HSSC7-05.6D rev1

7th Meeting of the Hydrographic Services and Standards Committee
10-13 November 2015, Busan, Republic of Korea

Changes to S-4 for Edition 4.6.0

Paper prepared for HSSC7, in accordance with NCWG1 Action 11

Revisions considered in detail and agreed by CSPCWG/NCWG members, to be included in the next revised of S-4 (Edition 4.6.0) planned for publication in 2016.

Note: in this paper, black is reserved for existing S-4 specifications, red for amendments. Blue text has been used for introductory/explanatory comments for each item. The order of subjects is as they have been dealt with chronologically by CSPCWG/NCWG and has no other significance.

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1. Light Vessels. The following significant revision was agreed under CSPCWG Letters 06 & 11/2013 and confirmed at NCWG1 (where the original reasons submitted by IALA via IHO CL44/1993 to combine all major floating lights into one superbuoy symbol were rejected as no longer relevant). Considering:
   - the great difference in visual (daytime) appearance between a Light Vessel and a 'LANBY',
   - that LANBYs probably no longer exist,
   - that Light Vessels are distinctive features in S-57 and S-101,

   the CSPCWG decided, for the benefit of the chart user and for product consistency, a simplified version of the former light vessel symbol should be re-introduced. The new symbol excludes bow and stern shading and the light star on the mast (which may be confused with an IALA special 'X' topmark). The consequential revisions to specifications are shown in red, as follows:

B-474 MAJOR FLOATING LIGHTS

B-474.1 Major floating lights. (For an explanation of the term 'major' see B-470.2.) ~~are generally classed as those with a nominal range in excess of 10 nautical miles. Special circumstances, eg an isolated location, may mean that a floating light of lower range is given this status~~. The structure on which the light is fixed will normally be a light vessel, (also known as a lightship or major light float) or a superbuoy but may be mounted on other buoy types with high focal planes. Note: A LANBY (Large Automatic Navigational Buoy) which is a type of superbuoy on which major lights have been mounted, may no longer exist, see B-460.4.

B-474.2 The symbol for a major floating light must be either,

for a light vessel:

Q32 (new)

for a superbuoy:

Q26

The colour of the structure does not normally indicate on which side it should be passed and therefore should not normally be charted (this is consistent with the omission of colour from major shore light structures on paper charts) but may be included, if relevant. Details of the structure may be found in List of Lights and Fog Signals (LL).

Guidance on associated legends and symbols are found in the relevant sections of S-4; for particular guidance on light descriptions associated with major floating lights, see B-466.4.

Consequential amendments to S-4 and INT1:

B-466.1 a. **Light descriptions** on floating marks, including the order of the various elements, should be the same as those used for fixed marks (see B-471). Height and range are not generally charted for buoys, ~~except~~ but should be for light vessels and superbuoys (see B-474 ~~B-466.4~~). The text should be sloping.

B-466.4 (first sentence of second paragraph)
The period is normally the final part of the light-description for buoys, ~~except in the case of~~ but not for light vessels and superbuoys ~~(see B-460.4b and B-462.9)~~ where height and/or range may be added, see B-474.

INT1:

1. Add new light vessel symbol at Q32, and change sub-heading to Light Vessels and Minor light floats
2. Retire P6.

Note: NCWG Chair has taken an action to suggest removal of the light star from the mast of the light vessel symbol as displayed on ECDIS.

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2. Glaciers. The following minor revision was agreed under final CSPCWG Letter 12/2014. This is to allow topographic contours to be continued over glaciers, preferably as blue lines, but allows other colours provided they are dashed to help distinguish the glacier from other areas and emphasise the unstable nature of the topography. Replace B-353.8 as follows:

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 ~~should~~ must be delimited by a fine ~~blue~~ dashed line, ~~but may be a fine black dashed line~~ which should be blue but may be black. Land tint must be omitted over the glacier. Topographic contours should be either omitted or changed to blue lines, but may be retained as black (or other colour) in which case they should be dashed (C12). 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 the ECDIS infill symbol for glaciers) may be added if contours are not shown.

Note re Glacier graphics: It is impossible to show all possible combinations of 'optional' parts of the symbol in graphics in S-4; this will be for individual HOs to decide their own practice and show accordingly in their versions of INT1. INT1subWG will consider how to show in the 'official' INT1s. In S-4, the optional word 'glacier' will be removed from the right hand graphic.

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3. Dredged areas. The following significant revision of S-4 was agreed under CSPCWG Letters 09 and 13/2014. Following extensive research, including correspondence within the CSPCWG and with port authorities, the CSPCWG decided that some clarification and simplification of the symbols and associated guidance for depicting dredged areas is required. While there is no

evidence that the mariner is confused by the present different symbols and legends used relating to dredged and maintained areas, there is evidence that cartographers and port authorities are, to the extent that some areas depicted on charts are conveying misleading information to the mariner. The difference between INT1 I21 and I23 is not clear and the meeting decided it would be better to remove I23. If the depth in an area is maintained, then I21 should be used, with an appropriate legend and / or note if necessary to clarify the maintenance regime. If necessary, a date of the latest survey should be added (I22).

Extract from S-4 B-414, with amendments in red:

B-414 DREDGED AREAS

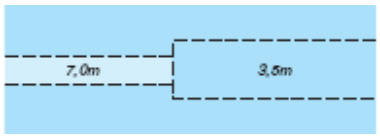
Dredged areas are channels and berths where the stated minimum depth has been achieved, and may be maintained, by human influence.

Limits of dredged areas must be indicated by medium dashed lines. The ends may be left open where leading into deeper water.

I20

~~Dredged channels and areas must be delimited by dashed lines and the dredged~~

The minimum depth must normally be given in metres and decimetres (precision depending on the accuracy of the ~~control~~ survey), ~~always~~ which may be followed by an indication of the units, for example '*m*', especially where it may not be clear to what the number refers, for example when it is out of position: '*Outer Harbour (14,1m)*'. Decimal zeros may be omitted. The depth should normally be inserted within the area; however, for the exceptional use of tables, see B-414.4. Shallow water tints should be added in accordance with the charted depth, see B-411.6.



I21

If it is necessary to clarify the maintenance regime (if any), labels such as 'Dredged to', 'Maintained depth', and/or a note may be included, normally in consultation with the local authority. For example, where it is known that such areas are subject to siltation between dredging:

DREDGED AREA[S]

The depth[s] shown in the dredged area[s] [is/are] generally maintained, but silting is liable to occur. For the latest information, consult the [Harbour Master/…Port Authority/Pilot].

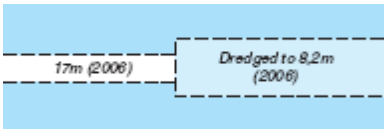
or

[CHANNEL/BERTH] DEPTHS

Depths in the [marked/dredged channels and/or berthing areas] may be less than charted. For the latest information, consult the [Harbour Master/…Port Authority/Pilot].

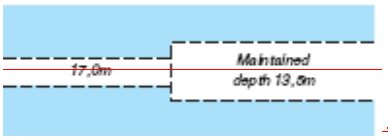
~~Dredged~~ **Turning (or manoeuvring) basins** should be charted in the same way as ~~other~~ dredged areas, and may be labelled accordingly.

B-414.1 Areas not regularly maintained. Where it is not known that a dredged area is maintained by regular ~~control~~ surveys and any necessary consequential dredging (or if it is definitely known that there is no regular maintenance), the legend on the largest scale chart must give both the depth and year of the latest ~~control~~ known post-dredging check survey.



I22

B-414.2 Not currently used. ~~Areas regularly maintained.~~ ~~Where it is known that a dredged area will be maintained by regular control surveys and dredging, the date must be omitted. Where space permits, insert '*Maintained depth...m*'.~~



~~I23~~

~~Where it is known that such areas are subject to siltation between dredgings, a cautionary note may be added.~~

B-414.3 Not currently used. ~~Limits of dredged minimum depth areas~~ ~~must be indicated by medium dashed lines. The ends should be left open where leading into deeper water.~~

~~I20~~

B-414.4 Tables of dredged depths. In general, the use of tables to list ~~dredged~~ minimum depths within dredged areas should be avoided, except:

- in very complex cases, where areas are too small to show legends within the limits;
- in areas where very frequent changes occur, to facilitate maintenance by Notice to Mariners.

B-414.5 and 6 unchanged.

INT1:

1. Section I subheading above I20 change to 'Depths in channels and areas'.
2. I21 (possibly remove 'm' for metres?). Amend column 3 description to: 'Dredged channel or area with minimum depth regularly maintained'.
3. I22 (remove legend 'Dredged to', possibly remove 'm' for metres?). Amend column 3 description to 'Dredged channel or area with minimum depth not regularly maintained and year of latest survey'.

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4. Maximum authorized draught. The following significant revisions were agreed under CSPCWG Letters 09 & 13/2014 and NCWG1 Report 8.3. Further clarification was included under NCWG1 Action 17; and resultant NCWG Letters 02 and 08/2015. The long-standing use of maximum authorized draught depths between arrowheads, e.g. <*7,3m* > on recommended tracks (B-434.3) was widened to include any other cases where a maximum authorized draught applied, e.g. in fairways (B-434.5) and fish havens (B447.5), during the review of S-4 Part B. The CSPCWG considers that how this is used on charts should be clarified in B-432.4, including extending its use into other regulated areas and explaining how the colour used should be selected. It should be noted that maximum authorized draughts can only be applied in limited areas where there is

no appreciable tide and should not replace actual depth information. The text of B-432.4 will be changed as follows (changes in red):

B-432.4 Maximum draught and minimum depth

a. In areas where the tidal range is not appreciable, it may be useful to state the **maximum draught** of vessels authorized by a regulatory authority to navigate a recommended track (see B-434.3), a fairway (see B-434.5b) or within any other regulated area. The maximum authorized draught must be charted between arrowheads, for example <*18.5m*> . The colour should be consistent with the feature to which it relates, for example magenta in a routeing measure such as a fairway (see B-434.5) and black on a recommended track (see B-434.3) or in a fish haven (see B-447.5). The size of the legend is at the discretion of the cartographer, but it should stand out clearly from other detail in the area.

b. All other depths quoted on tracks, in deep water routes and dredged areas or channels must indicate the **minimum depth** of water at chart datum (and a survey year date if not maintained), for example *18.5m* , as decided by a port or hydrographic authority. It must never be shown between arrowheads. As in (a) above, the colour should be consistent with the feature to which it relates. In dredged areas and channels (where actual depths are not shown) it should be black, see B-414; for depths within a Deep Water route, see B-435.3f. No statements of minimum depths must be made in changeable areas unless the critical depths are regularly examined and updated. ~~For depths within a Deep Water route, see B-435.3f.~~

Note: The difference in value between the actual minimum depth and the authorized (or recommended) maximum draught will vary according to the situation (for example, whether the sections of track are sheltered or not). This will be determined by the regulatory authority. Maximum authorized draught must only be shown in addition to the latest known bathymetry, which may be in the form of maintained dredged depths (see B-414) for such areas. Local authorities which do not provide actual surveys should therefore be requested to provide statements of maintained depths.

Note: It is planned in due course to include generic symbols for maximum authorized draught and minimum depth in INT1, possibly at I26 and I27, in order to make the difference more explicit for chart users. When this is done, the references will be added to B-432.4.

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5. Source diagrams. The following minor revision was agreed under CSPCWG Letters 10 & 14/2014. The CSPCWG has agreed that it is acceptable, although not necessary, to indicate by letter unsurveyed, maintained and dredged areas on traditional Source diagrams. It was decided that the guidance should be included at B-296.2, as follows (changes in red):

B-296.2 **The sources** in each category of similar origin and type should be listed chronologically, preferably with the most recent first. Hydrographic surveys should normally precede references to charts, and in some cases the relative importance of a major survey may require it to be placed first. Sources of topographic detail, if included, should appear last. Maintained, dredged and unsurveyed areas may be labelled separately, if considered useful, for example:

a Maintained channel
e Unsurveyed area

Other consequential amendments:

B-291.1 **The purpose** of Source diagrams is to guide navigators, and those planning 'navigational operations' (including the planning of new routes and official routeing measures), on the degree

of confidence they should have in the adequacy and accuracy of charted depths and their positions. A Source diagram should ideally give details of the ~~survey~~ data from which each part of the chart has been compiled. See B-417 for a summary of the ways in which the inadequacy of surveys may be indicated on charts.

B-418.1 **Areas delimited by a bold line**. In unsurveyed areas which are considered dangerous for vessels to enter, a very positive form of warning is required. Such areas must be shown by bold dashed black or magenta limits, with the legend either:

- '*Unsurveyed*' (which may be accompanied by a note) or
- '*Depths (see Note)*'.

A reference to the Source or ZOC Diagram may be inserted instead of a note. See B-296.2 and B-297.7.

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6. Dangerous cargo berth. The following minor revision was agreed under CSPCWG Letters 10 & 14/2014. The CSPCWG agreed to a new symbol for a dangerous cargo berth/anchor berth (although it utilizes an existing familiar symbol in its make-up). It should be located at INT1 F19.3 and the current term at N12.7 should be extended to include dangerous cargo. Proposed revised specifications (changes in red):

B-321.8 **Berths for particular purposes** should be indicated by a legend or by the following symbols, if appropriate.

A visitors' berth (for example in a marina) may be indicated by the magenta symbol (diameter about 2.5mm):

F19.2

A dangerous cargo berth may be indicated by the magenta symbol (diameter about 2.5mm)

F19.3

If the dangerous cargo berth also has a berth number, the 'flame' symbol should be inserted within the oval (see B-321.7), adjacent to the number.

B-431.2 **Designated anchor berths** must be shown, normally by means of a magenta anchor with a circle superimposed. The number or letter assigned to the berth, and/or possibly symbol describing the purpose (for example dangerous cargo 'flame', quarantine cross) must be inserted within the circle. If necessary, to contain a 3-figure (or longer) designation, the circle may be extended to an oval:

Other consequential amendments:

B-431.3 Amend term at N12.7 to 'Dangerous cargo anchorage area'

INT1:

1. Add new symbol at F19.3
2. Amend term at N12.7 to 'Dangerous cargo anchorage area'

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7. Wind farms under construction. The following significant revision was agreed under CSPCWG Letters 10 & 14/2014. There are problems associated with charting very large wind farms where construction sometimes taking several years. The CSPCWG agreed to add some guidance to B-445.9. At the same time, the CSPCWG also decided that it is unnecessary to chart the associated air obstruction lights which should be covered by a legend or note. The following revised specifications have been agreed (changes in red):

B-445.8 **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 grid. They are often in groups (known as wind farms) and may be sited on-shore (see B-374.6). Individual wind turbines must be shown by the symbol:

L5.1

If a navigational light is attached to the wind turbine, a flare should be added to the base, and the light description placed alongside. Air obstruction lights may be charted as '(RLts)' if required, in accordance with B-476.2. No attempt should be made to describe the characteristic of the obstruction light other than its colour, as the visible character is likely to vary according to weather conditions and the angle at which it is viewed. Where numerous turbines are shown, it is often better to avoid chart clutter by either:

- adding a note (similar to the oil/gas field note – B-445.2) to state that all (or specified) turbines in the wind farm may exhibit air obstruction lights, or
- adding a legend under the wind farm name, eg '(Red lights on turbines)'.

Where vessels may navigate close to the structure, it is appropriate to show the minimum clearance height (in accordance with the datum for vertical clearances – see B-380.1) under the blade on large-scale charts, using symbol D20.

For wind turbines under construction, see B-445.9.

B-445.9 **…**[unchanged section]

Note: Individual wind turbines which have navigational lights attached should be charted, even within a wind farm, if scale permits. For charting air obstruction lights on turbines, see B-445.8.

If all the turbines in a wind farm are floating, the symbol in the centre of the circle must be sloping 15°:

L5.2

Wind farms (and individual wind turbines) under construction may be indicated by the legend 'Under construction' with year date (F32), within or adjacent to the charted area or symbol**.** However, large wind farms may take years to construct. Where navigation through such areas is permitted and it is possible to show individual turbines, it may not be practicable to continually update the chart to show new turbines when their construction is completed. Also, those under construction may be at different stages, below or above water; all stages may be hazardous to navigation. In such cases it may be useful to mark the planned location of the turbines (which usually conform to a regular pattern), to assist the mariner in navigating safely between the rows, as follows:

The symbol F22 (Minor post or pile) should be used to indicate the pattern of planned turbines.

A note should be added to explain the use of the symbol, for example:

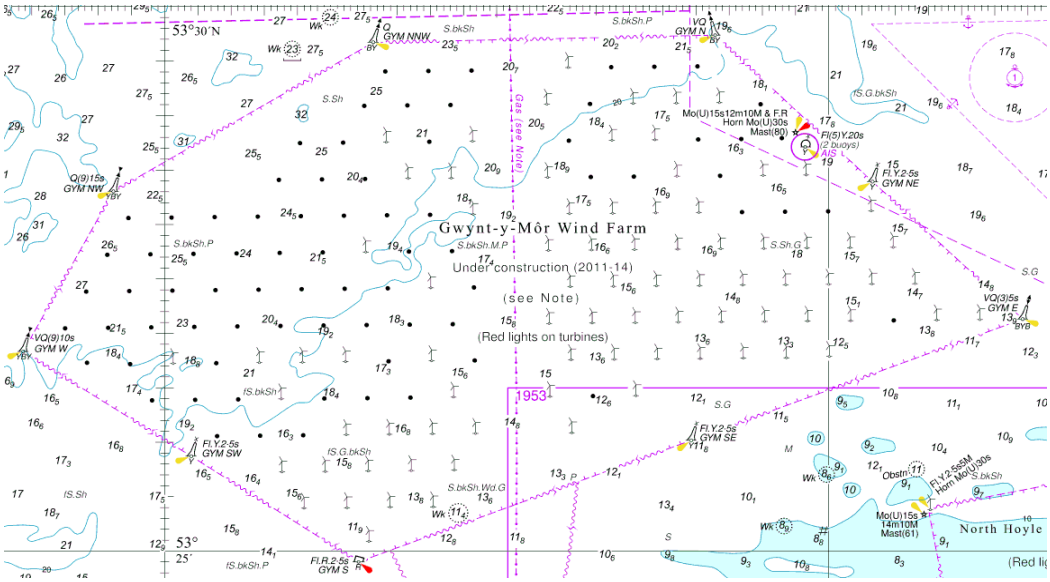
WIND FARM UNDER CONSTRUCTION

The symbols [*insert F22*] within the wind farm construction area show the planned positions of the turbines. A safety zone of 50m becomes operational around each turbine as it is being installed, with a safety zone of 500m around the installation vessel; unauthorized navigation is prohibited in these zones. The symbols [*insert L5.1*] show the positions of any turbines that have been installed before the edition date of this chart.

Consult local notices to mariners issued by the wind farm developer for details of installation progress.

Periodically, the turbines that have been fully installed should be added by NM Block or New Edition, using symbol L5.1.

Example:



When the wind farm (or a significant section of it) becomes operational and confirmation is received that the permanent aids to navigation are operating correctly, charts should be updated to include all features appropriate to the chart scale.

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8. Chart Maintenance: recording outstanding information. The following minor revision was agreed under CSPCWG Letters 11/2014 & 01/2015. CSPCWG have been made aware of the problem of NM blocks building up on a chart, making it difficult for the user. It decided to make this problem more explicitly referenced in B-641, by separating the descriptions about 'Standard' and 'Pattern' copies. The following revised specifications have been agreed (changes in red):

B-632.1 **A graphical chart-updating NM** (subsequently referred to as a **block**; also sometimes called **chartlet** or **patch**) is an updated portion of a chart containing new or revised information in a particular area. The user can apply it to the chart, to cover obsolete details. The purpose of a block is to promulgate a significant amount of new safety-related data in a relatively small area. It must be used where the complexity or volume of changes would clutter the chart unacceptably if amended by hand or would overburden the chart corrector, thereby compromising its safe application. However, consideration should be given to the number of block corrections already applied to an edition of a chart when determining whether to produce an NM block or a new edition of the chart. An accumulation of blocks on top of blocks could cause distortion or make the chart difficult to fold or use drawing instruments. See also B-641.3.

B-641.3 **'Pattern' or 'NM' copies** are original paper copies of the current chart edition. All Notices to Mariners are added in manuscript from the original textual NM and any NM Blocks are attached in the correct location. They therefore provide a useful aid in visualising the likely state of a chart on board ship where a replacement reprint has not been obtained. In areas of frequent updating they may be examined to avoid:

- potential for over-marking in an area on a chart, thereby making it difficult to read;
- an accumulation of blocks on top of blocks which may not have been affixed accurately, or become distorted, so that adding another could render the chart inaccurate or difficult to use with drawing instruments.

A quick look at the pattern copy could determine that a new edition would be a better option for the user than another NM or NM block.

Alternatively, digital versions of pattern copies can be generated, although these may give a less accurate indication of the state of the ship board version of the chart.

B-641.5 **'Standard' ~~or 'Pattern'~~ copies**. These are printed copies of current charts, marked up to show the outstanding information in some detail. This enables work done during assessment of data to be transferred to the standard in a way which will provide some impression of the amount and significance of data outstanding. However, it is more time consuming and on 'busy' charts it may get confusing as some outstanding data is replaced by newer data. An alternative is to hold assessment work as a series of overlays to the standard.

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9. NMs for AIS Aids to Navigation. The following significant revision was agreed under CSPCWG Letters 11/2014 & 01/2015. The proliferation of virtual and physical AIS transmitters can cause excessive chart clutter and difficulty in maintaining charts. The CSPCWG decided on some additional guidance for such areas. It was also noted that the term 'synthetic' is no longer to be used. The following revised specifications have been agreed (changes in red):

B-489.1 **An AIS-equipped Aid to Navigation (AtoN)** may provide a positive identification of the aid. It may also transmit an accurate position, and provide additional information such as actual tidal height or local weather; details of these functions, which cannot be charted, should be provided in associated publications as appropriate. AIS transmissions must normally be charted using the magenta radio circle and **international abbreviation** 'AIS', see B-480:

S17.1 (with the letters in upright text) must be used for fixed AtoN and **S17.2** (with the letters in sloping text) must be used for floating AtoN.

In areas where the local authority has decided to transmit AIS signals from most aids to navigation such that individual depiction of all relevant aids as AIS-equipped will result in excessive chart clutter, the relevant hydrographic office should issue a statement to this effect and insert a note on charts (or in an associated publication) stating that AIS transmitters (except virtual AIS aids to navigation) will not be shown on charts.

Note: the signal may:

- actually be transmitted from a physical AtoN;
- apparently be transmitted from a physical AtoN (formerly referred to as a synthetic signal); or
- be transmitted to represent a non-existent AtoN (that is, a 'virtual' AtoN).

For signals actually or apparently transmitted from a physical AtoN ~~and also for synthetic signals associated with a physical AtoN~~, the centre position circle should be replaced by the symbol for the actual AtoN, for example a light star or buoy symbol. For charting a 'virtual' AIS AtoN, where no physical AtoN exists, see B-489.2.

B-489.2 (paragraph 5 only)

It will not usually be practical to chart temporary or dynamic V-AtoN. However, permanently activated V-AtoN should be charted if appropriate, for the same purpose as physical AtoN. (Note: as with physical AtoN, in some cases it may be advantageous to replace a sequence of V-AtoN by a legend, for example: '*Channel marked by virtual aids to navigation*'.) If charted, the symbol must be made up as follows:

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10. QR codes. The following minor revision was agreed under CSPCWG Letters 11/2014 & 01/2015. The use of QR codes to facilitate user access to data is increasing on charts. The CSPCWG decided that some guidance should be added to S-4 at B-243.1. The new specification is as follows:

B-243.1 **QR (Quick Response) codes** are unique two-dimensional barcodes that can be read using a mobile device, such as a 'smartphone' or a dedicated QR code reading device. Encoded into them are Uniform Resource Locators (URLs) (web addresses) and any webpage can be opened by scanning the associated QR code.

Example of a QR code:

QR codes may be added to a chart to provide easy access to additional information relevant to the chart. One example of the use of a QR code is to provide a link from the paper chart to the publisher's Notice to Mariners chart updates on its website. This allows mariners, distributors and port state inspectors to access the latest maritime safety information for each particular chart at the touch of a button. Other examples include directing chart users to real-time tidal information and digital versions of the chart.

Generally, the larger the QR code the easier it is to scan. However, the pixel size used in the QR code is influenced by the length of the URL string: the longer the text string the smaller the pixel size and therefore the harder to scan. Some companies offer a URL shortening service that recodes the long text string into a much shorter version, allowing the QR image size to be reduced.

Consideration should be given to the placement of QR codes on charts. For example: a QR code linking to Notices to Mariners should be adjacent to the chart updating information in the margin of the chart; a QR code linking to tidal data should be adjacent to the charted tidal level or tidal stream information, if possible.

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11. Reminder to chart users about (T) and (P) NMs. The following minor revision was agreed under CSPCWG Letters 11/2014 & 01/2015. The CSPCWG agreed that a reminder to chart users about

referring to (T) and (P) NMs could be included in the margin of charts, if considered useful. An additional paragraph (shown in red) will be included in B-252.3 as follows:

B-252.3 **Notices to Mariners.** Charts must bear the legend 'Notices to Mariners', or equivalent (such as 'Small corrections'), in the lower left-hand corner, outside the border of the chart, where the mariner can insert the relevant references for updates carried out on the chart following their appearance in Notices to Mariners (NMs).

A further legend warning of Temporary and Preliminary Notices to Mariners may also be shown close to the Notices to Mariners Legend, for example: 'For safe navigation, also see Preliminary and Temporary Notices to Mariners'.

Charts should be brought up to date to the day they leave the hydrographic office. At the time of despatch, each chart must have a stamp or note indicating the last NM included, or the date of the last group of NMs consulted for its correction, even if this group and possibly preceding groups did not in fact contain any updates to be made to the chart in question. This stamp or notation should state very clearly the name of the hydrographic office concerned.

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12. INT2 and INT3. The following minor revision was agreed under CSPCWG Letters 11/2014 & 01/2015. While considering an application to include other language versions of INT3 to the IHO website, the CSPCWG determined that:
    - The CSPCWG should formally approve new editions of INT2 and INT3 (by correspondence), as it does for INT1 via its INT1 sub-WG.
    - Other language versions of INT3 are unnecessary for what is essentially a graphical guide.

    Consequential changes to B-152 and B-153 are shown as follows, in red:

B-152 INT 2 — BORDERS, GRADUATION, GRIDS AND LINEAR SCALES

INT 2 shows specimens of the various patterns of border graduation and linear scales, with textual guidance in English and French. INT 2 is published by The Netherlands. Member States may create their own border and linear scale style graphics based on INT2, to show national variations in exact border widths, font styles, etc, and textual guidance in their national language, provided it is in accordance with the guidance in B-212 to B-221. Such graphics must not be labelled as INT2 or include the IHO seal.

B-153 INT 3 — USE OF SYMBOLS AND ABBREVIATIONS

INT 3 is a standard reference chart of a fictitious area with as many examples as possible of the use of these Specifications (S-4 Part B and Part C). INT 3 is published by UK. The text within the example charts is in English, in accordance with B-510.4. As there is very little other text on INT3, it is not considered necessary to produce other language versions of this product. Member States are therefore encouraged to use INT3 as a compilation guide. However, Member States may create their own reference chart, which must be of a fictitious area, based on INT3, to show national versions of symbols, provided it is in accordance with the guidance in S-4. Such charts must not be labelled as INT3 or include the IHO seal.

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13. Secondary fairways. The following minor revision was agreed under NCWG Letters 02 & 08/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 8.9 and Action NCWG1-27 refers) that new guidance was required for indicating secondary fairways, which may be

intended to separate certain classes of vessels (such as small craft) from vessels intended to use the "main" fairway, on paper charts. The following revised specifications have been agreed (changes in red):

B-434.5 …

Alternatively, where a leading line lies within a fairway, the maximum authorized (or recommended) draught may be shown on the leading line (M6), see B-434.3.

Secondary fairways may be defined parallel to a main fairway and designated for other vessels, such as those with lesser draughts. These should be delimited in the same manner as the primary fairway (M15) if they are part of the regulated routeing measure. Secondary channels that are not part of the routeing measure should be charted appropriately, usually as a recommended track (M3-6). A legend inside or adjacent to the secondary fairway, channel or track, and/or an associated note, may be used to indicate its purpose.

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14. Area to be Avoided within TSS. The following minor revision was agreed under NCWG Letters 02 & 08/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 8.10 and Action NCWG1-28 refers) that clarification was required that magenta tint should be retained where an Area to be Avoided is contained within a Traffic Separation Zone. It was further agreed that where an area intended for vessels to enter (such as an anchorage area) should have the magenta tint excluded where the area falls within a Traffic Separation Zone. The following revised specifications have been agreed (changes in red):

B-435.1 …

c. **A separation zone or line** (M12-13) is defined in *Ships' Routeing* as:

> 'A zone or line separating the traffic lanes in which ships are proceeding in opposite or nearly opposite directions; or separating a traffic lane from the adjacent sea area; or separating traffic lanes designated for particular classes of ship proceeding in the same direction.'

A separation zone must be shown by a tint light enough not to obscure any hydrographic detail. The tint must be omitted within an anchorage (or any other area that a vessel must navigate into) that lies within the separation zone. If an 'Area to be Avoided' lies within the zone, the tint should be retained.

A separation line must be shown by a similar tinted line 3mm wide (or less on smaller scale charts).

If the traffic lanes are separated by natural obstructions, such as islands or marked shoals, representation of the separation zone may be omitted.

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15. Use of non-IHO Member State seals on international (INT) paper charts. The following revision was agreed under NCWG Letters 02 & 08/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 9.7 and Action NCWG1-46 refers) to include new guidance at B-241.2 specifying the conditions under which a non-IHO Member State seal may be included on an international (INT) paper chart. The following revised specifications have been agreed (changes in red):

B-241.2(I) **On international charts** the seal of the producer nation and the IHO seal must be placed above the title, side by side and of equal height, with the producer nation's seal on the left. In the case of a reproduced international chart, the printer nation's seal must be placed between the seals of the producer nation (to the left) and the IHO (to the right); the latter two seals must be smaller in height than the seal of the printer nation (about 0.8 of the height).

If the international chart is co-produced (or co-published) the producers' seals, of equal height, must be placed to the left of the printer's seal and arranged in alphabetical order (from the left) based on the producer nations' ISO two-letter codes. Some cartographic judgment may be required to maintain an aesthetic layout (for example four seals may need to be of a consistent size to avoid an unbalanced look). Alternatively, the seals may be placed in the top margin, in the same order.

The words 'INTERNATIONAL', or equivalent, above and 'CHART SERIES', or equivalent, below the seals must also be shown on international charts.

Note: The IHO seal must only be used on charts produced by Member States of the IHO. Seals of non-IHO Members may be added to INT charts where the nation or organization has officially delegated its cartographic authority to a chart producer which is an IHO Member State and:

- Has supplied source data upon which it can reasonably assert ownership; or
- Claims copyright and/or intellectual property rights on content; or
- Has contributed some degree of quality control or quality assurance in the chart's construction.

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16. Consistency between chart products. The following revision was agreed under NCWG Letters 03 and 10/2015. In association with discussions on the UKHO Admiralty Information Overlay Service, it was agreed at the CSPCWG11/NCWG1 meeting (agenda item 9.4 and Action NCWG1-43 refers) to include new guidance in Section B-100 defining what is meant by 'consistency' of information content between corresponding paper charts and ENCs. In addition, the WG also considered revisions in Section B-600 to strengthen the wording associated with the requirement to apply the equivalent of paper chart (T) and (P) Notices to Mariners to ENCs, as agreed at HSSC6 (recommendations (i) and (ii) of paper HSSC6-05.5D refer). The following revised specifications have been agreed (changes in red):

B-104 CONSISTENCY BETWEEN CHART PRODUCTS

Providing consistent information for the same geographic location in corresponding paper charts and ENCs is critical to maintaining the mariner's confidence in using these different nautical chart products, particularly when both products may be used on the same bridge. For paper charts and ENCs to be considered 'consistent', all information that the hydrographic office considers significant to navigation must be included on both products.

This information must be presented on each product in a manner that will ensure the mariner interprets the information similarly, regardless of the different structure and format of the products. When navigationally significant information is updated, changes must be applied to both the paper chart and ENC as simultaneously as the differing chart updating methods used for each product allow. (see B-600).

Changes to Section B-600:

Remove 3rd bullet of clause B-600, and replace at the end of the clause:

Note: A change for which a Preliminary (P) or Temporary (T) NM is issued for a paper chart should be included as an update to an ENC cell, see B-633.1 and B-634.1.

New paragraph at end of clause B-633.1:

For ENC, temporary navigationally significant information should be promulgated by ENC Update in order to provide the ECDIS user with an up to date System ENC (SENC). For further information, see S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC, Clause 2.6.2.2.

New paragraph at end of clause B-634.1:

For ENC, preliminary navigationally significant information should be promulgated by ENC Update in order to provide the ECDIS user with an up to date System ENC (SENC). For further information, see S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC, Clause 2.6.2.3.

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17. Buildings in or over the water. The following revision was agreed under NCWG Letter 04/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 8.11 and Action NCWG1-29 refers) to include new guidance in Section B-300 for the depiction of buildings (including 'built-up areas'), located in or on the water, on paper charts. The following revised specifications have been agreed (changes in red):

B-370.9 Buildings in or over the water. Buildings are sometimes erected in or over the water, beyond the coastline. These may be individual buildings, sometimes of a specialized nature, such as a fort, or an extension of urban areas on piles or stilts. In the latter case, it may be possible for small vessels to navigate amongst (or even under) the buildings, while it represents an impenetrable mass for larger vessels and appears to the eye or on radar images as apparent coastline. This is similar, in some respects, to the situation with mangroves, see B-312.4, and merits similar treatment.

In general, the same principles as for buildings on land should be followed. Individual buildings should be charted in outline with land tint if scale allows, or by symbols if the chart scale is too small (D5 or an appropriate selection from E). Urban areas should be charted in the same way as urban areas on land, depending on national practice: that is as building blocks with 'shadow line' or using urban tint (see B-370.4). If using building blocks, they should be filled with land tint and an explanatory legend such as 'houses above water', or equivalent, should be inserted. If using urban tint, if possible it should be 'transparent' so that the intertidal or shallow water tint remains visible. The high water line should be charted as coastline (C1 or C2, as appropriate) and the outer boundary of the urban area as a fine dashed line (similar to C32/33).

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18. Offshore accommodation vessels. The following (determined to be a clarification at NCWG1) was agreed under NCWG Letters 07 and 12/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 8.4 and Action NCWG1-19 refers) to include new specification in Section B-400 for the depiction of offshore accommodation vessels on paper charts, by extending the use of the moored storage tanker symbol (INT1 – L17). The following revised specifications have been agreed (changes in red):

B-445.5 Moored ~~offshore production~~ vessels associated with offshore production.

a. **Floating Storage Unit (FSU):** A simple hulk providing storage for fully-processed oil awaiting export, usually through an SBM or similar system. ~~They~~ It will normally be un-manned.

b. **Floating Storage and Offloading (FSO):** A vessel which stores fully-processed oil and provides facilities for loading export tankers. It will normally be moored in such a way as to allow it to swing to wind or stream. It is always manned.

c. **Floating Production, Storage and Offloading (FPSO):** FPSO are used to produce oil and gas from fields which are located in water that is too deep for fixed production platforms. These are highly specialized vessels which are part ship, part oil and gas processing plant, and part storage unit. The finished product is exported to shore by pipeline or tanker. Older versions of FPSO (usually converted tankers) may be moored to SPM or SBM. Modern versions incorporate a turret, through which pipelines connect to the sub surface facilities. The turret is anchored to the sea floor and incorporates a swivel which allows the vessels to rotate through 360° under the influence of wind and tidal stream. For safety zones around FPSO, see B-445.6.

d. **Accommodation (or Support) vessel:** A vessel for accommodating personnel, temporarily moored and capable of manoeuvring under its own power. They should only be charted if moored for a considerable period, such as six months or more. For shorter periods, a temporary Notice to Mariners may be appropriate. For inshore accommodation vessels, for example house boats and decommissioned cruise vessels used as floating hotels, see B-330.

~~FSU, FSO and FPSO~~ All the above should be charted by the symbol ~~for a moored storage tanker, L17~~:

L17

An appropriate legend or abbreviation, for example: '*Storage Tanker* '; '*Accommodation*'; '*FSU*'; '*FSO*'; '*FPSO*' (or equivalent) ~~may~~ should be added adjacent to the symbol if scale allows.

If the vessel is moored to a SPM or SBM, and the paper chart scale does not permit charting the mooring and the vessel, the legend should be placed adjacent to the symbol L12 or L16, as appropriate, and the symbol L17 omitted.

For Single Well Oil Production Systems (SWOPS), at which tankers are intermittently moored, see B-445.1.

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19. Refuge area/anchorage. The following revision was agreed under NCWG Letter 07/2015. It was agreed at the CSPCWG11/NCWG1 meeting (agenda item 8.6 and Action NCWG1-23 refers) to include new specification in Section B-400 for the depiction of refuge (or emergency) areas or anchorages for protection against forecast extreme conditions (e.g. tsunami, cyclone). The following revised specifications have been agreed (changes in red):

B-431.3 **Anchorage areas** with limits …[1st sub-paragraph unchanged]

Numbered or named anchorage areas, or anchorages for particular vessels, should be identified as in the following examples (sloping text, anchor symbol upright, all magenta) where possible. These symbols may be adapted for other purposes or types of vessels, for example refuge area (*Ref*), small craft. Size of text and associated anchor symbol may be adjusted to suit the size of the area.

Draft change proposed to B-493.4:

B-493.4 **A refuge for ~~shipwrecked~~ vessels and/or mariners** should be charted by the **international abbreviation**

Ref or *Ref* **T14**

The abbreviation should be inserted adjacent to an appropriate symbol, such as a building (D5) or a refuge beacon (Q124), or (in magenta sloping text) within a maritime area such as an anchorage (N12).
