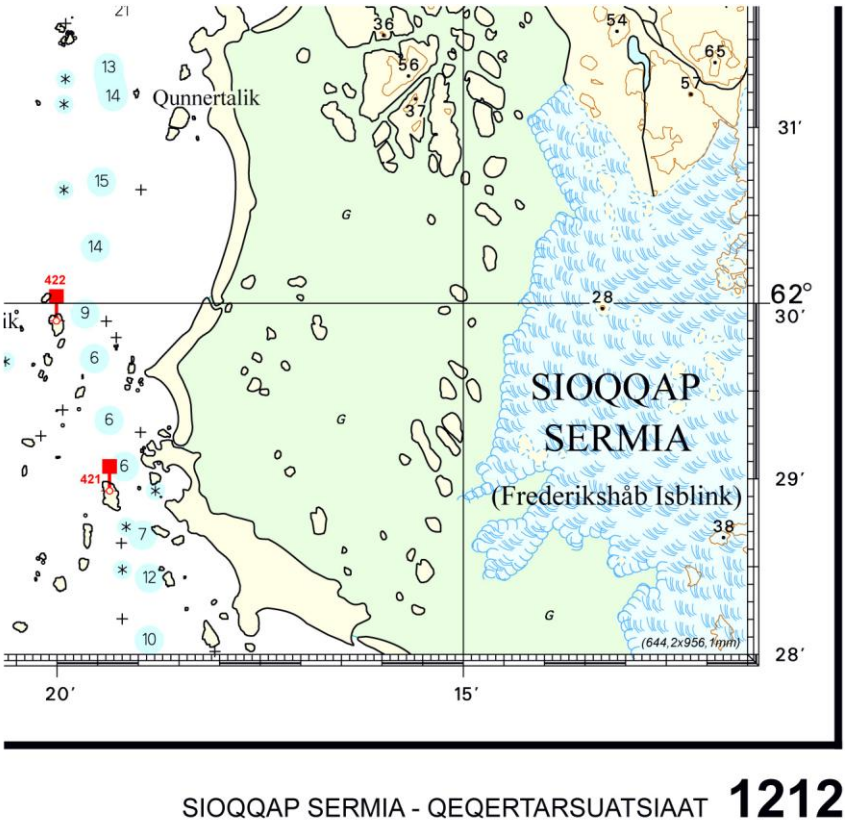
Chairman: accepted.

B-390.1: Suggest that if guidance is to be included that photographs may be included, examples (and possibly additional guidance) should also be included as to what constitutes "suitable". TSMAD is currently dealing with many instances of unsuitable photographs being included as associated files in ENC exchange sets through population of the attribute PICREP (pictorial representation), due to lack of guidance in S-57.

Chairman: brief guidance added.

DENMARK

B-353.8: Danish depiction of glaciers on Greenlandic charts, see below:



Chairman: although this is a different depiction from any of those suggested, it seems the orientation and distribution of the infill lines would need significant manual intervention and is not therefore suitable for a modern INT symbol. Blue tint has never been widely used as a background for glaciers (being reserved for water features) and is less intuitive than white background. The blue ice front symbol also contravenes B-449.1.

B-362.1: If all 3 styles are used, none should be made obsolescent.

Chairman: agree, no clear consensus achieved.

B-375.1-2: Significant differences between towers and masts.

Chairman: accepted.

FINLAND

B-368/B-374.6: Caravan and camping sites usually have relatively well defined boundaries like cemeteries and airfields. So a solid line would do well. Agree. A wind farm area usually is not defined on the ground. It is usually just an abstract area where there is many wind turbines. Therefore a dashed line would be better.

Chairman: the majority accept the proposal. It is likely that wind farms will usually have a surrounding fence, but if not, a line enclosing the outermost turbines would suffice. Alternatively, the symbol can be used without a surrounding line of any sort, as shown in INT1. It seems unnecessary to try and distinguish between a physical and notional boundary on land; it is better to have a consistent practice.

B-373.3: The addition says that chapels *would not usually* be charted and therefore no symbol exists. That raises a question: if one *would exceptionally* be charted, how would it then be symbolized? The addition needs some clarifications, if it is retained.

Chairman: reworded.

B-375.1-2: Towers and masts are two different structures. It should not normally be too difficult to distinguish between them. It is more difficult to tell which kind of communication the structure is for. We are actually using E28 also for telecom masts, not just for radio and TV. It would be useful to widen the meaning of E28 (and E29) to cover all radio communication applications and not just TV and radio. One of the Finnish telecom companies is actually building a nation-wide terrestrial digital HD TV network by installing low-power TV transmitters in their existing mobile phone transmitter masts instead of traditional high-power transmitters in dedicated TV masts or towers. This will mean that those "TV masts" look extremely similar to masts for mobile phone networks…

Chairman: accepted.

B-381.3: We have pontoon bridges on our charts – both "fixed" and opening ones.

Chairman: retained.

B-383: D29 in black in water would be the same as L41.1, wouldn't it?

Chairman: accepted.

FRANCE

B-350:

Could Andrew propose a translation in French for drainage? Does it stand for: hydrographie terrestre? Basically, the translation is "tout-à-l'égout" (main drainage…). Could you adopt an other term? Please, see also B-353.

Chairman: 'Drainage' is used in English both for local application (eg to a house or town) or as a geographical term for the network of rivers, lakes, etc, which 'drain' an area. It is therefore the appropriate term, but to make it more explicit, we have amplified it to 'Land drainage'. 'hydrographie terrestre' would seem appropriate in French (as similarly used in Spanish).

B-352.2

France proposes to add at the end of the last sentence 'figures should be a light font', as it has been done at B-351.6 for height labels.

Chairman: That seems inappropriate, as the figures should be clearly distinguishable from the contour labels. Wording amended to make this clear.

B-353.4

This sentence means that rivers which are navigable by sea-going vessels require no specific symbol and are simply represented with C20 (except when navigable estuaries and rivers wide enough to contain hydrographic details at chart scale).

Chairman: that may be the meaning, but it is not readily apparent. We have added '(navigable or non-navigable)' to B-352.1 and deleted this sentence, as agreed by most members.

B-353.8

France suggests using blue outline + legend with a limit at sea using a blue version of K11 ('ice crystals')

Chairman: This is 'a'+'e2'. 'a'+'e1' received more support.

B-354.2

For Nipa palm, France suggest to keep the description of the Nipa palm in this section, with all the trees symbols, and to add a comment, if necessary, in the 'mangroves' section referring to B-354.2.

Chairman: the nipa palm is charted for the same reason as mangroves, so is better explained there, as agreed by the majority.

Filao appears to belong to the family of Casuarinaceae, like Casuarina. France suggests expanding term for symbol ‘c’ to be ‘conifers, casuarina and filao’.

Chairman: as the filao is a sub-species of casuarinas, then it does not need to be listed separately.

B-362

The terms proposed in B-362 are totally satisfactory with explanation when it is useless to represent disused railways.

Chairman: clear majority view that there is no point in charting disused railways.

B-366.1

It seems there is a useless “the” at the beginning of the second sentence, ‘If the neither the outline …’.

Chairman: removed, thank you.

B-368

France considers that boundaries which correspond to a physical limit, eg. a fence around a cemetery or a camping site, should be fine continuous line and other boundaries which do not correspond to a physical limit but just an area including similar objects of interest for the mariners, eg. an area of windturbines.

Chairman: agree.

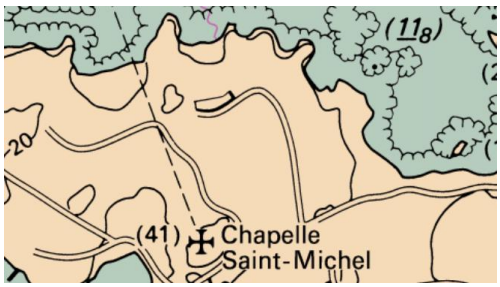
B-372.1

France agrees that generally it is useless to indicate where post offices are located. But in particularly isolated areas, it can be useful for the mariners to know where the post offices are, in order to define where to go. As the symbol already exists, it is easy to retain it.

Chairman: majority view to make obsolescent (as INT symbol).

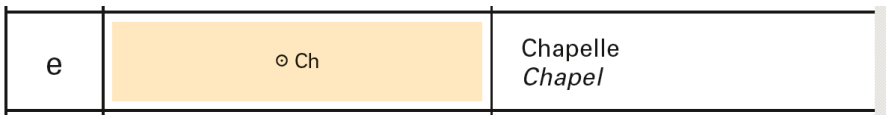
B-373.2

France considers when chapels are prominent, they can be charted with a cross (E10.1) and the legend chapel, or equivalent. Please, see this example from a French chart:



Chairman: covered by revised wording.

France also has a national symbol to do so when chapels are no prominent:

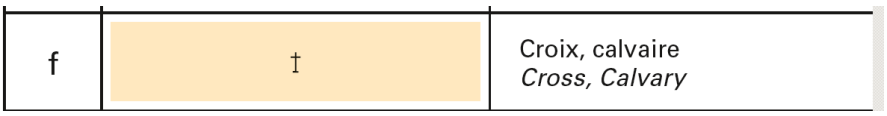


B-373.5

France agrees with the proposal made at B-373.3, associating marabout to the symbol E13-16.

B-374.4

France has a national symbol for Cross and Calvary and propose to adopt it as international



symbol:

Chairman: majority view is that a distinct INT symbol is not required.

B-374.6

France proposes to replace the symbol E26.1 in the text by E26.1: 'If such features are sufficiently prominent to justify charting, the symbol E26.1 may be used'.

Chairman: accepted.

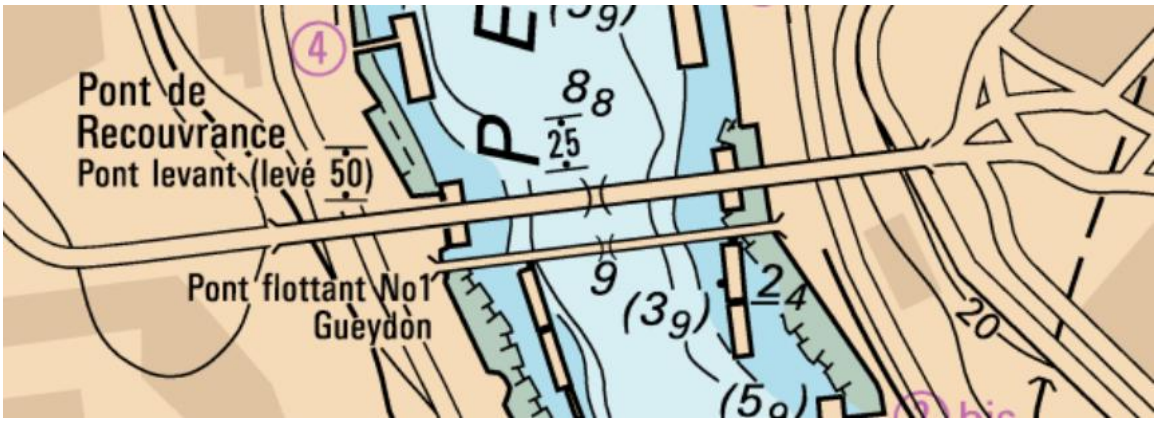
B-375.1-2

It is important to distinguish a tower which can be a "big" structure and a mast which can be a very light structure. The two kinds of symbol (E30.1 and E30.2) should be kept.

Chairman: accepted.

B-381.3

Please, see this example from a French chart showing a pontoon bridge.



B-383

The use of a line to describe overhead pipes is a good means to avoid confusion with pipe line on land (D29) even if there is the specific legend "Overhead pipe".

Chairman: accepted.

ADDITIONAL NOTE FROM FRANCE:

Dear Jeff,

I have read your answer with a great attention. I have a question about international abbreviations: for B355-1 and B374-1, you kept in the modify Word file, the words "or equivalent" after proposing to adopt vol and Fla as international abbreviations. Do you agree if there is an International abbreviation, there is no translation available?

I know the following comments should wait for the future Andrew's answer, but as we have just worked on the subject, it is easier for me to write them now (I am sorry Andrew!): I agree with you that *vol* is not appropriate as an abbreviation for volcano - vol means volume for me also; may be volc is more comprehensive.

Chairman: yes, I agree. But we did not intend to propose 'vol' as INT abbreviation. (Fla is already INT).

In another way, is *CULTURAL (**MAN**-MADE) FEATURES: GENERAL *more comprehensive / more exact than the previous title (ARTIFICIAL FEATURES: GENERAL)? The sense of cultural is may be different in English; in French, we associate cultural to art, music, literature, architecture (or agriculture!)...

but not to harbours, railways, quarries, airports, wind turbines ... From my point of view, the previous title was easier for translation even if man-made is unambiguous.

Andrew, do we need to change the title of B-360?

Chairman: We changed to agree with INT1, which has had 'cultural' since it was first published. Cultural in English has same meaning as in France (arts and agriculture, etc) but also as a geographical term for any human development (and we use it here in that sense). So, I prefer to change S-4 to agree with INT1 (which has been accepted by chart users for 30 years), but also add 'artificial' as another term in the parenthesis.

GERMANY

B-353.8: We would prefer random blue lines on white background with the outline symbol N60 (black or blue).

Chairman: this seems to be the most supported option.

B-368/B-374.6: Then we have to change the limit in E 26.2 to a single line. If the area is not defined or known exactly we can use the symbol without the line.

Chairman: agree.

B-373.2/B-373.3: In the case that chapels are very prominent and conspicuous they should be charted as churches. Therefore we would delete the last sentence of B-373.2.

Chairman: reworded.

B-376: The term in INT 1 should be only "Silo". In the case where it is not cylindrical we chart it rectangular.

Chairman: 'Cylindrical' removed.

B-379.1: We would prefer a symbol as in INT 1 NE of FR and ES without parallel lines.

Chairman: accepted.

JAPAN

B-375.1-2: The shape of a tower is different from the shape of a mast. The symbol (E29) should not be deleted.
Chairman: accepted.

B-383: The symbol for overhead pipelines (D28) should be used, in case chart users confuse overhead pipelines and submarine pipelines.
Chairman: accepted.

NETHERLANDS

B-362: disused railways might be charted when they are significant close to quays in harbours.

Chairman: I do not see why they would be useful to the chart user. A clear majority agrees not to chart them.

B-375.1-2: sometimes there are big differences between radio- and TV towers in height and construction.

Chairman: accepted.

B-379.1: keep only the simple version

Chairman: accepted.

NEW ZEALAND

B-368, B-374.6: A dashed line is easier to distinguish from contours.

Chairman: I do not think a straight line boundary is likely to be confused with the irregular shape of contours.

B-375.1-2: A mast and a tower are quite different in appearance, so we prefer keeping both symbols.

Chairman: accepted.

B-376: Suggest we add the text 'silo' to the tank symbol if it is necessary to distinguish a silo.

Chairman: majority preferred to keep existing separate symbol, but delete 'Cylindrical'.

B-383: If the symbol D29 was used for an overhead pipe, it would still need the text 'overhead' to show that the pipe does not sit under the water. We think this may cause confusion because D29 is known to be a pipeline at ground level or underwater. Therefore keep the current symbol.

Chairman: accepted.

NORWAY

* B353.8: NO shows a number of blue land elevation curves on top of glaciers (see below) to give information of elevation of glacier ice.

Chairman: NO voted for 'a'+ 'e1', which is the most supported option.

It is unclear in the graphic above whether the blue lines at the side of the glacier are streams or ends of contours. Also the edge of the glacier seems inconsistent: no limit/blue dashes/blue line. There seems no reason why standard contours could not be continued across a glacier, if considered necessary, which will be easily distinguished by the lack of land tint and blue dashed outline.

B-354.2 Norway does not use these symbols.

RUSSIA

1. We propose to move symbols E11, 12 from column 4 to column 2.

Chairman: the majority do not consider these are required as INT symbols.

2. B-373.5 With the excluding of this specification, how such constructions will be shown then?

Chairman: by E13 (see B-373.3, where 'marabout' has been added).

3. Section D. There are the examples of different bridges shown in the same way in 23.1, 23.2, 23.3, 23.4, 23.6. Only by an explanatory inscription it is possible to understand the purpose of the bridge. Should these symbols be reviewed?

Chairman: it is difficult to devise intuitive symbols to distinguish different types of opening bridges (if necessary). We have added the possibility of inserting a profile of the bridge in open position.

SPAIN

B-373.3: Term "Chapel" should be included in B-373.3, as follow: A temple (including chapel, joss house, marabout, pagoda, and shrine).

Chairman: It would seem odd to include 'Chapel' in the list at B-373.3. While it would be possible to consider one universal symbol for any religious building, the church ✠ symbol is so well established it would be difficult to remove. A chapel, if prominent enough to be worth charting, seems more closely related to church than temple.

SWEDEN

B-353.8: In Sweden we do not have any experience with portraying glaciers in charts, so Sweden refrains from having an opinion in this case. However we have the overall opinion that we must, in the standard, use computer generated symbology.

Chairman: agree.

B-383: D28 is needed to distinguish between pipes under water L41.1 and pipes overhead.

Chairman: accepted.

UK's Hydrographic Data Base (HDB) expert

B-353.8: Easiest option from a HDB point of view would be to create a blue pecked outline for the glacier and automatically produce an annotation of 'glacier' with the name of the glacier if known. Alternatively, we could create an area feature with the blue pecked outline and an automatic infill of ice crystals (blue version of K11) with a specified distribution. In either case the user would have to manually insert the leading edge of the glacier with symbol J21.

Chairman: Most supported option for infill was the ECDIS-style symbol.

B-379.1: The more complex depiction would preferably be dropped as this would require manual edits within HDB Paper Chart Editor.

Chairman: accepted.

US(NOAA)

B-352: Request adding the following to B-352: "When data for topographic heights, such as spot heights and land contours, are only available when measured from a reference level other than the height datum, an explanatory note should be added to the chart."

Explanation: In the United States, spot heights and land contours are based on the North American Vertical Datum of 1988, or in Alaska, the National Geodetic Vertical Datum of 1929. These levels more closely approximate sea level than the charting datum for all other heights (in most U.S. cases, Mean High Water). Although this is neither in compliance with Publication S-4, B-302.2, nor with IHO Technical Resolution 3/1919 (amended 2008), it is the reality that NOAA cartographers are faced with. Elevation data for topographic relief is only available when referenced to NAVD88 or NGVD29, neither of which is the datum for any other charted heights.

Chairman: whatever datum is used must be stated in the title notes, so we have included a cross reference to B-241.6. Generally, the height datum of the chart will be whatever datum the general topographic heights (contours and spots) are measured from; other heights including drying heights, light elevations and clearance heights should be mentioned separately.

B-353.6: Request changing B-353.6 to: "Lakes navigable by sea-going vessels must be charted with hydrographic information when available and regular tinting rules shall apply based on the charted depths. Lakes must also be shown where close to the shoreline, or where part of the course of navigable rivers and hydrographic data is not available. Such lakes shall contain blue tint. In all cases, the names of lakes must be in sloping lettering."

Explanation: As written in the draft from CSPWG Letter 05/2012, North America's Great Lakes,

Lake Ponchartrain, Lake Washington and Lake Charles, all of which incur large vessel traffic, would be completely blue tinted.

Chairman: we have included some words to express the fact that hydrographic data might be inserted in lakes, but it raises an interesting question of the extent to which S-4 applies to 'inland waters'.

B-353.8: A legend "Glacier" is short, to the point, and easy to chart, requires no special programming, and for most mariners, intuitive. It presents a clean, uncluttered, appearance. This option is similar to B-354.1 (Wooded) and B-353.7 (Salt pans).

Chairman: agree, although we must remember the principle that an intuitive symbol is better for non-English speakers than a comparatively rare English word.

B-354.2: The United States (NOAA) does not use these symbols.

B-355.2: Request adding the following: An extensive lava flow may exceptionally be represented by black dashed limit lines the legend "Lava" spaced out appropriately in the area.

Explanation: See remarks for B-353.8.

Chairman: guidance on depicting large areas of lava added, but I can see no good reason to vary the outer limit, especially as a black dashed limit will be difficult to associate with a short legend over a large area. It is not really similar to a glacier, as the omission of land tint makes very clear the area of the glacier.

B-365.2: S-4 states that "Roads must be represented by two fine parallel lines…." Request adding the following: "Where road patterns may interfere with information of greater importance to the mariner, roads may be shown with a single heavy line in a subdued colour or screen."

Explanation: Roads are primarily background information of lesser importance in establishing position. The subdued roads shown on Norwegian charts at CSPWG8 showed the presence of important roads, without overwhelming other data.

Chairman: introducing an additional road symbol is not good for standardization (we want to avoid another situation like railways). If roads are interfering with more important information, they can be broken or omitted; we have tried to encourage limiting the amount of road detail, especially avoiding a 'road map' style on a nautical chart.

B-366.3: It would appear that a heliport "must" be charted, but a helipad "should not" be charted. Would most nautical cartographers be able to differentiate a heliport from a helipad? What if the "helipad" is very close to the shoreline or on a wharf? A helicopter on the helipad, or approaching the helipad, could help establish position. Recommend, changing "should not" to "may" using the same symbol as "heliport" The point is not how large the facility is, but that helicopters take off and land at this location.

Chairman: the wording does not mean that a heliport must be charted, only how it must be charted **if** it is charted; we have moved 'if required' to earlier in the sentence in the hope that will be clearer. However, we have changed the emphasis to allow for charting helipads.

B-368: Please correct error in text: "…The tent symbol is suitable for use for combined camping and caravan sites and for sites dedicated only to **caravans**." That should read,"…..dedicated to tent camping." Sites dedicated to caravans appears to have been inadvertently repeated.

Chairman: this is not an error. See IHO CL 71/2010 – a majority of nations voted to use only the tent symbol, including for sites which are dedicated only to caravans. However, because a significant minority preferred to have a separate symbol for caravan only sites, the wording was expressed to allow that (ie 'may'). Because this has caused confusion, we have rearranged and clarified the wording, but not changed what was agreed by the MS.

B-373.2: The draft states, "A church with a cupola, ie a rounded or dome-like roof, must be indicated by the abbreviation "Cup" or equivalent. St. Paul's Cathedral in London has a dome-

like roof, but somehow “Cup” just doesn’t seem to be appropriate. S-32 adds the adjective “small” before the tem “dome-like” but “dome” is not defined in S-32.

Chairman: there seem to be conflicting definitions of the exact meaning of cupola. I agree that a large dome (such as S. Paul’s) would be better described as ‘Dome’; we have amended the wording accordingly.

B-373.4: Request insertion of the words “most prominent” in “the position of the **most prominent** minaret”, as the mosque may have more than one minaret.

Chairman: accepted.

B-374.6: In the comments field, the question is asked if the black dashed limit line for a wind farm be better as a continuous line, in common with other land boundaries eg cemetery, airfield? The dashed black limit line for wind farm looks like a limit line. A solid black continuous line looks like a structure, a railway (B-362.2), a street (B-370.4), a building (B-370.5). The continuous limit line around a cemetery looks like there is a wall around the cemetery.

Chairman: see my response to Finland. The majority agreed with the proposal to make land limits (which are usually structures of some kind) consistent as an unbroken line.

B-375.1-2: See remarks by NZ. Keep both mast and tower as separate features.

Chairman: accepted.

B-376: Although both are cylindrical, tank and silo have very different appearances and function. Retain both symbols as in INT1, 2011 Edition.

Chairman: accepted (but deleted the word ‘Cylindrical’).

B-381.3: Yes, the United States (NOAA) does have pontoon bridges charted. The example is relevant and an example is required.

Chairman: accepted.

B-381.4: According to Wikipedia, two submersible bridges exist in Corinth, Greece.

B-383 The solid line gives the chart user immediate recognition that the charted feature is something different from a submarine pipeline.

Chairman: accepted.

PART B

_____

SECTION 300

TOPOGRAPHY

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SECTION 300 - TOPOGRAPHY

RECORD OF CORRECTIONS

Specification Number	Amendment Number	Circular Letters		Remarks
		Promul-gated by	Approved by	
Section 300 Preliminary Edition	—	21/1979	—	Facsimile reproduction of Specifications drawn up by the NSICC and the CSC. Then adopted by 1982 Conference. Decision No. 23.
B-313.4-B-320.1 B-326.2-B-326.7 B-328.3-B-366.2 B-380.2-B-380.3 B-382.1	—	—	—	Included in Cummulative Correction No. 1/1986.
B-327.1-B-373.1 B-373.6-B-375.4 B-382.1-B-390	2/1987	27/1987	14/1988	
Section 300 1988 edition	—		—	New loose-leaf edition - including symbols from chart INT 1.
B-381.4	1/1989	31/1989	52/1989	New specification.
B-390	1/1990	47/1990	—	Amendment to the title of the paragraph.
B-390.1	1/1990	47/1990	—	Former specification 390.
B-390.2	1/1990	47/1990	—	New specification.

Specification Number	Amendment Number	Circular Letters		Remarks
		Promul-gated by	Approved by	

CONTENTS

Section 300 - TOPOGRAPHY

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B-340 LANDMARKS, CONSPICUOUS OBJECTS: GENERAL

A landmark, in this context, is any object (natural or artificial) on land which is **prominent from seaward** and can be used to determine a direction or position. The term excludes objects specifically erected for navigational purposes; these are sometimes referred to as daymarks (see B-455.9). For charting purposes, the term should not be used in its meaning of a structure marking a boundary on land (see B-306).

Ease of positive identification is almost as important as prominence. An unusual or unique feature (eg a church with two spires where others have single spires or towers) or a universally recognizable shape (eg a wind turbine, a chimney), may qualify as a landmark even if not particularly prominent.

B-340.1 **Prominence** varies with the location of the observer and with lighting and atmospheric conditions; despite this, it is usually possible for the hydrographic surveyor to distinguish **conspicuous and prominent objects** from other landmarks and provide this information to the cartographer.

Other landmarks include identifiable objects (as opposed to unremarkable hills or urban areas) which by their nature are likely to be visible or prominent from certain directions and distances offshore. It will often be impossible for the cartographer to know whether an object is visible from seaward or not; in general, therefore, all tall features, such as towers, masts and chimneys, should be charted within a specified distance inland, which will depend on chart scale and nature of the relief.

B-340.2 **Charting landmarks.** Symbols must be used as widely as possible for charting landmarks to reduce language difficulties. Where a specific symbol does not exist, a building symbol or position circle may be used instead. Examples:

E1

Where there is no space for pictorial symbols, including cases where the symbols would have to break the coastline, small position circles (B22) and legends should be used.

To aid identification by the mariner it may be useful to add: name or description of the feature, the height above ground level (see B-303) or above the general height datum (see B-302); and/or identifying features, eg twin spires (possibly by a pictorial sketch, see B-390)

B-340.3 **Conspicuous objects.** A conspicuous object should meet the following conditions: it should be plainly visible visible from seawards or from the navigable part of a river; in varying conditions of light; and should be easily identifiable. The cartographer has the responsibility of making conspicuous objects stand out from other topographic detail and charting an adequate symbol or legend for positive identification by the navigator, where possible.

Conspicuous landmarks must be emphasized by adding a legend in sans-serif capital letters, even if the symbol used is a distinctive one. Examples:

E2

If a position circle (B22) is used for a conspicuous landmark, it should be the larger, 2mm diameter, version. Abbreviations should only be used if space is limited. Identifying features may be added in parenthesis, if useful, eg: '(red)', '(2 spires)'.

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Comment: Do we need new definition by HDWG?

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Deleted: A conspicuous object should meet the following conditions; it should be plainly visible over a large area of sea (except in narrow approach channels), in varying conditions of light, and should be easily identifiable. The cartographer has the responsibility of making conspicuous objects stand out from other topographic detail and charting an adequate symbol or legend for positive identification by the navigator, where possible.

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Comment: Wording adopted from B-300.3c, at suggestion of AU.

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A symbol representing a c

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The following former practices have been discontinued:

- adding the abbreviation '(conspic)', or equivalent, adjacent to the legend;
- including a list of conspicuous objects on the chart.

B-340.4 **Aids to navigation which are daymarks,** eg beacons and lighthouses, are designed to be prominent from seaward. Only where they are exceptionally conspicuous should they be emphasized by the method in B-340.3. See also B-455.1 and B-457.3.

B-340.5 **Pictorial sketches of landmarks** may be used where available; see B-390.

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. .

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. . See B-340.3 for style of legends.¶
¶
. . Where there is no space for pictorial symbols, including cases where the symbols would have to break the coastline, position circles (with central dots) (see B-305.1) and legends should be used (see B-340.3).¶
Page Break
B-340.3 . . **Legends** for all landmarks are not normally necessary when a pictorial symbol is used, but if required should preferably be in bold sans serif lettering. Lettering defining a conspicuous object, eg "Spire", should when used be in capital letters. Lettering associated with other landmarks should not be in capitals apart from initial letters. Abbreviations for "conspicuous" and its equivalents, eg "conspic", "rem" (French), "auff" (German), "Kenb" (Dutch), shall not normally be used.¶
¶
B-340.4 . . **A list of conspicuous objects** on charts is not recommended because it would increase correctional work and duplicate information in the Sailing Directions.¶
¶
B-340.5 . . **Position circles** for conspicuous objects for which there is no pictorial symbol shall be of not less than 2mm in diameter, with a dot in the centre.¶
¶
. . . . . HOTEL . . . . . **IE 2**¶
¶
. . Smaller circles may be used for other landmarks (see B-305.1).¶
¶ ... [1]

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B-350 NATURAL FEATURES: GENERAL

Natural topographic features shown on charts are grouped under four headings: relief, land drainage (including ice/glaciers), vegetation and volcanic activity. The types of features charted and the distance inland to which they are shown will vary with chart scale, type of terrain and possibly adequacy of aids to navigation. The significance to the mariner must be judged by the requirements of both visual and radar navigation; see also B-300.2.

The navigator sees the coast in profile; the cartographer depicts it in plan and must always be aware that the navigator's interest in land detail is at its greatest at the coastline and falls off rapidly inland; see also B-300.4. On a low-lying coast, even minor indicators to position near the coast, eg sand dunes, hillocks, low bluffs, may be very useful on larger scale charts. On steep coasts with deep water close inshore, sea traffic is likely to be concentrated off projecting points of land, and the nature of each headland must be made clear, eg whether it has vertical cliffs, is sloping or has a low profile.

Off coasts inadequately marked by aids to navigation, detailed topography near the coast will allow the mariner to clear dangers with the aid of visual transists of charted topographical features.

No definite standards can be stated, but useful guidance is provided in B-300.1-.4. The following principles should be observed:

a. Topographic detail should be kept to a minimum consistent with providing navigators with all identifiable features and a general picture of the relief as far as the probable horizon. This practice should enable landmarks to stand out from less important detail, unlike a typical topographic map.

b. Portrayal of detail should vary with distance inland, eg inconspicuous features such as marshes, minor lakes and streams should be shown only when close to the coast.

B-350.1 **Harbour plans.** The portrayal of natural features must be determined in conjunction with urban detail: see B-320.

B-350.2 **Coastal and approach charts.** Inshore navigation requires the navigator to pay constant attention to his precise position, often by visual means, because of the danger of running aground. Natural features close to the coast are most important on charts used for this purpose.

B-350.3 **Landfall and passage charts.** Where relief is required it may have to be shown further inland than on the larger scales, because distant hills may be visible (by radar and sight) from well offshore. Minor features, such as vegetation, should only exceptionally be charted (see B-354).

B-350.4 **Navigable rivers, lakes and canals** should be shown as completely as possible on the larger scales.

B-351 RELIEF: CONTOURS

Mariners only require a general impression of the landscape viewed from some distance, not a detailed map. In some circumstances contours can be used to assess when objects, eg lights, may be visible or obscured. They will understand most methods of representation of relief where presented clearly. Hydrographic offices may choose the representation of relief most suitable to the terrain being charted, source material and the navigational requirements (see B-350). Generalized contours with spot heights for significant elevations is a commonly used and effective method. Another effective technique in mountainous areas is to use unlabelled closely

Comment: FR term may be 'hydrographie terrestre'. See also ES version of INT1.

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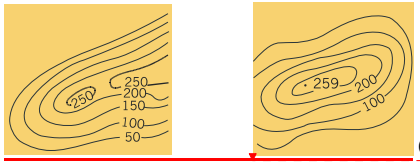
spaced contours in a subdued colour, which can provide a good indication of relief without detracting from the significant detail. The result is similar to the labour-intensive artistic form lines and shading which were formerly used.

B.351.1(I) **On international charts,** relief must be shown in such a manner that a printer nation must be able to reproduce repromat provided by the producer; hill shading (tinting) must not be inserted on international charts unless it can easily be eliminated from repromat without also eliminating significant topographic detail.

B-351.2 **Omission of contours from smaller scales.** Where it would not be worthwhile to contour smaller scale charts, spot heights, with a name if known, may be used to emphasize individual features.

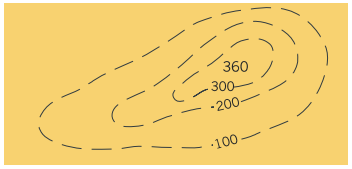
B-351.3 **Contour lines** should be fine black continuous lines (but other colours may be used).



C10

To retain clarity for the mariner, black contours must be broken for more significant detail, eg: names, buildings, roads, pictorial symbols, but may be continued through urban areas.

B-351.4 **Approximate contours.** Fine dashed lines may be used for approximate contours.

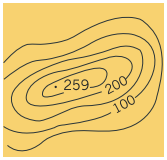


C12

B-351.5 **The contour interval** must be uniform within a single chart, or series of overlapping charts of the same scale, except that the lowest contour may be a **supplementary** one, eg: 25m where the basic interval is every 50m, 10m where the basic interval is every 25m.

Ideally the contour interval should be chosen so that not more than 10 contours are needed for the full range of height on a single chart or particular series of charts (for clarity and economy).

B-351.6 **Height labels,** with the height in metres above height datum (see B-352), must be sufficient to enable easy identification of the contours. The figures should be a light font and oriented so that they are always easily readable from the southern margin of the chart.



C10

Comment: Inger – do you have an appropriate example for S-4 (similar to what you sent, but without a light or any non-INT symbols)!

Deleted: It is therefore left to national discretion to:¶
¶
. . . a. . omit all relief representation, except dykes and sea walls;¶
¶
. . . b. . omit all relief representation, except spot heights and cliffs;¶
¶
. . . c. . show relief by contours (and spot heights); or¶
¶
. . . d. . show relief by form lines (and spot heights).

Deleted: any contours

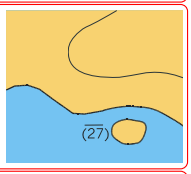
Deleted: form lines (emphasizing a few 'remarkable' hills) and

Comment: Suggested by AU

Deleted: **B-351.3** . . **Contours: use of colour.** Contours and form lines should be shown preferably in black but other colours may be used.¶
¶

Deleted: but **index contours,** usually every fifth one, may be emphasized by use of a bolder line.

Deleted:



Deleted: Where slopes are steep, contours should not be merged but intermediate ones may be omitted to leave a space of about 0,3mm between those shown. Index contours, if ... [2]

Deleted: Contours should reflect the nature of the topography, eg they should ... [3]

Deleted: and similar detail

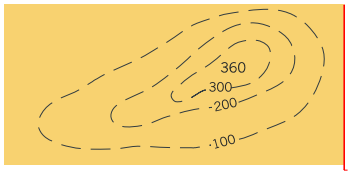
Deleted: (the distinction between these and form lines being that the contours ma ... [4]

Deleted: for any

Deleted: or

Deleted: placed at intervals on all

Deleted: weight



C12

Comment: DID: please improve graphic, so that there are no tiny portion of contours left beside the labels

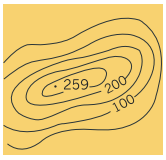
B-352 RELIEF: SPOT HEIGHTS

Comment: Form lines deleted as agreed at WG8

For the plane of reference for topographic heights (sometimes referred to as height datum), see B-302. This datum should be stated in the chart title notes, see B-241.6.

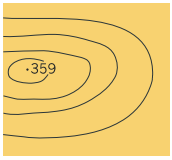
B-352.1 **Location of spot heights.** Spot heights on charts should normally be confined to summits of hills, mountains and cliffs, particularly on charts from which contours have been omitted; navigators will generally assume that heights selected for charting are summits.

B-352.2 **A point or summit, the height of which has been determined,** must be represented by a dot accompanied by a figure indicating the height in metres adjacent to it. It should be on the landward side if space allows and the figure should be larger or bolder than the contour labels to distinguish them.



C10

C11

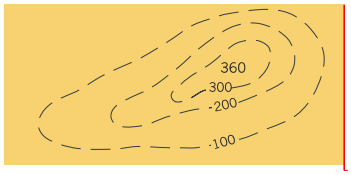


C13

The name of the summit, if shown, should ideally be aligned with the height figure and placed above it. The dot may be replaced by a triangulation point (B20, see B-304.1) if appropriate.

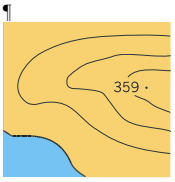
B-352.3 **Approximate heights** may sometimes be charted without a precise position, the position of the figures representing the location, eg a figure alone may be used to indicate the height of a flat topped cliff. Figures for approximate heights should be in round numbers (ie to the nearest 10m) but in the same style as other spot heights.

Comment: AU suggestion



C12

Comment: DID: please improve graphic, so that there are no tiny portion of contours left beside the labels

Deleted: B-351.7 . . Form lines must be shown as continuous lines, preferably made bolder in the SE quadrant to represent light coming from the NW. They should where possible be shown in conjunction with spot heights (or approximate spot heights) as the lines themselves cannot be given height labels.¶
¶


C13¶
¶

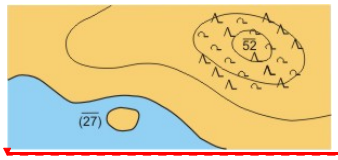
Deleted: symbols used for the location of heights, see B-304, and for

Comment: This should cover the possible issue raised by US.

Deleted: and form lines

Comment: It seems unnecessary to specify decimtres under 5m for spot heights. That really only applies to islets, as explained in B-421.1. Most spot heights will be much more than 5m; if less, they are being used to indicate a flat coast, rather than a precise measurement.

B-352.4 **The height of top of trees** may be charted in wooded areas where the ground level is not visible. Such heights should be shown as approximate heights (indicated by inserting a bar (¯) above the height figure). Generally the appropriate symbol for woodland (see B-354.1) will also be shown thus:

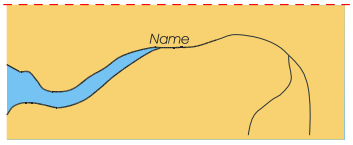


C14

B-353 LAND DRAINAGE: RIVERS, LAKES, GLACIERS

Inland navigable waters must be charted as fully as practicable, consistent with chart scale. Other rivers and lakes are to be charted only in a limited way to assist in providing a general indication of the topography (except close to the coastline where they may be of direct significance to the mariner). See section B-400 for charting navigable estuaries and rivers wide enough to contain hydrographic details at chart scale.

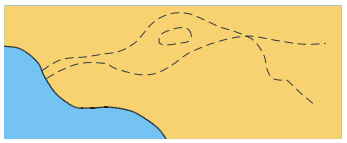
B-353.1 **The symbol** for rivers (navigable or non-navigable) should be a single line of coastline thickness, becoming a double line where scale permits. Hydrographic detail may be shown if scale allows and tint should be appropriate to the depth or, if no detail is shown, in accordance with the tint charted at the seaward entrance to the river.



C20

B-353.2 **Names** of rivers must be in sloping lettering along the course of the river, if possible above the line as viewed from the south edge of the chart, see C20 above.

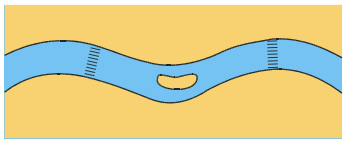
B-353.3 **Intermittent rivers** are those that are dry some of the time. The symbol must be a dashed line. Where both banks can be shown, or where, in the case of 'braided' rivers, the normal flow does not fill the river bed but is carried in a number of small channels, the bands and intermediate channels are each to be shown by dashed lines. Land tint must be carried across such rivers.



C21

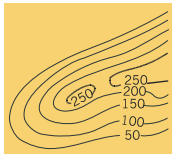
B-353.4 Not currently used.

B-353.5 **Rapids and waterfalls** in otherwise navigable rivers must be represented, where scale permits, by a block of dashes drawn parallel to the stream:



C22

Deleted: with above them

Deleted:


Deleted: . . The paragraphs below are not intended to cover estuaries and rivers in which depths are charted on the scale of chart under construction.¶
¶

Deleted: line

Deleted: and streams

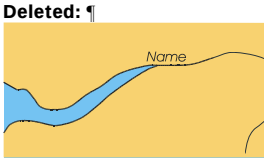
Comment: Reworded following comments by AU and by FR at B-353.4.

Deleted: Where a double line is used the tint between the lines should be the same as at the navigable water at the entrance to the river, ie either blue or intertidal tint. Lakes should have blue tint.

Deleted: aligned roughly with

Deleted: preferably with the bottoms of the letters nearest to the line symbol

Comment: This could be simply a comment under the graphic in B-353.1 – but B-353.2 would then be redundant.

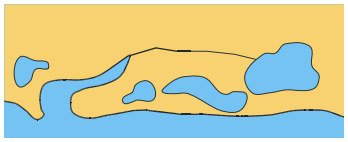
Deleted: ¶


. **C20**¶

Comment: Consensus to delete. Possible intention has been incorporated into B-353.1 '(navigable or non-navigable)'

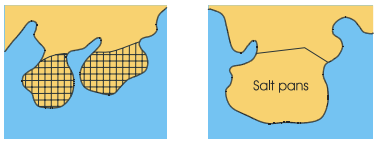
Deleted: **Rivers navigable by sea-going vessels** must be represented in the normal way as for perennial rivers (see B-353.1)

B-353.6 **Lakes** must be shown where part of the course of charted navigable rivers, or close to the coastline. Lakes should contain blue tint; exceptionally, they may contain hydrographic information and tints applicable to the depths. Names of lakes must be in sloping lettering.



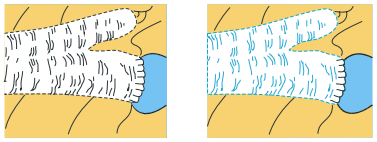
C23

B-353.7 **Salt pans,** in which sea water is evaporated, must be represented by a pattern of small squares, if charted. The horizontal and vertical lines must be parallel to the chart borders and the area must be enclosed by a continuous line. Land tint must be shown over salt pans. Where scale permits the outline of the individual salt pans may be charted. An extensive area may, exceptionally, be represented by a legend.



C24

B-353.8 **Glaciers.** The black ice front symbol (N60.1) must be inserted where a glacier meets the sea, with a date if considered useful (see B-449.1). The inland edges of a glacier must be delimited by a fine blue dashed line. Land tint must be omitted over the glacier. The legend 'Glacier', or equivalent, or the name of the glacier may be inserted in upright sans-serif black text. An infill of scattered short blue lines (similar to ENC symbol ICEARE04) may be added.



C25

B-354 VEGETATION

In most areas, the vegetation cover is of negligible importance on charts with the exception of:

a. areas where trees (including mangroves and nipa palms), reeds or marsh form the apparent coastline; see B-312;

b. isolated trees or clumps of trees forming landmarks, eg on an isolated low-lying island;

c. where, near the coast, wooded areas alternate with areas without tree cover and so may assist in identifying location.

The following features should be omitted from even the largest scale charts:

- Grassland, cultivated fields (including paddy fields), bushes
- Trees along roads, fences, ditches, and scattered trees (unless landmarks)
- Woodland cover within urban areas (unless adjacent to the coast)

Comment: US raises the question of the application of S-4 to navigable lakes (and inland seas?). Is this appropriate for an IHO publication?

Deleted: black or blue

Deleted: Groups of fine black or blue lines may be inserted across the glacier, to give the impression of an uneven slope; alternatively, the lines may be omitted and t

Comment: The blue dashed outline with legend was the favourite option indicated in the response to letter 05/12. The favourite infill was the computer-generated infill similar to ECDIS, which we propose could be an optional extra.

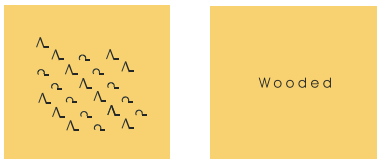
Deleted: within which shall be drawn to give the effect of declivity, a convenient number of broken lines approximately parallel to the contour lines of adjacent areas. These lines may be in black or blue. No land tint shall be shown over the glacier.

Comment: DID: replace by two new graphics, both with black ice front and blue pecked outline and no tint over glacier plus sans serif legend 'Glacier' inside. On one graphic, add 'random' blue lines similar to the computer-generated ENC symbol for a glacier.

Deleted: headlands or other stretches of coastlineposition

- Woodland cover which is the general ground cover and therefore useless for identification of position.

B-354.1 **Woods in general** must normally be represented, if required, by the symbol below, though an extensive area may, exceptionally, be represented by the legend 'Wooded', or equivalent, spaced out appropriately in the area.



C30

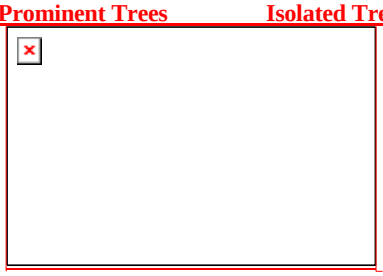
B-354.2 **Prominent trees** when found in small groups (as opposed to stretches of woodland) may be represented by pictorial symbols. When the position of an individual isolated tree is known, and is of use in position-fixing, a small circle must be inserted at the base of the symbol.

Prominent Trees **Isolated Tree**

a. Unspecified tree — C 31.1

b. Coniferous and casuarinas — C 31.3

c. Palm — C 31.4



B-355 VOLCANIC ACTIVITY

B-355.1 **An active volcano** may be identified by the legend '(volcano)', abbreviation, eg '(vol.)', or equivalent, under the name. Dormant volcanoes do not need any distinguishing legend.

Note: if volcanic activity (on land or underwater) may be a hazard to vessels, consideration should be given to inserting a cautionary note and associated area on the chart.

B-355.2 **A lava flow,** if likely to be visible from the sea and reasonably recent, must be represented:

C26

Land tint must be inserted over the lava flow. Lava flows tend to lose prominence with time. An extensive lava flow may exceptionally be represented by the above limit without infill, with the legend 'Lava', Lava flow' or 'Lava field' spaced appropriately and repeated if necessary.

Comment: DID: please replace table, only retaining the existing symbols a, c and d (relettering as a,b,c, but retaining INT1 numbers C31.1, 31.3, 31.4.

Deleted: A LAVA FLOW

Comment: 'vol' is UK's abbreviation for volcano. We did not mean to propose it as an INT abbreviation. (Note: 'v' is an INT abbreviation for 'volcanic' as qualifying term with 'R' as a seabed quality. That does not seem useful in this context).

Comment: Should we have a reference to underwater volcanos in B-428 or 429?

Deleted: by a continuous line, inside which shall be drawn a number of small circles and dashes of various lengths running parallel with the direction of flow. Land tint must be superimposed.

Comment: It seems no-one has yet produced a computer-generated version of this symbol.

Comment: US suggests a pecked black limit, but that would be difficult to associate with a short legend over a wide expanse (especially without a fill or tint change - unlike glacier). There seems no reason not to use the standard 'overlapping curves' symbol which should be associated with a lava flow.

B-360 CULTURAL (ARTIFICIAL, MAN-MADE) FEATURES: GENERAL

The principles stated in B-350 (Natural features: general) are applicable to cultural features also. In particular, the significance to the mariner must be judged by the requirements of both visual and radar navigation.

B-360.1 **Harbour plans:** see B-320.

B-360.2 **Coastal and approach charts.** For inshore navigation such features as roads and railways running down to, or along, the coast, buildings near the coast, and tall or distinctive structures which may be visible should be charted to assist identification of position, usually by visual means. The approximate limits of an urban area are important because, at night, the lights of aids to navigation may be difficult to identify in the vicinity of a well-lit urban area.

B-361 CANALS

Canals should be charted if they are navigable by sea-going vessels. Other less important canals may be charted (especially on larger scale charts) if they are of interest to small craft (leisure users) or if they form an important aspect of background information, eg linking ports to the interior.

A note may be inserted on the chart, advising where the necessary nautical information concerning canals for inland navigation is to be found [IHO Technical Resolution 4/1919].

Charts of major canals of relevance to sea-going vessels have certain features to which special consideration should be given, as follows:

B-361.1 **Minimum depths** or **maximum authorised draught** should be stated. These may be in a tabular form if there are several entrance locks of differing size. Actual depths in the canal may be shown, if known.

B-361.2 **Overhead clearances:** see B-380.

B-361.3 **Distances** along canals should usually be charted: see B-307.

B-361.4 **Locations** of lock and other traffic signals, and of the offices of the controlling authorities, should be made as clear as possible: see B-495.

B-361.5 **Lock and lock gate symbols:** see B-326.6.

B-361.6 **Canals on smaller scale charts.** The following symbols should be used, as appropriate to scale:

F40

F41.2

B-362 RAILWAYS

In urban areas, railways should only be charted (on large and medium scales) if of navigational significance or to give a general portrayal of development. In largely undeveloped areas,

Comment: We changed 'artificial' to 'cultural' to agree with INT1 (which always used 'Cultural' – for 30 years!). Possibly it is not the best word, which is why we added (man-made). We have now added 'Artificial' into the brackets.

Deleted: minor buildings and roads should be omitted from areas away from the vicinity of the coast

Deleted: **Largest scale continuous coastal series**

Deleted: and even minor tracks

Deleted: all

Deleted: particularly

Deleted: such times

Comment: Do we need new definition by HDWG?

Comment: Changed to 'may' following discussions at WG8. The TR will need to be cancelled.

Deleted: , preferably

Deleted: Where possible, a canal should be shown by a double line, preferably with blue tint between the lines

Deleted: . Where the scale is too small to use a double line, the following symbols should be used

Comment: DID: replace graphics with latest versions from 5011.

Deleted: depiction of railways within some miles of the coast is part of the chart's function in giving a general indication of the degree of land development.

Comment: As B-365, suggested by AU.

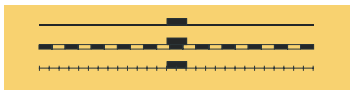
railways may be charted to draw attention to isolated ports.

Where railways run just inshore of the coast, or down to it, they may provide useful identification features.

Disused and dismantled railways should not be charted, although embankments and cuttings near the coast may be charted if considered useful, see B-363.

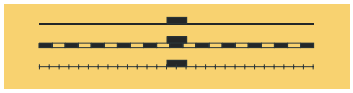
For dock railways, see B-328.4.

B-362.1 **A railway line or tramway** must be shown by one of the following symbols:



D13

B-362.2 **Railway station buildings** may be shown true to scale. On smaller scales, if required, the symbol of a black rectangle contiguous to the railway must be used.



D13

On harbour plans, the names of railway terminals or main stations may be shown. The legend 'Station', abbreviation, eg 'Sta', or equivalent, should be omitted for minor stations as the symbol is self-evident.

Railway sidings may be generalised.

B-363 TUNNELS AND CUTTINGS

B-363.1 **A tunnel entrance**, if required to be charted, must be represented:

D16

The line of the railway or road underground must be represented by dashed lines.

B-363.2 **A cutting**, if required to be charted, must be represented:

D14

Cuttings should be charted only if likely to be visible from seaward, eg when visible against the skyline.

B-364 EMBANKMENTS AND DAMS

For coastal embankments, including dykes and levees designed to prevent inundation, seawalls and causeways, see B-313.

B-364.1 **Embankments** inland should be charted only if likely to be visible from seaward. Short lengths of embankment may be shown by hachures with road or rail symbols along the crest as

Deleted: the depiction of

Deleted: draws attention to such ports and¶
may be some maritime interest for transport purposes

Deleted: Railways should be charted on large and medium scales.

Deleted: together with associated bridges, signal posts and other structure,

Deleted: It should not generally be necessary to chart the smaller associated features - post, gantries etc.¶

Deleted: railways (those which are mostly still intact) should be charted but may be marked 'Disused', or equ

Comment: There is no consensus for choosing one symbol over the others, so all are retained. No standardization achieved!

Deleted: where possible

Deleted: generally

Deleted: should be

Deleted: indicated by a sign similar to a bracket;

Deleted: the line of the railway or road underground must be represented by dashed lines.

Comment: DID: please replace new version with larger brackets

Deleted: by hachures, the wider parts of the hachures representing the upper parts of the slopes

Comment: DID: please replace with computer generated version

Deleted: cutting through

Deleted: The symbols for

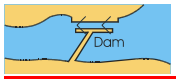
Deleted: See B-313 also for such coastal features as seawalls and causeways.¶

appropriate.

D15

Comment: DID: use computer-generated version

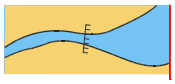
B-364.2 **A dam** must be represented, if required, either true to scale, with legend 'Dam', or equivalent, eg:



F44

or by the symbol drawn across and slightly overlapping the banks of the river, the 'teeth' pointing in the direction of the flow:

Deleted: a comb-shaped



F44

Comment: DID: this graphic is wrong. You would expect the 'lake' to be above the dam. Please turn the dam symbol to point the other way and then reverse the whole graphic, so that the lake is on the left.

INT1 producers: we will need to correct INT1.

For an opening flood barrage, see B-326.7.

B-365 ROADS AND TRACKS

A nautical chart is not intended to serve as a road map. Therefore roads should only be charted if of navigational significance or to give a general portrayal of development.

On coastal and approach charts, roads running down to or along the coast should be charted where scale permits, including local roads serving minor piers, boat hards and landings. Inland, major roads within a few miles of the coast may be charted to give a general indication of the degree of development, but tracks and all or some of the minor roads should be omitted. In largely undeveloped areas, with very few roads, it may be desirable to chart even minor roads inland.

Deleted: all

Deleted: and tracks

Deleted: line

Deleted: . Particular attention should be given to

Deleted: should

On very large scale harbour charts, roads may be shown true to scale, if required. However, they are usually of little navigational significance unless they run uphill away from the coast, and are therefore useful as a landmark, or occasionally in the approaches to bridges (to distinguish them from other bridges). For roads and streets in urban areas, see B-370 and B-371.

The following classes of road may be distinguished, if required, by means of symbols:

Deleted: Except on smaller scale charts, it is preferable to distinguish between t

Deleted: . . On very large scales, roads may be shown true to scale. For roads and streets in urban areas, see B-370 and B-371.¶

a. Motorways, road numbers may be shown if desired;

b. Other hard surfaced roads; major road numbers may be shown;

c. Unsurfaced or loose-surfaced tracks and paths.

B-365.1 **Motorways**, if it is useful to distinguish them from other roads, may be shown by three parallel lines, total width 1,8mm. The centre line should be finer than the outer lines. Approach roads and intersections may be shown by two fine parallel lines on very large scale charts.

Deleted: on large scales

Deleted: two bold

Deleted: apart

Deleted: with a fine line between them.

Deleted: clover leaf

D10

Comment: DID: need to replace with symbol dimensions conforming to description. (DE: can you provide your version?)

B-365.2 **Roads** generally, if required, must be represented by two fine parallel lines, normally 0,5mm apart. Where there is some advantage in distinguishing major roads from the majority, a width

of 0,9mm may also be used.

D11

B-365.3 **Tracks and paths**, if required, must be represented by dashed lines, double or single.

Deleted: (where charted)

D12

B-365.4 **On smaller scale charts** roads should generally be omitted.

B-366 AIRPORTS

Deleted: FIELDS

Airports (including airfields and heliports) within a few miles of the coast must be charted on large and medium scales; they are significant to coastal navigation because of the many visual and aural features associated with them and the related air traffic.

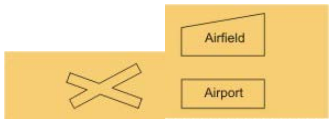
For lights associated with air navigation, see B-476.

Deleted: navigational aids

Deleted: and air obstruction lights, see the paragraphs on navigational aids

B-366.1 **Airports and airfields on large scale charts** must normally be represented by:

- a true to scale outline of the main runways; or
- if the outline of the runways is not known, by the boundary (where known) and the name or legend:



D17

If neither the outline of the runways or the boundary of the airport is known, the airport must be represented by the symbol:

Deleted: not known,

Deleted: the boundary (where known) and the name or descriptive legend.

D17

The characteristic pattern of the first option should be sufficient to identify the feature but the name of the airport may be added. The control tower and other major buildings should be charted on large-scale charts, if significant to the mariner.

Deleted: if necessary

Deleted: the

B-366.2 **Airports on smaller scale charts**, when near the coast and of maritime importance, should be shown by the symbol, with a name if considered useful:

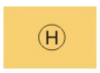
Deleted: should be shown

Deleted: ¶
¶
. . Airfields may be shown

Deleted: shown below or by their actual boundary and a legend.

D17

B-366.3 **Heliports** must, if required, be charted by a black circle 3mm in diameter containing the **international abbreviation** 'H':



D18

Comment: Discussed at WG8. Suggested new specification, symbol and INT1 ref. The symbol should be smaller than D17, because of its relative insignificance.

Helipads may be charted, if required, by the same symbol as a heliport.

Comment: Change proposed by US

For pilots transferred by helicopter, see B-491.2.

B-366.4 **Navigational restrictions in airport approaches** should be charted by a restricted area (N2.1), with an explanatory note, if required, giving details of the restrictions, eg limited air draught.

B-367 QUARRIES AND MINES

B-367.1 On larger scale charts, quarries likely to be visible from seaward must be represented by cliff symbols. A legend is not usually required.

E35.1

Comment: DID, please replace with computer generated (HDB) cliff symbol

Conspicuous structures associated with mines or quarries must be shown in accordance with the specifications for chimneys, towers, etc; see B-340.

B-367.2 **On smaller scale charts** mines and quarries may, if considered useful, be represented by the symbol of two crossed hammers:

E35.2/E36

B-368 CARAVAN AND CAMPING SITES

Caravan and camping sites should only be charted, on coastal and approach charts, if they are likely to be visible from seaward, when they may provide useful identification features.

A camping (or camping and caravan) site should be shown, if required, by the symbol (height about 3.0 mm):

E37.2

Deleted: . . A site for towed and motorised caravans may be shown, if required, by the symbol (height about 2.5mm):¶
¶
E37.1¶
¶

Comment: DID: please replace symbols by 5011 entries (ie with FLT background).

The tent symbol (E37.2) is suitable for use for combined camping and caravan sites and for sites dedicated only to tents or caravans. However, if preferred, a site used only for towed and motorised caravans may be shown, if required, by a caravan symbol (height about 2.5mm):

E37.1

It would usually be more appropriate to treat sites containing permanently sited large caravans (ie mobile homes) as urban areas (D1).

Deleted: The tent symbol (E37.2) is suitable for use for combined camping and caravan sites and for sites dedicated only to caravans. However, the caravan symbol (E37.1) may be used only, if required, for sites dedicated only to caravans.

Comment: This section reordered to prevent the possible confusion referred to by US.

If it is useful to show the extent of the site, the symbols may be shown within a black continuous line. The chart user will understand that in some areas such sites may be seasonal, so there is no need to include a note or legend stating that fact.

Comment: This would be better as a continuous line, in common with other land boundaries, eg cemetery, airfield.

B-370 BUILDINGS AND URBAN AREAS

Waterfront, landmark and some public buildings must be charted precisely and individually on the larger scale charts. When representing buildings generally, including urban and other built-up areas, the aim of the cartographer must be to create the correct impression of the extent of the built-up area and the density of the buildings. The following specifications relate primarily to large scale charts.

B-370.1 **Waterfront buildings** in port and harbour areas are of navigational interest and must be charted in detail, not over-generalised. Buildings between the waterfront and buildings lining the first street paralleling the shore may be individually represented, scale permitting. Away from ports and other built-up areas, even a minor building should be charted individually where it may be a landmark; see B-340.

B-370.2 **Landmark buildings.** See B-340.

B-370.3 **Within urban areas,** only waterfront, landmark, and some public buildings of interest to mariners should generally be shown individually. Major roads, streets, railways, etc may be shown in port areas, adjacent to coasts and elsewhere if of significance to navigation.

B-370.4 **The extent of urban areas** may be depicted in one of the following ways:

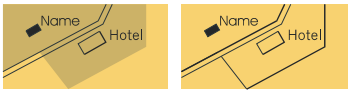
a. By using a street pattern of either single or double lines to represent urban areas. The southern and eastern sides of blocks may be emphasied by a bolder line (indicating shadow);

b. By the use of urban tint;

c. By a combination of a and b, eg:

D1

Landmark and public buildings of interest to mariners may be shown individually within an urban area:



D6

B-370.5 **Scattered inland buildings** which are not landmarks and are of no maritime importance must be omitted. Nearer the shore they may be generalised by charting a few representative buildings, sufficient to give the correct impression of building density. It is important not to exaggerate the extent of urban areas, or to turn villages into towns, by enclosing a fringe of lower density buildings within urban blocks.

Where urban areas are shown by the use of blocks with shadow edging, the visual weight of the blocks must be balanced against the weight of solid black shapes for single buildings. In such cases, buildings which, when drawn true to scale, measure less than 1,2mm in any direction must be shown as solid black shapes. Buildings which when drawn true to scale, measure less than 0,6mm in any direction must (if of sufficient interest to be charted) be enlarged to a black rectangle of minimum size 0,6 x 0,9mm.

Deleted: BUILT-UP

Deleted: and suburban areas, villages,

Deleted: some

Deleted: In ports, b

Deleted: the generally more ‘solid’ line of

Deleted: s (such as a boathouse)

Deleted: where they lie close to the coastline

Deleted: To aid identification by the mariner it may be useful to add the height above ground level (see B-303) or above the general height datum (see B-302).

Deleted: In such cases the urban areas are to be divided preferably into a number of blocks by the diagrammatic representation of major street of the actual street pattern. The size of the blocks shall depend on chart scale, decreasing as scale decreases. Large open spaces within built-up areas may be shown as such. The preferred method of representing blocks of buildings, or large individual buildings is the semi-pictorial one of using a bold line (indicating shadow) for the southern and eastern sides of the blocks. Providing the blocks are not too large, they will stand out reasonably well (without altogether dominating such features as relief and landmarks) and therefore not require hatching or tinting.

Deleted: a. . By extending the use of blocks giving a diagrammatic representation of the street pattern, as described in 370.3.¶
¶
. . . b

Deleted: .Hatching or tinting will not normally be required.

Deleted: when more than about 1 mile inland

Deleted: measure

D2

D5

B-370.6 **Inland villages** may be represented, where appropriate, by a symbol for the most prominent building, eg a place of worship, and a name only.

In flat areas where continuous dykes hide the greater part of urban areas, the taller buildings may be similarly used to represent the locations of both villages and towns.

D4

B-370.7 **On medium scale charts,** ie, about 1:500 000 in this context, the location of villages (near the coast) and small towns should be shown by a black circle 1mm in diameter or by a black rectangle and a name.

D3

B-370.8 **Refuges,** usually located in Antarctica, should be charted by an appropriate building symbol with the **international abbreviation** 'Ref' adjacent.

Comment: As agreed during CSPCWG2 (item 8.3): 'An additional entry should be drafted for refuge buildings under M-4 B-370.8'

B-371 STREET AND ROAD NAMES

Street and road names are not normally of much value on charts but, exceptionally, may be shown on large scale harbour plans if required. Such names should be in sans-serif capital letters and placed, where possible, within the lines marking the road.

D7

B-372 PUBLIC BUILDINGS

For harbour offices (Harbour Master, Customs, Quarantine, Health Office, Hospital), see B-325.
For places of worship, see B-373.
For railway stations, see B-362.2.
For representation of conspicuous buildings, see B-340.3.
Public buildings, except where they could be useful landmarks for navigation, should generally be charted only on large scale harbour plans with a name or descriptive legend.

Deleted: with the possible exception of Post Office and Hospitals, are charted mainly as visual features or points of reference ashore, not for their interest for particular functions. Ee

B-372.1 **Post offices** were formerly charted as:

F63

It is no longer useful to chart post offices.

Deleted: they

Deleted: should

Deleted: be shown, where appropriate, by the symbol

B-373 PLACES OF WORKSHIP AND ASSOCIATED FEATURES

Places of workship often form significant landmarks; their size and structure incorporating towers, spires, cupolas, etc often make them conspicuous. These buildings, when known to be prominent or conspicuous, should be charted up to several miles inland, with sufficient information to enable them to be easily identified. When scale permits, the building outline should be shown with attention being drawn to any significant features. For representation of conspicuous buildings, see B-340.3. For use of pictorial sketches, see B-390.1.

Where scale or the nature of the chart is such that symbols would be more appropriate, those in the following paragraphs should be used. To indicate the conspicuous nature of a place of workship, the general rules given in B-340 should be followed.

Where a place of workship is unlikely to be a landmark itself but is the focus of a settlement, the appropriate symbol and place name may be used to represent such a settlement, see B-370.6.

B-373.1 **A church** should normally be represented by the symbol of a Maltese cross:

E10.1

On large scale charts, the outline of the building may be shown. A cross should be placed within the outline, eg:

E10.1

An indication of whether the church has a spire, twin spires, tower, cupola, etc may be given by means of an appropriate abbreviation or descriptive legend, see B-373.2, or by a small pictorial sketch replacing the symbol or placed near to it, see B-390.1.

The name of the church should be given in the national language where it may be useful in relating the symbol to a reference in nautical publications, eg Sailing Directions.

B-373.2 **Churches: related abbreviations:**

A church with a tower must be indicated by the **international abbreviation** 'Tr'.

E10.2

A church with a spire, or steeple, with pointed apex must be indicated by the **international abbreviation** 'Sp'.

E10.3

A church with a cupola, ie a rounded or dome-like roof may be indicated by the legend 'Dome', or equivalent, or the abbreviation 'Cup', or equivalent.

E10.4

The **international abbreviation** 'Ch' may be used as an abbreviation for 'church' if it is not possible to use the Maltese cross symbol.

Deleted: Buildings constructed as pP

Deleted: although a simple cross, with or without a central position circle, is also acceptable.

Deleted: symbol is to be placed in the position of the highest point of the church

Deleted: the outline of the building should also be shown if scale permits

Deleted: , or by an appropriate abbreviation or descriptive legend, see B-373.2

Deleted: If a sketch is out-of-position it should be shown in colour, preferably magenta,

Deleted: on large scale charts and on other

Deleted: If a sketch is out-of-position it should be shown in colour, preferably magenta.

Deleted: , or equivalent

Deleted: , or equivalent

Deleted: , or equivalent,

E10.1

Chapels are not usually prominent buildings and therefore not usually charted. If such features are sufficiently prominent to justify charting, the symbol E 10.1 may be used, with the legend 'Chapel', or equivalent, if required.

B-373.3 **A temple** (including pagoda, shrine, marabout, joss house) must be represented by the following symbol, placed if possible in the position of the highest point of the building.

E13-16

An appropriate name or description may be added if considered useful.

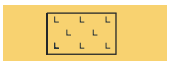
The former symbol 卍 used to distinguish a Buddhist temple or shrine should no longer be used

B-373.4 **A mosque** and its associated **minaret(s)** must normally be represented by the following symbol, the position circle corresponding to the position of the most prominent minaret, where known. Where scale permits, the building outline should be shown with the minaret(s) symbols in their appropriate positions.

E17

B-373.5 **Not currently used.**

B-373.6 **Cemeteries** should only be charted when prominent or conspicuous. A cemetery must normally be represented:



E19

or, exceptionally, by the word 'Cemetery', or equivalent.

B-374 CHIMNEYS, TOWERS, WINDMILLS, WIND TURBINES, FLAGSTAFFS

The following structures are possible landmarks and may be charted, depending on height and the topographic relief, up to several miles inland. The colour may be given, preferably by abbreviations beneath the symbol, as for an aid to navigation.

The structure should be represented by symbols where possible; where space does not allow the use of a symbol, a position circle with appropriate abbreviation or other legend may be used. Where symbols are used, the true position is the centre of the base of the symbol, see B-125.3. Some of the taller structures may have air obstruction lights: see B-476.

B-374.1 **A chimney (stack)** must normally be represented by the symbol:

E22

Exceptionally, it may be necessary to chart a chimney as the highest point of a building: in this case, and when space does not permit the symbol to be used, a position circle and **international**

Deleted: shinto

Deleted: or

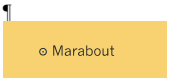
Deleted: a rectangle with two diagonal lines extending slightly beyond the rectangle,

Deleted: If it is necessary to distinguish

Deleted: , the following symbol shall

Comment: WG8 agreed to make this symbol obsolescent. There is no ENC equivalent.

Deleted: **A marabout** (shrine marking the burial place of a Moslem holy man, mainly confined to N Africa) should be represented by a position circle and appropriate legend, where likely to be visible from seaward.¶ ¶



E18¶

Deleted: described below

Deleted: generally to be regarded as

Deleted: pictorial

Deleted: pictorial

Deleted: short

abbreviation 'Chy' must be used.

E22

Comment: DID: add legend Chy against dot/circle

Flare stacks, normally showing flames and located at refineries, must normally be represented by the symbol.

E23

No light flare must be used. For offshore flare stacks, see B-445.2c.

Deleted: (patch)

A position circle and the **international abbreviation** 'Fla' must be used where space does not permit the symbol to be used.

Comment: As suggested by AU.

B-374.2 **A water tower** must normally be represented by the symbol:

E21

A position circle and the legend 'Water Tr', or equivalent, must be used where space does not permit the symbol to be used.

B-374.3 **A tower in general** must normally be represented by the symbol:

E20

A position circle and the **international abbreviation** 'Tr' must be used where space does not permit the symbol to be used.

If it will be of use in identification, the name of the tower in the national language should be placed adjacent to the symbol or position circle, where scale permits.

Deleted: should be given

For towers (beacon towers, cairns, disused lighthouses) which were specially erected as aids to navigation, see B-455 to B-457.
For refuge towers or beacons in shallow water, see B-456.4.
For church towers, see B-373.
For towers associated with signal stations, harbour control, pilot's lookouts, etc, see B-490.
For latticed towers associated with radio communications, see B-375.
For pillars representing survey control points, see B-304.

B-374.4 **A monument** (including a column, pillar, obelisk, Calvary cross or statue) must normally be represented by the symbol:

E24

A position circle and the **international abbreviation** 'Mon' must be used where space does not permit the symbol to be used.

If it will be of use in identification, the name of the monument in the national language, or its description (eg: 'Statue', 'Cross') should be placed adjacent to the symbol or position circle, where scale permits.

B-374.5 **A windmill** must normally be represented by the symbol:

E25.1

If a windmill has had its sails removed, it should be distinguished by the **international abbreviation** 'Ru':

E25.2

B-374.6 **Wind turbines** are generally tall, multi-bladed structures, usually with two or three blades, often visible over long distances. Their purpose is to generate electricity for large communities, or to feed a national power grid. They are often in groups (known as wind farms) and may be sited off-shore (see B-445.8-9). Individual wind turbines must be shown by the symbol:

E 26.1

Small wind turbines, usually associated with a small isolated community for which they provide power, were formerly charted by the obsolescent windmotor symbol  . If such features are sufficiently prominent to justify charting, the symbol E 26.1 may be used.

On-shore wind farms. On-shore wind turbines are charted as landmarks where visible from the sea. It is therefore preferable to chart the individual turbines in their actual positions. However, where scale or available information does not permit this, an on-shore wind farm may be shown by the centred wind farm symbol, within a black limit if scale and source information allows:

E 26.2

For off-shore wind farms, see B-445.9.

B-374.7 **A flagstaff** or flagpole must normally be represented by the symbol:

E27

A position circle and the **international abbreviation** 'FS' must be used where space does not permit the symbol to be used.

For signal stations, see B-494.

B-375 TELECOMMUNICATION MASTS AND TOWERS

Telecommunication (eg radio, television, telephone) masts and towers are likely to be visible over long distances, especially at night as they usually carry air obstruction lights: see B-476.2. They should be charted as landmarks, even when well inland.

For pylons carrying power transmission lines, see B-382.

Deleted: See B-306 for boundary marks.¶

Comment: IHO CL 14/2005 refers

Comment: DID: please add FLT background

Deleted:

Deleted:

Comment: Noted for B-445.9 and INT1

Deleted: dashed

Comment: DID: please add FLT to both graphics and amend surrounding lineon LH symbol to a fine continuous line (as cemetery)

Deleted: Where the pictorial symbol is inappropriate, a position circle should be used with the **abbreviation** 'FS'., or equivalent.¶

Deleted: RADIO

Deleted: generally

Deleted: They will usually carry air obstruction lights: see B-476. Masts and towers must be represented by pictorial symbols where possible; where space precludes the use of a symbol, a position circle with appropriate abbreviation or legend shall be used. Where pictorial symbols are used the true position shall be the centre of the base of the symbol.¶

B-375.1 **A telecommunication mast** is a tall, thin structure held vertical by guylines. It must normally be represented by the symbol:

E28

A position circle and the appropriate legend 'Radio Mast', 'TV Mast', or simply 'Mast' or equivalent, must be used where space does not permit the symbol to be used.

B-375.2 **A telecommunication tower** is a latticed structure which is self-supporting. It must normally be represented:

E29

A position circle and the appropriate legend 'Radio Tr' or 'TV Tr', or equivalent, must be used where space does not permit the symbol to be used.

B-375.3 For **radar structures**, see B-487.3.

B-375.4 **A dish aerial** must normally be represented by the symbol:

E31

A position circle and the legend 'Dish aerial', or equivalent, must be used where space does not permit the symbol to be used.

B-375.5 **Any structure** which is also a functioning radio or radar aid to marine navigation must have a magenta 'radio circle' (see B-480) added, centred on the base of the symbol or on the position circle, as appropriate.

B-376 CYLINDRICAL TANKS

Isolated tanks or gasholders may be good landmarks and should be represented true to scale where possible. Groups of tanks, eg at a refinery, may be useful for general identification of position but cannot usually be used for precise position-fixing because of uncertainty of the location of individual tanks. Legends to indicate what the tanks contain are not needed.

A water tank (cylindrical or otherwise) on a tower must be shown as a water tower; see B-374.2.

B-376.1 **Individual tanks** must be drawn true to scale using the symbol:

E32

(to enable a tangent from one side to be used in position-fixing). When the symbol is 2mm or less in diameter, it must be shown as solid black.

B-376.2 **Large groups of tanks** may be represented by the **international legend** 'Tanks'.

B-376.3 **Silos** should be shown either by an open outline, true to scale, with the legend 'Silo', or equivalent, or by a position circle and legend.

Deleted: radio or televis

Deleted: ion

Deleted: radio or television

Comment: Can these features really be distinguished? Should we just use E28 for generic 'communication structures'?

Deleted: . or, exceptionally, by a position circle and descriptive term.¶

Deleted: aid shall be represented primarily as in 480 "Radio Fixing Stations", but the pictorial symbols may be used in addition

Deleted: whether gas or oil is held

Deleted: generally

Comment: DID: please replace with latest version

Deleted: Cylindrical silos

E33

Many silos are conspicuous, see B-340.3.

B-377 PIPELINES ON LAND

A pipeline on land should not normally be charted but may be shown in black, if required, eg: if elevated; as a continuation of a major submarine supply pipeline (see B-444). For a pipe over navigable water (see B-383).

D29

Buried pipes on land should not be charted.

For sewer pipes, see B-444.2.

B-378 RUINED BUILDINGS AND STRUCTURES

The outlines of buildings and other structures on land in a prominent position or close to the coast should be shown by dashed lines when in ruins. The **international abbreviation** 'Ru' should be added to distinguish ruins from features under construction. When added to another legend or name, the abbreviation should be in brackets: '(ru)'.

B-378.1 **The high water outline** of ruined piers, wharves and other structures on or near the coastline must be shown in a continuous line, with sections submerged at HW in dashed lines. In all cases, the **international abbreviation** 'Ru' must be added, eg:

F33

B-378.2 **A ruined landmark,** must normally be shown by its symbol, with the **international abbreviation** 'Ru'.

D8

E25.2

If, for reasons of space, the symbol is replaced by a position circle and legend, or the structure is named, the abbreviation should be placed in brackets adjacent to the legend or name: '(ru)'.

B-379 FORTIFIED STRUCTURES

Some coastlines have prominent defensive structures, often disused, decayed, or used for non-defence purposes. Such structures range from major castles and forts to minor lookout posts and may be the main distinctive features of headlands or stretches of coastline. Any such features that are likely to be visible from seaward should be charted.

Deleted: s

Deleted: necessary

Deleted: , in association with pipes over navigable waterways (see B-383).

Deleted: generally

Deleted: (

Deleted:)

Deleted: parts

Deleted: eg for the information of the mariner

Deleted: such as a tower, shall generally

Deleted: National regulations permitting, an

B-379.1 **On large scale charts, fortified structures** should be represented by true-to-scale outlines, generalised where necessary. The symbols used must be the normal symbols for individual buildings, with embankment or steep coast symbols (C3) if appropriate. Detached walls must be represented by bold lines. Where appropriate, the structure should be named.

E34.1

B-379.2 **On smaller scale charts,** where a true-to-scale outline would not allow a structure to be charted adequately, the following symbols should be used:

Major fortified structures such as castles, forts and blockhouses of considerable size and prominence must, if required, be represented by the following symbol. Any associated structures, such as towers or flagstaffs, should be shown using the appropriate legend or abbreviation: see B-374.

E34.2

Minor fortified structures, such as small forts, batteries or 'pillboxes', must, if required to be charted, be represented by the symbol:

E34.3

B-380 OVERHEAD OBSTRUCTIONS AND CLEARANCES: BRIDGES, CABLES, PIPES

On charts which include vertical clearances under overhead obstructions, a statement of the height datum from which the vertical clearance is measured must always be given in the title block, see B-241.6.

B-380.1 **Vertical clearance:** IHO Technical Resolution 3/1919 (as amended 2008), paragraph 2b, states that:

> It is resolved that Highest Astronomical Tide (HAT) be adopted as the datum for vertical clearances where tides have an appreciable effect on the water level. Alternatively the differences between HAT and national datums for vertical clearances may be specified on nautical documents. If high water levels in a specific area frequently deviate from HAT, the datum for vertical clearances may be adapted accordingly. It is further resolved that a HW datum be used for vertical clearances in non-tidal waters.

Vertical clearances must be rounded **down** to the nearest whole metre (unless under 10m, when metres and decimetres may be quoted, if the measurements are considered to be sufficiently accurate). The principle aim is to chart the predicted minimum safe clearance.

Deleted: hachures to indicate steep

Comment: On reflection, it seems unnecessary to mention ruined buildings here; they are dealt with elsewhere.

Deleted: or two parallel lines.

Deleted: possible

Deleted: Buildings which are clearly in ruins must be shown in dashed lines with the **international abbreviation** 'Ru' or '(ru)' (see B-378).

Comment: DID: replace with similar to ES version, without legend.

Deleted: in the following paragraphs

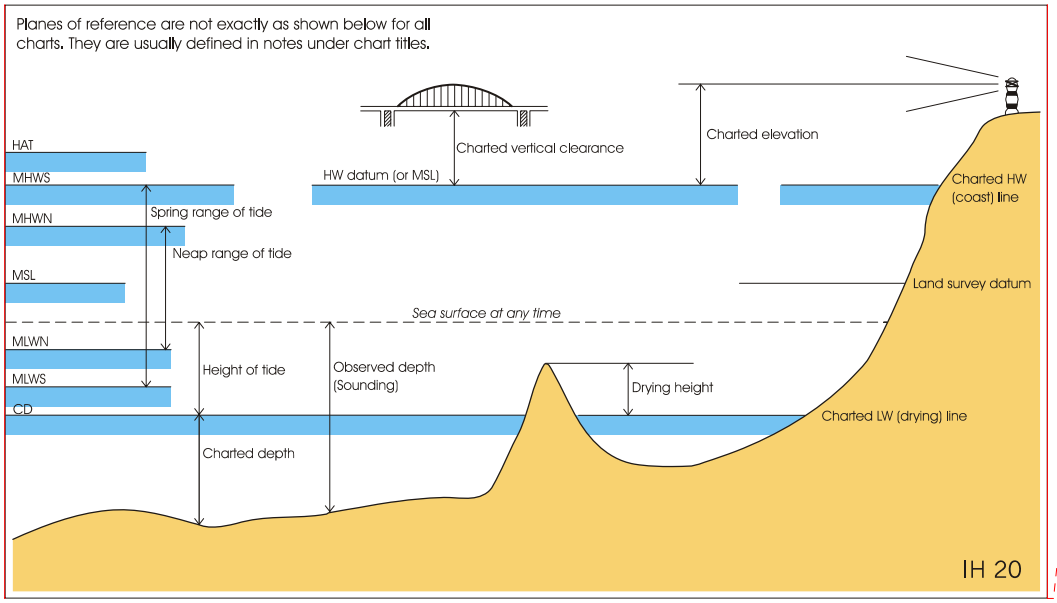
Deleted: **AND OVERHEAD OBSTRUCTIONS : CLEARANCES**

Deleted: A statement of the vertical clearance between (high) water level and any fixed overhead obstruction is always to be given on large scale charts intended for navigation under the obstruction or for detailed passage planning.

Deleted: It shall be given on the chart

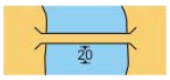
Deleted: m and dm

Deleted: In areas where the tide is not appreciable it shall be Mean Sea Level (MSL). Necessary variations of significance to the mariner shall be stated on the chart.



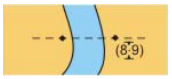
Comment: DID: replace by same graphic as B-302.2, updated as in latest printing of 5011. Also amend legend to left of bridge to 'Physical vertical clearance (black)' and change the legend to the right to magenta text: 'Safe vertical…'. Asked for a marked up copy if necessary. (Following discussions at

B-380.2 **The figure** denoting the vertical clearance must be charted either alongside the obstruction:



D20

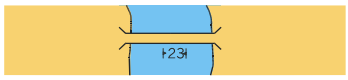
or on the adjacent land:



D20

As far as possible, the charted physical clearance above the stated height datum should be the minimum allowing for meteorological changes such as heat expansion, ice weight and any other possible physical variations. For safe vertical clearance to avoid risk of electrical discharge under power cables, see B-382.1

B-380.3 **Horizontal clearance,** if required to be charted, must be rounded down to the nearest whole metre:



D21

B-381 BRIDGES

Charts must always make it clear whether a bridge is fixed (by indicating the vertical clearance, D20) or opening (by a legend and/or symbol, D23). This applies over navigable water at the scale of the chart and on smaller scales for planning purposes. On very large scales, the outline of the bridge should be shown true to scale. Bridges names may be charted, if known and useful. The purpose of a bridge may be indicated by, eg: a railway crossing it, a road leading to and from it.

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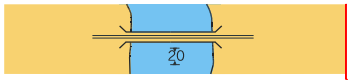
For bridge signals and lights, see B-495.3.

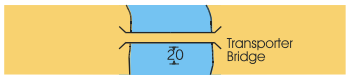
B-381.1 **Fixed bridges.** The type of bridge should not normally be stated, unless sufficiently distinctive to be a landmark, eg a suspension bridge, a viaduct or aqueduct with numerous arches. The general symbol for a bridge or a viaduct is two parallel lines with the ends turned outwards:



D22

Where the chart is sufficiently large scale to be used for navigation, the vertical clearance must be given (see B-380). Vertical clearance must normally be given between high water (see B-380.1-2) and the lowest part of the bridge structure, to give the minimum clearance. Exceptionally, when the navigation channel is through an arch, clearance may be given to the highest part of the arch above the navigation channel, or separate clearances may be given for each navigation channel under a bridge. For portrayal in profile, see B-381.5.

B-381.2 **Transporter bridges** have towers on each side of the waterway connected by a girder system on which a carriage runs. They are generally conspicuous and should be described on the chart as 'Transporter', or equivalent, but using the symbol for a fixed bridge. The vertical clearance must be given under the lowest part of the fixed structure (and above any navigation channels, if different).



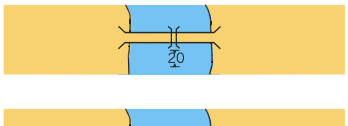
D24

For aerial cableways, see B-382.3

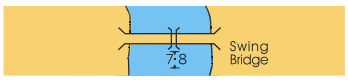
B-381.3 **Opening bridges** are generally of two types:

- swing bridges, which pivot on a pillar either in mid-channel or at one side of the channel;
- lifting bridges (which may also be described as bascule or drawbridges).

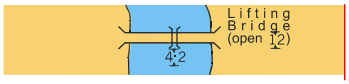
Opening bridges must generally be represented in the closed (to water traffic) position. The symbol must be the same as for a fixed bridge except that the position of the opening part should if possible be indicated by two curved lines. The fact that a bridge opens may be shown by the symbol (D23) and/or a legend such as 'swing', 'lifting', 'opening', or equivalent.



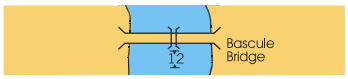
D23.1



D23.2



D23.3



D23.4

Deleted: and B-495.4

Deleted: may, where important, be named

Deleted: s which are often conspicuous; for the same reason viaducts may also be described as such.

Comment: DID: replace by current D22 (no road or railway).

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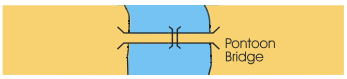
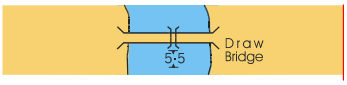
Deleted: between high water and

Deleted: Where important, bridges be named; in all cases where over navigable water (except on very small scales), a legend such as 'swing', 'lifting', 'opening', or equivalent, must be shown. Vertical clearance need not be shown except where there is a headway, limitation even when the bridge is open, in which case a legend such as '20m when open' should be used.¶

Comment: DID: improve text spacing to match others



D23.5



D23.6

Comment: DID: improve text spacing to match others

Vertical clearance may usefully be shown if there is passage for smaller vessels under the bridge when closed. If there is a vertical limitation even when the bridge is open, a legend such as '(open 20m)' should be used. If required, a profile view of the bridge may show the open position, see B-381.5 and B-390.

Comment: Prompted by comment from RU.

B-381.4 **Submersible bridges** are lowered below the water surface so that vessels can pass over them. The symbol should be as for a fixed bridge with a note alongside, eg 'Submersible bridge, 3.5m below CD when lowered', or equivalent.

Comment: Does anybody know of any examples of these? We believe this is not the same as the submerged tunnels we discussed at WG8 (which we agreed did not need to be symbolized at present).

B-381.5 **Bridge supports** may be an obstruction to navigation and should be charted (if the positions are known). It is difficult to be prescriptive about how they should be charted, as circumstances may vary considerably. Some options (which may be combined) are:

Comment: Sub sections B-381.5-6 CL14/10 refers, approved by CL52/10.

- Where bridge supports carry navigation lights (and/or daymarks), chart as small light stars (and/or beacons) with appropriate descriptions. Add a legend, eg 'TOWER', 'Pylon', as appropriate to distinguish between lights on the bridge superstructure and on bridge supports (examples A to C);
- For suspension bridges, or others for which the supports extend above the bridge, a position circle symbol with legend should be shown, eg 'TOWER', 'Pylon' (example B) or, if large enough scale, the tower can be shown to scale (examples B and F);
- Where bridge supports are wider than the actual bridge, show to scale in plan outline (usually continuing the bridge sides through the widening, unless it is known that the bridge itself widens at those points) (example C and D);
- The supports may also be shown as lines across the bridge, even if they do not protrude beyond the width of the bridge or above the bridge (examples E to G);
- Insert a large-scale inset plan to enable the above actions to be taken (example F and G);
- Add a profile view diagram (example H and I):

B-381.6 **Depth (including obstructions) under bridges.** The physical presence of a bridge can affect the flow of water and hence the location of shoals and deeper channels in its vicinity, including underneath it. Normal sounding selection principles apply in the waters either side of a bridge. However, it may be appropriate to select a sounding (or obstruction) which is under the bridge (either because it is a controlling depth or because depth varies significantly across the width of a bridge span). In such cases it should be shown as a 'sounding out of position', in accordance with the guidance at B-412.2. I11 (using a pointer) is preferred to I12, as the exact position under the span may be important (Example A).

Deleted: S-4

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Alternatively, soundings may be shown in their true positions, with the bridge and land tint retained over the top (Example B).

Depth contours should normally be broken at the bridge as it will usually be obvious where the contours go. On very large scale charts, where the bridge is shown true to scale and it clarifies the picture, the contours may be continued through the bridge.

[Note: Bridge graphics omitted from Word document to avoid too big a file size]

Comment: DID: Need to amend the clearance at Forth Bridge to black.

B-382 OVERHEAD CABLES

All cables over navigable water must be charted. A vertical clearance under the lowest part of the cable should be given, in accordance with B-380, unless a lesser safe clearance is given (see B-382.1). The vertical clearance over any charted shipping channel may also be shown, if different from the clearance at the lowest point of the cable.

B-382.1 **Power transmission lines** must be represented, where over or close to navigable waters, by a dashed line with black dots of about 0,6mm in diameter at intervals of about 10mm (or closer where lines cross narrow channels), and with an electric flash midway between each pair of dots.

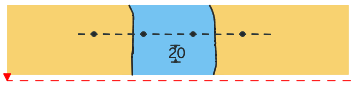
The actual position of **pylons** supporting the cables may be indicated by position circles and the **international abbreviation** 'Pyl', where likely to be useful for position-fixing; normally, only the pylons immediately adjacent to a navigable channel should be shown individually.

In the case of cables carrying very high voltages, an additional clearance of from 2 to 5 metres may be needed to avoid an electrical discharge. If known, the authorised safe clearance (known in the UK as the Safe Vertical Clearance), which is the physical clearance minus a safety margin, must be stated on the chart in magenta:

D26

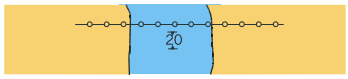
Note: this symbol is only used to apply a safety margin from electrical discharge below the minimum expected physical clearance (ie allowing for variations of the cable's catenary (curve) due to meteorological conditions, see B-380.2).

B-382.2 **Telephones lines** passing over navigable waters must be charted by the same symbol as power lines but without the electric flashes:



D27

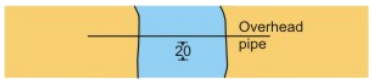
B-382.3 **An overhead transporter**, eg elevated conveyor belt, aerial cableway (other than a transporter bridge, see B-381.2) must be charted over any navigable channel or, as a landmark where likely to be visible from seaward, using the symbol:



D25

B-383 OVERHEAD PIPES

Overhead pipes must be represented by a firm black line with explanatory legend. The vertical clearance must be given under the lowest part of the fixed structure (and above any shipping channels, if different), see B-380.



D28

Deleted: , with central dot

Deleted: or equivalent,

Deleted: The vertical clearance must be quoted for the distance between high water and the lowest part of the cable where it crosses a navigable channel . **D27**but in

Deleted: Radar echoes may be received from overhead cables crossing a channel; in general, warnings of such effects should be confined to Sailing Directions¶ ¶

Deleted: . . The physical clearance between high water and the lowest part of the cable must be charted; see B-380.2.¶ ¶

Deleted: .¶ ¶ . . The recommended representation is:

Deleted: The vertical clearance between high water and the lowest part of the pipe must be stated:

B-390 PICTORIAL REPRESENTATIONS

B-390.1 **Pictorial sketches or photographs** of landmarks, prominent buildings, beacons and lighthouses may be shown on charts if useful to aid identification. Where sited in true position, the sketch should be in black, with a small position circle in the base, eg:

E3.1

If a sketch is out-of-position it should be shown in magenta, or may be shown in another colour, except black. The latitude and longitude of the landmark and any details, such as its principal colour(s), name, height should be given under the sketch, to aid identification and location on the chart, eg:

E3.2

Suitable photographs (up to date, good quality, eg sharp outline, strong contrast) may be used as an alternative to sketches.

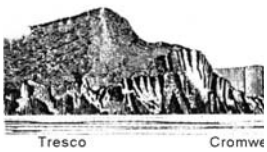
B-390.2 **Panoramic views.** Hand-drawn sketches of coastal views and islands are no longer shown on modern charts. They have generally been replaced by photographs, more appropriately inserted in nautical publications, such as Sailing Directions.

Deleted: VIEWS AND SKETCHES, VIEWPOINTS

Deleted: colour, preferably

Deleted: See . . B-340.7 . . Sketchs of landmarks¶
. . . . 373.1 . . Church symbols¶
. . . . 456.5 . . Beacons¶
. . . . 457.3 . . Lighthouses¶

Deleted: **A viewpoint** should be shown by a legend, in the language of the country issuing the chart, placed at the position from which the view was takeneg See View B.¶
¶
. . The latitude and longitude of the viewpoint may be given under the view.¶
¶



View B
(at 49

Comment: As discussed at WG8.

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See B-340.3 for style of legends.

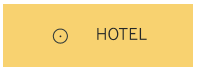
Where there is no space for pictorial symbols, including cases where the symbols would have to break the coastline, position circles (with central dots) (see B-305.1) and legends should be used (see B-340.3).

Page Break

B-340.3 **Legends** for all landmarks are not normally necessary when a pictorial symbol is used, but if required should preferably be in bold sans serif lettering. Lettering defining a conspicuous object, eg "Spire", should when used be in capital letters. Lettering associated with other landmarks should not be in capitals apart from initial letters. Abbreviations for "conspicuous" and its equivalents, eg "conspic", "rem" (French), "auff" (German), "Kenb" (Dutch), shall not normally be used.

B-340.4 **A list of conspicuous objects** on charts is not recommended because it would increase correctional work and duplicate information in the Sailing Directions.

B-340.5 **Position circles** for conspicuous objects for which there is no pictorial symbol shall be of not less than 2mm in diameter, with a dot in the centre.



IE 2

Smaller circles may be used for other landmarks (see B-305.1).

IE 1

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Where slopes are steep, contours should not be merged but intermediate ones may be omitted to leave a space of about 0,3mm between those shown. Index contours, if used, should not be omitted.

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Contours should reflect the nature of the topography, eg they should not be rounded or smoothed (by generalisation) when they should really be angular. They

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(the distinction between these and form lines being that the contours may be labelled with the approximate heights)