

Changes to S-4 for Edition 4.8.0 - Derived from HSSC10 -05.4B

Revisions agreed by NCWG:

Note: Blue is background information, with instructions related to S-4 highlighted, amendments to INT1 highlighted. Black is reserved for existing S-4 specifications with amendments shown in red, or entirely new or replacement specifications all in black. The order of subjects is as they have been dealt with chronologically by NCWG and has no other significance.

NCWG3 Report Extract:

9.4. Exchange of reproduction material: recommendations about S-57 format (IT)

Docs: NCWG3-09.4A Exchange of reproduction material: recommendations about S-57 format

Manuela Milli (IT) presented the paper. Ben Timmerman pointed out that S-57 format is not ideal for adoptions, as cartographic elements included on the paper chart were lost. Nick Rodwell agreed, pointing out that colour separate TIFs were a better way to ensure faithful reproduction of adopted paper charts. This was generally agreed, although S-57 is a useful format for data transfer.

Yves Guillam suggested it would be useful to have some examples of bilateral arrangements on the IHO website.

ACTION 3/31: Secretary to draft amendments to S-4 Part A.500 for digital reformat (vector and raster) and circulate to WG members for review.

Outcome: The consequential amendments to S-4 are shown in red as follows:

SECTION 500

EXCHANGE OF REPRODUCTION MATERIAL

A-501 GENERAL

A-501.1 Reproduction material (repmat) is material made by the producer nation ~~at some convenient stage in the preparation of an international chart,~~ from which the chart may be reproduced, without redrafting, in modified facsimile by a printer nation. ~~It may be in analogue or digital form.~~ While it may be in analogue or digital form, it is now more usual, convenient and cost effective to exchange digital repmat.

A-501.2 Repromat for New Charts, New Editions, ~~Large Corrections, Limited New Editions, Reprints and Notice to Mariners Blocks~~ (see A-401.2) is supplied by producers at the request of printers (see A-402.2 and A-404.1). The terms, conditions and procedures for the exchange of repmat, ~~including automatic supply if appropriate,~~ will be established bilaterally between individual producer and printer nations (see A-601). ~~These should consider, but not be limited to:~~

- Ordering process or automatic supply.
- Identification of charts (e.g. INT number, national number).
- Points of contact.
- Digital or analogue.
- Supply method:
 - For digital repmat, see A-502.

- For analogue repro: shipping method and packaging (to prevent damage in transit). See also A-503.
- Acknowledgement of receipt.
- Financial arrangements if required, see A-600.

A-502 DIGITAL REPRO

A-502.1 Digital repro may be in vector (using the Transfer Standard for Digital Hydrographic Data, S-57) or raster format.

A-502.2 S-57 data is useful for data exchange, but not suitable for paper chart adoptions.

A-502.3 Raster format is more useful for modified facsimile 'adoptions' of paper charts, as this includes the cartographic elements (chart framework, text placement) which is not included in S-57. Ideally, each colour layer should be a separate file, the file format (for example Tagged Image Format - TIF) and resolution (for example minimum 600 dpi) as agreed between producer and printer.

A-502.4 Digital repro can be supplied via File Transfer Protocol (FTP) or for small NM blocks as an email attachment. The repro should be accompanied by an image of the complete chart, for example in Portable Document Format (PDF).

A-503 QUALITY OF ANALOGUE REPRO

A-503.1 The producer nation shall ensure that the repro being provided to another nation meets certain minimum standards given below. These represent a minimum specification and should permit the producer nation to use its normal work materials and procedures.

A-503.2 Material Characteristics: Analogue repro will be prepared on stable base plastic or film. The size of the repro will not vary from the computed chart size by more than $\pm 0,5$ mm over the longest dimension of the chart graticule.

A-503.3 Image Quality: Repro images will be precise and free of blemishes and holes, so as not to require opaquing or other touch-up work.

A-503.4 Amount and Form of Material: The most appropriate form and amount of repro will be agreed as part of the bilateral arrangements between producer and printer nations. Repro will be in negative or positive form depending upon the printing processes used by the nations concerned. The repro will be accompanied by a copy of the chart itself (see B-502.4).

A-503 REPRO FOR NM BLOCKS

~~**A-503.1** Printer nations will normally place a standing order with producer nations for the automatic supply of repro of NM Blocks (chartlets, patches) affecting all charts adopted by the printer nation (see A-401.2d).~~

~~**A-504 PROCEDURES FOR ORDERING AND SUPPLYING REPRO**~~

~~**A-504.1** Analogue repro is sometimes ruined in the process of shipment, or delayed because the parcel was not properly identified. The following procedures should minimise such problems:~~

- ~~A-504.2 — **Ordering reformat:** The printer nation requiring reformat of an international chart shall order such from the producer nation and shall identify the required reformat by the international number, followed by the national number.~~
- ~~A-504.3 — **Point of Contact:** Each producer nation shall designate an addressee for requests for reformat.~~
- ~~A-504.4 — **Ordering Procedures:** The printer nation shall order the reformat by letter or through the use of a requisition form. Requests shall specify that the reformat is being ordered under the relevant bilateral arrangement (see A-601.1).~~
- ~~A-504.5 — **Wrapping and Packing:** Reformat shall be so packaged as to prevent damage in transit. A mailing tube or box of reinforced cardboard shall preferably be used.~~
- ~~A-504.6 — **Supply Method:** The method of shipment shall be determined when the bilateral arrangement is established. Over long distances air shipment is recommended as, although relatively expensive, it is the fastest and least likely to result in damage. Appropriate identification on the parcel shall be made to preclude undue delay to the parcel in the Customs Clearing House of the receiving nation.~~
- ~~A-504.7 — **Receipt for Material:** The receiving nation shall acknowledge receipt of each shipment of reformat and shall provide a documentary receipt to the producing nation.~~
- ~~A-505 — **PAYMENT FOR REFORMAT**~~
- ~~A-505.1 — Where financial terms and conditions are agreed, they should in accordance with A-601.~~

NCWG3 Report Extract:

8.2. Small craft anchorage: would it benefit from a dedicated symbol? (UK)

Docs: NCWG3-08.2A Symbol for small craft anchorage/anchor berth

There was some uncertainty about the pros and cons of this proposal. Also, some discussion about the difference between anchorages and moorings.

ACTION 3/18: Secretary to draft letter explaining the proposals to extend the use of the yacht/small craft symbol in more detail and allow WG members to consider and vote as appropriate.

Outcome: The consequential amendments to S-4 are shown in red as follows:

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: **small craft 'boat'**, 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:...

S-4 B-431.3 amend as in red:

... 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.

NCWG3 Report Extract:

8.6. Symbol for rocks which do not cover (IT)

Docs: NCWG3-08.6A Rocks which do not cover: do we need a new point symbol?

Manuela Milli (IT) presented the Italian 'A' paper, proposing a new symbol for an above water rock or small islet (mainly to have a proper method of describing the feature for NM purposes and to have some suitable symbol to derive from ENC point land feature).

Colby Harmon presented the US 'B' paper counter proposal, agreeing the problem but recommending a different symbol, comprising a small, land tint filled, oval.

After discussing various options, the meeting agreed that there should be a paper chart equivalent for the S-57 'point' land feature, and that it should be a small land tint filled circle of coastline thickness.

ACTION 3/22: Secretary to draft amendments to S-4 for islet/above water rock symbol and circulate to WG members for review.

1. **ACTION NCWG3/22: Secretary to draft amendments to S-4 for islet/above water rock symbol and circulate to WG members for review.**

Outcome: The consequential amendments to S-4 are shown in red as follows:

S-4 B-310.2 (2nd sentence) amend as in red:

For an islet too small to be shown true to scale, see B-421.1.

S-4 B-421.1 amend as in red:

... An islet too small to be shown true to scale should be shown as a small circle of coastline thickness filled with land tint, emphasized if required by a danger circle (K1) and/or associated text. Scattered islets within a foul area (see B-422.8), delimited by a danger line (K1) and shallow water tint, may be shown as black dots, ideally with no dimension less than 0,5mm. Islets may be landmarks; for the charting of landmarks and conspicuous objects, see B-340.

NCWG3 Report Extract:

9.1 Changes consequent on revision of Res. 3/1919 (Work item A30) (Chair)

Docs: NCWG3-09.1A

Revised IHO Resolution 3/1919: impact on S-4

Secretary presented the paper. Yves Guillam advised that there may need to be amendments to INT1 H20. The proposed changes to S-4 were accepted by the meeting.

ACTION 3/27: Secretary to prepare revision consequent on Res 3/1919 (2017) for next edition of S-4 for HSSC10 and note possible changes to H20 for INT1subWG to consider.

Outcome: The consequential amendments to S-4 are shown in red as follows:

B-302.2 The plane of reference for all heights (including elevations of lights but excluding drying heights) must normally be a High Water (HW) datum, for example: Mean High Water Springs (MHWS); Mean Higher High Water (MHHW); Highest Astronomical Tide (HAT). Where there is little appreciable tide or change in water level at the adjacent shoreline, then Mean Sea Level (MSL) may be used.

Comments: ~~TR~~ IHO Resolution 3/1919 (as amended 2017), contains the following guidance:

In oceanic tidal areas heights on shore, including elevations of lights, should be referred to a Highest Water (HW) datum (paragraph 5).

Highest Astronomical Tide (HAT), or a datum as closely equivalent to this level as is practical and acceptable to Hydrographic Offices, should be adopted as the datum for **vertical clearances**. Alternatively, another, similar datum may be used if high water levels in a specific area frequently deviate from HAT, or a different datum has been established by national policy (paragraph 7).

In geographical areas where the tidal range is negligible (for example less than 0.30m) and in non-tidal areas depths, **and all other navigational information**, should be referred to Mean Sea Level (MSL) or other level as closely equivalent to this as is practical and acceptable to Hydrographic Offices (paragraph 10). (Note: The adopted level may be a well-defined geodetic datum as used for heights in land survey applications or an observed local Mean Sea Level (MSL) based on long series of water level observations.)

~~1. It is resolved that heights on shore, including elevations of lights, should be referred to a HW datum. Heights should be referred to Mean Sea Level (MSL) where the tidal range is not appreciable. The datum used should be clearly stated on all charts.~~

~~2b. 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.~~

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 Resolution 3/1919 (as amended 2017), ~~states that contains~~ the following guidance:

Highest Astronomical Tide (HAT), or a datum as closely equivalent to this level as is practical and acceptable to Hydrographic Offices, should be adopted as the datum for vertical clearances. Alternatively, another, similar datum may be used if high water levels in a specific area frequently deviate from HAT, or a different datum has been established by national policy (paragraph 7).

However, in **geographical areas where the tidal range is negligible** (for example less than 0,30m) and in non-tidal areas depths, **and all other navigational information**, should be referred to Mean Sea Level (MSL) or other level as closely equivalent to this as is practical and acceptable to Hydrographic Offices (paragraph 10).

~~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.

B-405 CHART DATUM

Chart Datum (CD) is the plane of reference to which all charted depths and drying heights are related. In tidal areas CD is chosen to show the least depth of water found in any place under 'normal' meteorological conditions. CD will vary from place to place in relation to the land survey datum or mean sea level. For further information, see ~~Technical~~ IHO Resolution 3/1919 (as amended 2017).

B-405.1 Uniformity of formulae for establishing CD for different nations would be difficult to achieve and is not essential for practical purposes. **On charts of scale 1:500 000 and larger** a general statement of the datum used must be included in the explanatory notes close to the chart title (see B-241.5 and Resolution 3/1919 paragraph 2) ~~on charts of scale 1:500 000 and larger.~~

B-405.2 Where the tidal range is not appreciable (that is: less than about 0.3m), ~~CD may be~~ **Mean Sea Level (MSL) In geographical areas where the tidal range is negligible** (for example less than 0,30m) and in non-tidal areas, CD should be Mean Sea Level (MSL) or other level as closely equivalent to this as is practical and acceptable to Hydrographic Offices (Resolution 3/1919 paragraph 10).

B-405.3 In oceanic tidal areas, Lowest Astronomical Tide (LAT), or a datum as closely equivalent to this level as is practical and acceptable to Hydrographic Offices, must be adopted as CD. Alternatively, another, similar datum may be used if low water levels in a specific area frequently deviate from LAT, or a different datum has been established by national policy (Resolution 3/1919 paragraph 6). ~~Where the tidal range is appreciable, the Lowest Astronomical Tide (LAT), or as closely equivalent to this level as is practically acceptable to hydrographic offices, should be adopted as CD. Alternatively, the differences between LAT and national CD may be specified on nautical documents. If low water levels in a specific area frequently deviate from LAT, CD may be adapted accordingly.~~ Since LAT is the recommended CD with worldwide application, and has the additional merit of removing all negative values from tide tables, this should be adopted as a long term objective, and be considered when opportunity for change arises.

~~For vertical clearances, see B-380. Highest Astronomical Tide (HAT) should be adopted as the datum for vertical clearances. 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. A HW datum should be used for vertical clearances in non-tidal waters (see Technical Resolution 3/1919 as amended 2008).~~

B-405.4 In some offshore areas, co-tidal charts and atlases may be available for use as a basis for reduction of soundings (for new surveys) to CD, for example co-tidal charts for the North Sea compiled under the auspices of the North Sea Hydrographic Commission. In depths greater than 200m, a reduction for tide is not necessary.

B-405.5 Tide Tables and Chart Datum. ~~IHO Resolution 3/1919 (as amended 2017) states that the datum of tide/water level observations and predictions for mariners shall be the same as CD. Whatever CD is used, it is essential that it is the same as the datum adopted for the predictions given in the authoritative Tide Tables.~~ Where, over a long period of time, datums are under adjustment to conform to LAT, or to take account of changes in sea level, the changes to Tide Tables and charts should be co-ordinated as far as possible.

B-405.6 The connection between Chart Datum and land survey datums should not be quoted on charts but should be readily available for the use of surveyors and engineers in national Tide Tables.

B-405.7 Rivers and estuaries. On the largest scale charts it may be desirable to indicate marked changes in CD over short distances by means of a diagram.

NCWG3 Report Extract:

9.2 Should we delete or update reference to LORAN (B-480.2)? (Secretary)

Docs: NCWG3-09.2A

Should we delete reference to Loran from S-4?

Secretary presented the paper. The meeting approved the proposal.

ACTION 3/28: Secretary to prepare deletion of 'LORAN' section for next edition of S-4 for HSSC10

Outcome: Delete section B.480.2

~~**B-480.2 Loran** (Long Range Aid to Navigation) is a low frequency terrestrial electronic position-fixing system. The signals are broadcast from widely spaced masts and are currently available in North West Europe, North America and parts of Asia. It provides a back-up for or alternative to satellite navigation systems and may be partly integrated with them. There is no requirement to include details of the Loran system on charts.~~

NCWG3 Report Extract:

9.3 Question about magnetic annual rate of change (Secretary, for Estonia)

Docs: NCWG3-09.3A Units for quoting annual rate of change for magnetic variation

Secretary presented the paper. The meeting approved the proposal. Ben Timmerman (NL) questioned which way the arrow head on the magnetic arrow should face. Mixed views were expressed by meeting participants.

ACTION 3/29: Secretary to draft change to S-4 to allow use of decimals of degrees for magnetic variation and circulate to WG members for review.

Outcome: The consequential amendments to S-4 are shown in red as follows:

B-260 Add new text under graphics:

Variation on the arrows may be expressed in degrees and decimals (to one decimal place) or in degrees and minutes to the nearest 5' and rate of change in decimals of degrees (up to two decimal places) or in minutes.

B-272.1b & c (amend as in red):

b. The magnetic variation must be shown in degrees followed by the letter E or W as appropriate. Where the isogonal of 0° is charted, it must be so labelled. The annual rate of change, expressed in up to two decimals of degrees or in minutes and followed by the letter E or W as appropriate, must immediately follow the variation, in brackets....

c.....

MAGNETIC VARIATION LINES ARE FOR (YEAR)

The Magnetic Variation is shown in degrees, followed by the letter W or E, as appropriate, at certain positions on the lines. The annual change is expressed in [decimals of degrees / minutes] with the letter W or E and is given in brackets, immediately following the variation.

B-272.3 (amend as in red):

The Magnetic North arrow must be labelled with the value of the variation, the year to which the value applies and, in brackets, the rate of annual change of variation. Variation must be given to one decimal place of a degree or 5', change to two decimal places of a degree or 1'. To both, values E or W must be added as appropriate. Where the increase or decrease in the rate of annual change is 0,01° or 0,5' or less, it must be shown as (0,0° or 0').

[Note: see also clarification to this specification, NCWG3 Action 30]

B-273 (amend as in red):

If a hydrographic office finds the values based on its national data differ by more than 0,75° or 45' for variation or more than 0,05° or 3' for annual change...

Other clarifications to S-4 agreed by CSPCWG/NCWG:

The following lists NCWG3 Actions related to clarifications to S-4, followed by the associated extracts from the NCWG3 report. The associated Explanatory Notes (ENs) are listed in the NCWG3 report extract below and can be viewed on the NCWG3 page of the IHO website, if required. Discussions follow under the heading 'Outcome' with agreed changes to S-4 shown in red, with deletions crossed through.

ACTION 3/17: Secretary to include clarification on option to use a range of colours for floodlighting symbol in next edition of S-4.

NCWG3 Report Extract:

8.1 Coloured flood lighting on multicoloured charts (UK)

Docs: NCWG3-08.1A Coloured flood lighting on multicoloured charts

Proposal was accepted.

Outcome: The consequential amendments to S-4 are shown in red as follows:

Clarify B-470.4a.ix to read:

The floodlit (illuminated) symbol (P63) **should be in an appropriate colour where the colour is known and constant.**

Clarify B-478.2 to read:

Floodlighting of a structure (for example: a pier; pier-head lighthouse) or a danger close to navigable water, should be indicated by the symbol  **P63**. The symbol must normally be in magenta **or may be in an appropriate colour on 'multicoloured' charts where the colour is known and constant.** Alternatively, it may be indicated by the **international abbreviation** '(illum)' against the structure or feature being lit, on the appropriate side if known.

ACTION 3/23: Secretary to draft clarification to S-4 B-431.2 to provide guidance on the depiction of anchor berth swinging circles and circulate to WG for review.

NCWG3 Report Extract:

8.7 Depiction of the swinging circle around anchor berth (IT)

Docs: NCWG3-08.7A Depiction of the swinging circle around anchor berth

Manuela Milli presented the paper. IT proposed 4 options for depicting anchor berth swinging circles where the actual anchor berth falls off limits. 3 further options were considered during the meeting. The meeting concluded that option 2 (to show the swinging circle limits alone) is best (simplest and retains vertical consistency) but that where it is not obvious what the feature is, the anchor berth symbol (with or without designation) could be shown set into the limit.

Outcome: The consequential amendments to S-4 are shown in red as follows:

Clarification to be added to B-431.2:

If the actual anchor berth falls off the chart limits, the meaning of the dashed magenta arc may be clarified, if considered necessary, by the addition of at least one anchor berth symbol (with or without designation) placed between the dashes of the arc. Symbols should be inserted at intervals of approximately 40mm or closer and not exceeding 50mm. This addition will not usually be necessary if other complete swinging circles are charted in the vicinity.

As a consequence of the above clarification, introduce consistent wording for adding point symbols to a line symbol in the following specifications:

B-435.2b ... The triangular danger symbol, in magenta (M16), must be used to represent a precautionary area. The size of the symbol may be varied to suit the charted size of the

precautionary area. A legend 'Precautionary Area' may be used in addition, especially if there is an associated note. The limits of precautionary areas must be bold dashed magenta lines (M15), which should continue uninterrupted across the ends of traffic lanes. **If required for clarity, the triangle symbol (sides 5mm) may be placed between the dashes in the limit symbol,** at intervals of approximately 40mm or closer and not exceeding 50mm, base of the symbol innermost.

B-437.2e ... Limits may be shown by a symbolized line or, if such a line is not appropriate or available, limits may be charted by a general maritime limit or restricted area limit (see below), with an appropriate legend within the area of the ESSA. Where it is necessary to highlight specific restrictions, reference to a charted note may be included. **Where symbols are placed between the dashes in an ESSA limit, they must be oriented to indicate the side of the line on which the area lies,** and be inserted at intervals of approximately 40mm or closer and not exceeding 50mm.

B-437.2f ... Multi-feature lines. Where the limit of the ESSA coincides with other limits which need to be charted, for example associated protective measures **such as anchoring and fishing prohibited which apply within the ESSA, they may be placed between the dashes in the symbolized charted limit.** Such limits are described as multi-feature lines; see B-439.6.

B-437.3 ... The limit of the Nature Reserve may be inserted using the appropriate basic line style as described in B-437.2.e with the appropriate symbol below inserted within the area. However, for large areas, the use of a patterned line should be considered, **combining the appropriate basic line style (see B-437.2e) with the appropriate symbol placed between the dashes and oriented in the line to indicate the side on which the area lies** (that is: base of the symbol innermost). Symbols used should be selected from the following:

B-439.6l ...

- **No more than three point symbols should be placed between the dashes of a single line symbol.**

ACTION 3/26: Secretary to add clarification to S-4 B-254 that 'other charts' may include limits of larger scale ENC coverage and circulate to WG members for review.

NCWG3 Report Extract:

8.10. Larger scale ENC data limits on paper charts (Chair – for AU)

Docs: NCWG3-08.10A Larger scale ENC data limits on Paper Charts

Chair presented the paper on behalf of AU. SE and CA stated they had similar examples. Yves Guillam expressed concerns about the second paragraph of the note, with which the meeting agreed. The first half of the note seemed to be stating the obvious and is unnecessary. The meeting decided that this is a legitimate application of 'references to other charts' (B-254), preferring that the limit should be charted as any other chart limit, with the reference simply to 'ENC' (the cell designation is unnecessary, adds extra clutter, especially if there are actually a series of cells required).

Outcome: The consequential amendments to S-4 are shown in red as follows:

Clarification to be added at the end of B-254.2:

Limits of larger scale ENC coverage may be shown, if considered useful and especially where there is no equivalent paper chart, in the same way as larger scale paper charts described above. They must simply be labelled 'ENC' and the limits should indicate only the area of actual data coverage.

ACTION 3/30: Secretary to research whether there is any guidance on position of magnetic arrow related to direction of magnetic variation or variation change and draft appropriate guidance for S-4.

NCWG3 Report Extract:

9.3. Question about magnetic annual rate of change (Secretary, for Estonia)

Docs: NCWG3-09.3A Units for quoting annual rate of change for magnetic variation

Secretary presented the paper. The meeting approved the proposal. Ben Timmerman (NL) questioned which way the arrow head on the magnetic arrow should face. Mixed views were expressed by meeting participants.

Outcome: The consequential amendments to S-4 are shown in red as follows:

Clarification to be added at the end of B-272.3:

The shape and placement (left or right for single-sided arrowheads) of the magnetic north arrow is optional and has no significance. It may be adjusted or broken to avoid clashes with detail.

NCWG3 Report item 11.1

Outcome: The consequential amendments to S-4 are shown in red as follows:

Delete reference to 'telegraphic or' at B-431.5 (paragraph 5).

A mooring buoy with ~~telegraphic or~~ telephonic communication facilities should be shown by having a submarine cable symbol leading to it (in magenta).