#### Paper for Consideration by TSMAD and DIPWG

#### Paper-Chart / Simplified Symbology Consolidation

Submitted by:	DIPWG Chair						
Executive Summary:	At the Joint DIPWG3/TSMAD22 meeting an action item was established to set up a correspondence group to consider which simplified or paper-chart symbols to keep for the S-101 portrayal. This paper and the embed comments received from the individuals listed below, constitutes the recommendations of the correspondence group.						
	Comments from a review of the Mathias Jonas Thomas Mellor Friedhelm Moggert-Kägeler Hannu Peiponen Jeff Wootton	is document were received from the following: BSH UKHO SevenCs Furuno Australian Hydrographic Service					
	At first glance it seems like an easy enough task to lay out each set of simplified and paper chart symbols and just pick one or the other. Upon further examination it becomes clear that it is more complicated; the simplified symbol Look-Up Table rules sometimes portray more detailed feature information, sometimes less. The relationship between the plain and symbolized lines is also complex						
	Considering the scope of the task at hand, it would be prudent to focus on point symbols and to save the analysis of symbolized/plain boundaries for another time, if at all. Most of the confusion for mariners and the desire for a single set of symbols is tied more closely to point symbols anyway.						
	The greatest benefit will be gained simply by colour filling the paper chart lateral buoys. This should be relatively straight forward to implement and would have a pretty big impact on the ECDIS display.						
	There are also a few additional symbology for the safe water n consolidating paper-chart and was partially driven by the low Presentation Library was first d birds with one stone and impro are being manufactured.	enhancements being proposed, such as changing the narks, that strictly speaking go beyond the task of simplified symbology. The need for simplified symbols er resolution display screens available when the S-52 eveloped, we should not miss an opportunity to kill two ove some symbols now that higher resolution displays					
Related Documents: Related Projects:	S-52, S-100, S-101						

#### **Proposed Methodology**

In selecting or creating the best symbol, one must balance the familiarity of the symbol against maximizing the amount of information about the object that can be presented clearly. Simplified symbols provide colour information that many paper chart symbols do not, while the paper chart symbols are more familiar and provide more information about the aid's shape. It is proposed here that the most specific (least generic) of either the paper chart or simplified look-up table (LUT) rules be migrated forward into S-100/101 (although we may end up having to tweak many of them). Also, we should select or create symbols that convey the most shape and colour information.

To this end, a new set of colour filled symbols are presented here for your review. All of these are modifications of existing S-52 symbols. These are all described in the attached augmented excerpt from the S-52, Presentation Library (Addendum to Annex A). The excerpt also contains all of the existing aid to navigation (ATON) related symbols. The new symbols are listed (Numbers 591and higher) in section 15.3. In addition to the new engineering drawing for the new symbols, a new reference number and applicable colour tokens have been added

The "Beauty Contest Results" below present just one way in which a single set of symbols could be created. Members of an ad hoc correspondence group that was set up to consider the consolidation of simplified and paper-chart symbols have reviewed the recommendations presented here and their remarks are embed in this paper. In addition to the correspondence group comments shown in the gray comment boxes, some comments in the symbol engineering drawings are encapsulated as PDF comments, which may be accessed by clicking on the

comment icon  $\blacksquare$ . These comments are all related to line weights and the size particular symbol components.

This "straw-man" only discusses selecting, discarding and creating point symbol graphics. The next and more painstaking task will be reviewing and editing the Presentation Library Look-Up Tables and the CSPs to accommodate any changes that we agree upon for the symbols. This will ultimately result in one conflated look-up table for points and the elimination of the Look-Up Tables for simplified symbols. The parallel effort related to the Data Classification and Encoding Guide for S-101 will also have implications on the LUTs and the CSPs, especially if the proposed modelling of lights using complex attributes is accepted.

### Symbol Taxonomy

For the sake of convenience and so we may speak more precisely about this topic, I propose the following "Symbol Taxonomy." There may be more symbol "species" discovered along the way, but I think this group will suffice for now.

**Unified Symbol** – A new symbol (either brand new or a modified existing symbol) that will replace both members of a paper-chart/simplified symbol pair. A candidate for a unified symbol is "conical buoy, red."



Selected Symbol – An existing (unmodified) paper chart or simplified symbol that has been declared the "winner" of a paper-chart/simplified symbol pair "beauty contest" and will be carried forward into S-100/101. The simplified cardinal buoy symbols are easier to see than the paper chart versions and still provide aspects of a familiar convention. Therefore, it is proposed that the simplified "cardinal buoy, east" (and the other simplified cardinal buoy symbols) be designated as selected symbols.



**Discarded Symbol** – An existing paper chart or simplified symbol that has been replaced by a "unified symbol" or has been declared the "loser" of a paper-chart/simplified symbol "beauty contest" and will not be carried forward into S-100/101. If the simplified cardinal buoy symbol is selected and it is determined that the paper chart "topmark for buoys 2 cones base-to-base" symbol has no other legitimate use, then it will be designated as a discarded symbol.



**Retained Symbol** – Although every "beauty contest" will have a winner, there may not always be a complete loser. Some symbols that are rejected in the case of a particular paper-chart/simplified pair, may be retained for other purposes. This would be the case for the generic paper chart "conical buoy" symbol, which would no longer be used for the paper chart portrayal of IALA-B starboard lateral buoys, but would be used for other cases.



**New Rule Symbol** – A new symbol for which no paper chart or simplified Look-Up Table rule currently exists. This is the case where a new symbol would require a new or more specific rule (other than just changing the symbol reference). For example, if the generic special purpose buoy rule was replaced or augmented with new rules that portrayed the shape of the special purpose buoy, then these would be considered new rule symbols, such as the yellow spar, spherical and barrel buoys.



The directions that were provided to the ad hoc correspondence group are shown in the box below:

### Action for Ad Hoc Paper-Chart / Simplified Symbology Consolidation Sub-Working Group

### "First Round Beauty Contest Results"

The "Beauty Contest Results" below present just one way in which a single set of symbols could be created. Your recommendations and alternative ideas are sought. It is important to note that the tables below showing the "Beauty Contest Results" DO NOT show all of the new symbols being proposed. Please also review section 15.3 and the engineering drawings to see some additional symbols that are only discussed in a general way in the "Beauty Contest" tables.

I suspect that we will iterate on this a few times. Therefore, in order for us to have time to prepare at least a preliminary report for DIPWG 4, your response before 27 Jan. 2012 is requested. Space has been provided within this document for your feedback. Please "reply-to-all" and re-attach your annotated version with your reply.

As you review the proposed changes, please consider the following:

- 1. Is there a need for this symbol?
- 2. Is there a better graphic design that could be created for this symbol?
- 3. Are there any other new or modified symbols that should be added?
- 4. Describe or submit a graphic for any ideas you have concerning items 2 and 3 above.
- 5. Provide general recommendations regarding next steps, how the effort might be broken into phases, how the work on modifying the LUTs or CSP might be undertaken, etc.

You may also provide any additional comments or recommendations here:

#### WOOTTON:

1. In regard to buoy symbols – are we introducing an inconsistency in symbology if we represent cardinal and isolated danger marks using the topmark symbol and lateral, safe water and special purpose marks using the buoy symbols?

2. Same for beacons.

3. Daymarks: How is the ECDIS display going to work if encoders choose to encode a different feature as the master and the daymark as the slave? Will need to ensure a better relationship between the encoding and the portrayal for daymarks in order to get the required result in ECDIS display. I think this may be a result of having the daymark be either a master or slave in the encoding.

### **PEIPONEN:**

a) Current S-52 defines one standard pixel as 0,32 mm. One pixel features are not visible and therefore they should not be used. Some symbols include circles or points with 0,6 mm diameter. Such a circle or point is less than 2 pixels and therefore it could be rendered as 1 pixel, which is no good. Better is to define 3 pixels, which is 0.96 mm. In extremely narrow symbols the 0.96 mm point is too wide, in those cases a cross by two lines should be used to indicate the center point.

[Harmon: This is points out a problem in the existing S-52 specifications for simplified beacon and buoy symbols, which is therefore also present in the proposed changes. Regardless of the decision that is made about simplified and paper-chart symbols, this problem will still need to be addressed in S-52 and S-100/101. HP proposes changing all instances of "point diameter 0.6mm" to 0.96mm ]

b) All examples in the "beauty contest" as "selected" or "unified" is acceptable for me

c) I found one typo in which the dimension is 4.06 mm instead of 1.06 mm

[Harmon: The dimensions shown in the proposed new safe water buoy, reference number (RN) 604, should read "Line weight 0.6mm, Circle diameter 1.18mm."]

### **MOGGERT-KÄGELER:**

Basically we think that it could be confusing to have a symbol set that mixes simplified and traditional symbols. Most likely there will be a situation where ECS/ECDIS systems will have to display both S-57 and S-101 ENCs simultaneously. In general, to avoid confusion we suggest to use either shaped symbols or simplified ones. However, we would prefer symbols with colors and shapes (i.e. similar to the current traditional set). I think the shaped symbols in your document look very good and they could definitely contribute to a better readability of ENC data.

When I reviewed the "Daymark Symbology" I noticed that the symbol for square or rectangular red daymark could be confused with a "notice mark" symbol for Inland ENCs.

### **MELLOR:**

The proposals in the paper make general sense and we are glad to see traditional coloured buoyage. The existing outline representations of traditional lateral buoys have been raised at Carnival's navigation training as a safety issue when viewing in night display mode (grounding of LS Cortesia on the Varne Bank in 2008).

Based on the recommendations in the paper our primary concern is over the confusion that already occurs around the actual position of the simplified symbols. The centre of a simplified symbol is generally the pivot point feature location, but it is the base circle for traditional symbols. In creating a single set of mixed traditional and simplified symbols are we compounding the issue? To help solve the problem the presence of a 'dot' or 'circle' at the base of simplified symbols may make it clear, but at present the cardinal buoys do not have either.

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We also note that there seems to be omission of a specific symbol for a preferred channel mark in S-52, this may be due to design limitation back in the day but we would like to suggest that this is added to the paper and the incorporation of a specific symbol for emergency wreck marking buoy be considered.

Unified	Selected	Discarded	Paper Chart	Simplified	Simplified Symbol Explanation	Description of Proposed Change	Your Review Comments for Change Enter "Agree" or "Disagree" and reason and/or alternative recommendation
		* 1	*		cardinal buoy, north		Jonas: Agree, discard double cone topmarks Wootton: One of the core principles
		* 🔶	* 🔶		cardinal buoy, east	Select all simplified cardinal buoy	of encoding data in S-57 for ENC (and hopefully also in S-101) is that the encoding be done as the feature exists in the real world. JALA cardinal
		* Ұ	* ¥	4	cardinal buoy, south	Do any of the paper chart double- cone topmarks need to be retained	topmarks are black in colour. Although I like the yellow colouring, it is not representative of the real
	A	* 🗶	* 🗶	Å	cardinal buoy, west	for non-cardinal mark purposes? If not, discard them. symbols are representative of symbols are representa- whole mark (structure and there is yellow in a compliant structure. P	world, and I think this needs to be taken into account, even though the symbols are representative of the whole mark (structure and topmark) and there is yellow in an IALA compliant structure. Perhaps this needs feedback from users?
	<u>Q?</u>		<b>Q</b> ?	⊙?	default symbol for buoy	Select the paper chart default buoy symbol; discard the simplified symbol.	Jonas: Agree but leave the question mark, alternatively use generic paper chart "conical buoy" symbol Wootton: Agree
	•	* 8	* 8	•	isolated danger buoy	Select the simplified isolated danger buoy symbol; discard the paper chart symbol. Do any of the paper chart double-sphere topmarks need to be retained for non-isolated danger mark purposes? If not, discard them.	Jonas: Agree, discard double sphere topmarks Wootton: See comments for cardinal marks above.

Buoy Symbology Beauty Contest (only one judge's opinion)

4		4	4	4	conical lateral buoy, green	<ul> <li>Jonas: Agree, no more buoy sha</li> <li>Wootton: Again, looking at this is regard to the real world – as an example in AU there are many la marks that are compliant with IA regard to the topmark, but in ord to save some money all the structures are painted grey. Haw such colour filled symbols (assum the colour is driven by the attribut colour-filled versions of other buoy symbols. Is there a need to create colour-filled versions of other buoy shapes, such as pillar, spar, spherical and barrel? If so, create these also.</li> <li>Reject all simplified lateral buoy symbols.</li> <li>Retain non-filled, paper chart conical and can buoy symbols for other non-</li> </ul>	Jonas: Agree, no more buoy shapes Wootton: Again, looking at this in regard to the real world – as an example in AU there are many lateral marks that are compliant with IALA in regard to the topmark, but in order	Jonas: Agree, no more buoy shapes Wootton: Again, looking at this in regard to the real world – as an example in AU there are many lateral marks that are compliant with IALA in regard to the topmark, but in order
4			4	4	conical lateral buoy, red		structures are painted grey. Having such colour filled symbols (assuming the colour is driven by the attribute CATLAM(?), although I do not know how this will work for IALA A and B) is not necessarily indicative of the real	
ā			ᇦ		can shape lateral buoy, green		world, and may cause confusion if one colour is shown on the ECDIS display and another is listed in the Pick Report. I don't know how technically possible this may be, but I would prefer to see the colour and shape of the buoy display in	
<b>L</b>			ᇦ		can shape lateral buoy, red	lateral purposes.	accordance with the value populated for the attribute COLOUR and BOYSHP (would probably result in a massive increase in the size of the look-up tables?). I can only agree to these if the look- up tables define these in accordance with BOYSHP and COLOUR	
	ቲ ይ የ	-	ቲ ይ ሁ	-	installation buoy and mooring buoy	Select the paper chart installation and mooring buoy symbols and discard the simplified symbol.	Jonas: Agree Wootton: Agree	

•		۲	**	•	safe water buoy	Create a unified safe water symbol that more closely matches the real- world object. A parallel new symbol for safe water beacon is also proposed. Currently the buoy and beacon symbols are quite different (red circle and black rectangle, respectively). Is the striped spar shape enough, or should separate striped symbols for the other shapes be created too? At a minimum a new striped spherical should probably be created. Discard the existing simplified safe water buoy.	Jonas: Agree, in addition new striped spherical type. Wootton: As for lateral marks above. In regard to Mathias comment – the shape displayed on the ECDIS should be driven by the attribute BOYSHP, and spar is also an allowably shape in IALA for a safe water mark. I don't know whether a spar mark symbol would allow for a red stripe down the middle of the symbol in ECDIS. Interestingly, the simplified symbol is consistent with the IALA topmark (red sphere).
С С		$\odot$	Ģ	$\overline{\mathbf{O}}$	special purpose buoy, spherical or barrel shaped, or default symbol for special purpose buoy		Jonas: Agree Wootton: As for lateral marks above.
4		$\overline{\mathbf{V}}$	4	<u> </u>	special purpose TSS buoy marking the starboard side of the traffic lane	Create separate yellow special purpose buoys. Discard simplified	Jonas: Agree Wootton: As for lateral marks above.
			ᇦ		special purpose TSS buoy marking the port side of the traffic lane	buoy symbols.	Jonas: Agree Wootton: As for lateral marks above.
		Ø	\$ <b>!</b>	Ø	special purpose ice buoy or spar or pillar shaped buoy		Jonas: Agree Wootton: As for lateral marks above.
	Ð	-	4	-	Super-buoy ODAS & LANBY	Select the paper chart super-buoy ODAS and LANBY symbols and discard the simplified symbol.	Jonas: Agree Wootton: This has been discussed at a previous meeting (not sure whether TSMAD or combined TSMAD/DIPWG) and the preference would be to have ODAS and LANBY display in accordance with the value populated for BOYSHP.

ца П	-	<b>U</b>	-	light float	Select the paper chart light float symbol and discard the simplified version.	Jonas: Agree Wootton: In the paper chart world, the selected (paper chart) symbol is indicative of a non-IALA light float (INT1 – Q30), and this symbol is now obsolescent. Would prefer to go with the simplified symbol, which is more consistent with the current paper chart (INT1) symbol.
帶	-	帶	-	light vessel	Select the paper chart light vessel symbol and discard the simplified version.	Jonas: Agree Wootton: There is no longer any distinction for paper charts between light floats and light vessels. Suggest the same symbol (light float) be used for both.

\* Paper chart symbols display the buoy or beacon shape symbol in addition to the topmark; simplified portrayal only displays the topmark. \*\* Several different paper chart symbols correspond to this simplified symbol.

<b>Beacon Symbology Beauty Contest</b>	: (only one judge's opinion)
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			Paper		Simplified Symbol		Your Review Comments for Change
Unified	Selected	Discarded	Chart	Simplified	Explanation	Description of Proposed Change	Enter "Agree" or "Disagree" and reason and/or alternative recommendation
	⋧	* 🛣	* 🛣	⋧	cardinal beacon, north		
	♦	* 🕈	* 🕈	♦	cardinal beacon, east	Select all simplified cardinal beacon topmark symbols. Do any of the paper chart double-cone	Jonas: Agree, discard all paper chart double-cone topmarks
	¥	* 🕇	∗¥	¥	cardinal beacon, south	topmarks need to be retained for non- cardinal mark purposes? If not, discard them.	Wootton: Same as for buoy comments above.
	X	* X	* X	X	cardinal beacon, west		
	<b>1</b> ?	•?	t?	•?	default symbol for a beacon	Select the paper chart default beacon symbol; discard the simplified symbol.	Jonas: Disagree, for consistency reasons use the simplified symbol instead and leave the question mark Wootton: Same as for buoy comments above.
	0		Ţ	0	isolated danger beacon	Select the simplified isolated danger beacon symbol; discard the paper chart symbol. Do any of the paper chart double-sphere topmarks need to be retained for non-isolated danger mark purposes? If not, discard them.	Jonas: Agree, discard all paper chart double-sphere topmarks Wootton: Same as for buoy comments above.
			4	•	major lateral beacon, red		
	•		A		minor lateral beacon, red	Select simplified major and minor	Jonas: Agree
	•			•	major lateral beacon, green	lateral beacon symbols.	comments above.
	•			•	minor lateral beacon, green		

0		•	-	major safe water beacon	Create new striped safe water beacon symbol to mimic new safe water buoy symbol. Discard existing simplified safe water beacon.	Jonas: Agree Wootton: Same as for buoy comments above.
		ł	ł	minor safe water beacon	Use the same major safe water beacon symbol for the minor beacon symbol, because stripes will be too hard to see on a thinner symbol. Discard existing simplified safe water beacon.	
	·		·	major special purpose beacon	Select simplified major and minor special purpose beacon symbols. Retain paper chart minor stake or	Jonas: Agree
	•		8	minor special purpose beacon	pole beacon, lattice beacon, and beacon tower symbols for other purposes.	<b>Wootton:</b> Same as for buoy comments above.

\* Paper chart symbols display the buoy or beacon shape symbol in addition to the topmark; simplified portrayal only displays the topmark.

### Daymark Symbology Beauty Contest (only one judge's opinion)

While reviewing this section, please consider that the US Coast Guard does not install top marks on lateral beacons. Square-green or red-triangular daymarks (or dayboards as they are called in the US) are used for lateral beacons for all of the 95,000 miles of the US coastline that falls in the IALA-B region. Those plying US waters are familiar with seeing a simple of the used to portray unlit lateral beacons. The addition of the green and red tinted daymarks proposed below would add an additional familiar indicator to for those navigating with US ENCs.

New Rule	Selected	Discarded	Paper Chart	Simplified	Simplified Symbol Explanation	Description of Proposed Change	Your Review Comments for Change Enter "Agree" or "Disagree" and reason and/or alternative recommendation
	₽		Ţ		square or rectangular daymark Select all paper chart daymark symbols and discard simplified	Jonas: Agree Wootton: Agree	
	<b>↓</b>	$\Diamond$	Ş	$\langle \rangle$	triangular daymark, point up	symbols. Using the paper chart daymarks with the simplified beacons will serve to raise the daymarks a bit and reduce the	Jonas: Agree Wootton: Agree
	Å	Y	Å	Y	triangular daymark, point down amount of overlap amongst these	Jonas: Agree Wootton: Agree	
<b>-</b>	μ	,	Ļ		square or rectangular daymark, red		Jonas: Agree Wootton: See comments for lateral buoys above. Can only agree if defined in look-up tables by COLOUR and TOPSHP.
4	□-¦	Ę.	7		square or rectangular daymark, green	Create four new daymark symbols for red and green square and red and green triangular daymarks.	Jonas: Agree Wootton: See comments for lateral buoys above. Can only agree if defined in look-up tables by COLOUR and TOPSHP.
		4	Ş		triangular daymark, point up, red		Jonas: Agree Wootton: See comments for lateral buoys above. Can only agree if defined in look-up tables by COLOUR and TOPSHP.

<b>▲</b>		$\triangleleft$	¢		triangular daymark, point up, green		Jonas: Agree Wootton: See comments for lateral buoys above. Can only agree if defined in look-up tables by COLOUR and TOPSHP.
	E Paper Chart	ш	ш	ш	retro reflector	Select paper chart retro reflector and discard simplified symbol.	Jonas: Agree Wootton: Note that there is no symbol in INT1 (Q6) for retroflective material. Is this intuitive to a mariner?

Review comment space for each new symbol is provided below. Symbols not specifically addressed in the "Beauty Contest Results" are shown in **bold text.** 

RN	Name	Simplified Symbol Explanation	Your Review Comments for Change Enter "Agree" or "Disagree" and reason and/or alternative recommendation
591.	SY(BCNSAW15)	major safe water beacon	Jonas: Agree Wootton: Agree to all [591-615] assuming that the symbology will be driven in the look-up tables by the combination of the attributes COLOUR and BOYSHP, as mentioned in comments for lateral buoys and beacons above.
592.	SY(BOYBAR15)	barrel buoy, red	Jonas: Agree
593.	SY(BOYBAR16)	barrel buoy, green	Jonas: Agree
594.	SY(BOYBAR17)	barrel buoy, yellow	Jonas: Agree
595.	SY(BOYCAN15)	can buoy, red	Jonas: Agree
596.	SY(BOYCAN16)	can buoy, green	Jonas: Agree
597.	SY(BOYCAN17)	can buoy, yellow	Jonas: Agree
598.	SY(BOYCON15)	conical buoy, red	Jonas: Agree
599.	SY(BOYCON16)	conical buoy, green	Jonas: Agree
600.	SY(BOYCON17)	conical buoy, yellow	Jonas: Agree
601.	SY(BOYPIL15)	pillar buoy, red	Jonas: Agree
602.	SY(BOYPIL16)	pillar buoy, green	Jonas: Agree
603.	SY(BOYPIL17)	pillar buoy, yellow	Jonas: Agree
604.	SY(BOYSAW15)	safe water buoy	Jonas: Agree
605.	SY(BOYSPH15)	spherical buoy, red	Jonas: Agree
606.	SY(BOYSPH16)	spherical buoy, green	Jonas: Agree
607.	SY(BOYSPH17)	spherical buoy, yellow	Jonas: Agree
608.	SY(BOYSPR02)	spar buoy	Jonas: Agree, preferred against RN 59
Note tha conflatio enabled new gen existing	t while all other ne n of the wider sim the addition of a w eric black symbol ( black spar buoy syr	ew symbols simply added colo plified symbol with the positic vide enough swath of colour to RN 608) is provided for consis mbol (RN 59) could be retaine	ur to existing symbols, the new spar buoy symbol is a re-engineered on circle from the paper-chart symbol added at the bottom. This b be clearly visible on the ECDIS display for symbols 609-611. The tency with the other colour filled spar buoys, but if desired the d instead.
609.	SY(BOYSPR15)	spar buoy, red	Jonas: Agree
610.	SY(BOYSPR16)	spar buoy, green	Jonas: Agree
611.	SY(BOYSPR17)	spar buoy, yellow	Jonas: Agree
612.	SY(DAYSQR15)	square or rectangular day mark, red	Jonas: Agree
613.	SY(DAYSQR16)	square or rectangular day mark, green	Jonas: Agree
614.	SY(DAYTRI15)	triangular day mark, point up, red	Jonas: Agree
615.	SY(DAYTRI16)	triangular day mark, point up, green	Jonas: Agree

ANNEX A to Paper-Chart / Simplified Symbology Consolidation Paper

### EXCERPT FROM

## **IHO S-52 PRESENTATION LIBRARY, PART I**

and

## ADDENDUM TO ANNEX A, PART I, USERS' MANUAL

EDITION 3.4 (2008)

**AUGMENTED WITH** 

## PAPER BASED DESCRIPTIONS OF PROPSED ADDITIONAL COLOUR-FILLED AID TO NAVIGATION SYMBOLS

## 23 DEC 2011



OUTLW CHRED CHGRN CHYLW

### 15.3 List of symbol names & meanings arranged numerically

Point symbols & centred area symbols (SY)

### <SNIP>

Symbols added since Edition 3.0

<u><SNIP></u>

590.	SY(AISATN01)	RESBLU	AIS based aid to navigation
591.	SY(BCNSAW15)	CHBLK CHRED OUTLW	major safe water beacon
592.	SY(BOYBAR15)	CHRED OUTLW	barrel buoy, red
593.	SY(BOYBAR16)	CHGRN OUTLW	barrel buoy, green
594.	SY(BOYBAR17)	CHYLW OUTLW	barrel buoy, yellow
595.	SY(BOYCAN15)	CHRED OUTLW	can buoy, red
596.	SY(BOYCAN16)	CHGRN OUTLW	can buoy, green
597.	SY(BOYCAN17)	CHYLW OUTLW	can buoy, yellow
598.	SY(BOYCON15)	CHRED OUTLW	conical buoy, red
599.	SY(BOYCON16)	CHGRN OUTLW	conical buoy, green
600.	SY(BOYCON17)	CHYLW OUTLW	conical buoy, yellow
601.	SY(BOYPIL15)	CHRED OUTLW	pillar buoy, red
602.	SY(BOYPIL16)	CHGRN OUTLW	pillar buoy, green
603.	SY(BOYPIL17)	CHYLW OUTLW	pillar buoy, yellow
604.	SY(BOYSAW15)	CHRED OUTLW	safe water buoy
605.	SY(BOYSPH15)	CHRED OUTLW	spherical buoy, red
606.	SY(BOYSPH16)	CHGRN OUTLW	spherical buoy, green
607.	SY(BOYSPH17)	CHYLW OUTLW	spherical buoy, yellow
608.	SY(BOYSPR02)	CHBLK	spar buoy
609.	SY(BOYSPR15)	CHRED OUTLW	spar buoy, red
610.	SY(BOYSPR16)	CHGRN OUTLW	spar buoy, green
611.	SY(BOYSPR17)	CHYLW OUTLW	spar buoy, yellow
612.	SY(DAYSQR15)	CHRED CHMGD	square or rectangular day mark, red
613.	SY(DAYSQR16)	CHGRN CHMGD	square or rectangular day mark, green
614.	SY(DAYTRI15)	CHRED CHMGD	triangular day mark, point up, red
615.	SY(DAYTRI16)	CHGRN CHMGD	triangular day mark, point up, green

Symbol Name:	SY(BCNCAR01)	RN:	16
Symbol Explanation:	cardinal beacon, north, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.00 3.05		
Width of Bounding Box: Height of Bounding Box:	4.02 6.12		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.3 mm		
Examples on ENC:	N/A		
References: S57 BCNCAR Q 130.3	INT 1		

Symbol Name:	SY(BCNCAR02)	RN:	17
Symbol Explanation:	cardinal beacon, east, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.00 3.30		
Width of Bounding Box: Height of Bounding Box:	4.00 6.60		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.3 mm		
Examples on ENC:	N/A		
References: S57 BCNCAR Q 130.3	INT 1		

Symbol Name:	SY(BCNCAR03)	RN:	18
Symbol Explanation:	cardinal beacon, south, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.00 3.05		
Width of Bounding Box: Height of Bounding Box:	4.00 6.10		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.3 mm		
Examples on ENC:	N/A		
References:			
BCNCAR 0 130 3			
BCNCAR Q 130.3			

Symbol Name:	SY(BCNCAR04)	RN:	19
Symbol Explanation:	cardinal beacon, west, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.00 3.05		
Width of Bounding Box: Height of Bounding Box:	4.00 6.10		
	F4.007		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.3 mm		
Examples on ENC:	N/A		
References:			
S57	INT 1		
BCNCAR Q 130.3			

SY(BCNDEF13)	RN:	20
default symbol for a beacon, simplified		
simplified point symbols		
1.03 2.18		
5.27 4.46		
5.27 		
CHMGD CHGRD OUTLW		
Line weight (question mark) 0.3 mm; line weight (question mark mm Line weight 0.3 mm Point diameter pm	dot) 0	.6
N/A		
INT 1		
	SY(BCNDEF13) default symbol for a beacon, simplified simplified point symbols 1.03 2.18 5.27 4.46 U U U U U U U U U U U U U	SY(BCNDEF13) RN: default symbol for a beacon, simplified simplified point symbols 1.03 2.18 5.27 4.46 f = f = f = f = f = f = f = f = f = f =

S57	IN	IT 1
BCNCAR	Q 130.3	
BCNLAT	Q 91-92;130.1	
BCNSPP	Q 120-125; 130.6	
BCNISD	Q 130.4	
BCNSAW	Q 130.5	

### Symbol Name:

### SY(BCNGEN01)

RN: 21

Symbol Explanation:	beacon in general, paper-chart
Look up table affected:	paper chart point symbols
Pivot Point Column: Pivot Point Row:	1.50 4.50
Width of Bounding Box: Height of Bounding Box:	3.00 5.15



Symbol Colours:



Comments:

Line weight 0.6 mm Circle diameter 1.3 mm

Examples on ENC:

N/A

S57	IN	Τ1
BCNCAR	Q 130.3	
BCNISD	Q 130.4	
BCNLAT	Q 91-92;130.1	
BCNSAW	Q 130.5	
BCNSPP	Q 120-125; 130.6	

### Symbol Name:

#### SY(BCNGEN03)

RN: 22

Symbol Explanation:

default symbol for beacon, paper-chart

Look up table affected:paper chart point symbolsPivot Point Column:1.50

Pivot Point Row: Width of Bounding Box:

Width of Bounding Box:5.93Height of Bounding Box:5.00



 $\ensuremath{\mathsf{Symbol}}$  Colours:

CHMGD CHBLK

N/A

4.46

Comments:

Line weight (question mark) 0.3 mm; line weight (question mark dot) 0.6 mm Line weight (beacon horizontal bar) 0.6 mm; Line weight (beacon vertical bar) 1.2 mm Circle diameter 1.08 mm

Examples on ENC:

### References:

S57	IN	Τ1
BCNCAR	Q 130.3	
BCNISD	Q 130.4	
BCNLAT	Q 91-92;130.1	
BCNSAW	Q 130.5	
BCNSPP	Q 120-125; 130.6	

Symbol Name:	SY(BCNISD21)	RN:	23
Symbol Explanation:	isolated danger beacon, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	1.12 2.69		
Width of Bounding Box: Height of Bounding Box:	2.22 5.44		
Symbol Colours:	OUTLW CHRED		
Comments:	Circle line weight 0.3 mm; circle diameter 2.2 mm		
Examples on ENC:	N/A		
References:	INT 1		
BCNISD Q 83; 130.4			

Symbol Name:	SY(BCNLAT15)		24	
Symbol Explanation:	major lateral beacon, red, simplified			
Look up table affected:	simplified point symbols			
Pivot Point Column: Pivot Point Row:	1.00 2.00			
Width of Bounding Box: Height of Bounding Box:	2.00 4.00			
Symbol Colours:	CHRED OUTLW			
Comments:	Line weight 0.3 mm Point diameter			
Examples on ENC: N/A				
References:				
S57	INT 1			
BCNLAT Q 130.1				

Symbol Name:	SY(BCNLAT16)		25
Symbol Explanation:	major lateral beacon, green, simplified		
Look up table affected:	simplified point symbols	simplified point symbols	
Pivot Point Column: Pivot Point Row:	1.00 2.00		
Width of Bounding Box: Height of Bounding Box:	2.00 4.00		
Symbol Colours:	CHGRN OUTLW		
Comments:	Line weight 0.3 mm Point diameter pm		
Examples on ENC:	N/A		
References:			
BCNLAT Q 130.1			

Symbol Name:	SY(BCNLAT21)		26
Symbol Explanation:	minor lateral beacon, red, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	0.66 2.51		
Width of Bounding Box: Height of Bounding Box:	1.33 5.00		
Symbol Colours:	OUTLW CHRED		
Comments:	Line weight 0.3 mm Point diameter		
Examples on ENC:	Examples on ENC: N/A		
References:			
557	INT 1		
BCNLAT Q 91-92 ;130.1			

Symbol Name:	SY(BCNLAT22)		27	
Symbol Explanation:	minor lateral beacon, green, simplified			
Look up table affected:	simplified point symbols	simplified point symbols		
Pivot Point Column: Pivot Point Row:	0.66 2.51			
Width of Bounding Box: Height of Bounding Box:	1.33 5.00			
Symbol Colours:	OUTLW CHGRN			
Comments:	Line weight 0.3 mm Point diameternm			
Examples on ENC:	N/A			
References:				
S57	INT 1			
BCNLAT Q 91-92 ;130.1				

Symbol Name:	SY(BCNLTC01)	RN:	28
Symbol Explanation:	lattice beacon, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	2.50 4.50		
Width of Bounding Box: Height of Bounding Box:	5.00 5.18		



Symbol Colours:

CHBLK

Comments:

Line weight 0.6 mm Circle diameter 1.36 mm

Examples on ENC:

N/A

References:				
S57	INT 1			
BCNCAR	Q 130.3			
BCNISD	Q 130.4			
BCNLAT	Q 91-92;130.1			
BCNSAW	Q 130.5			
BCNSPP	Q 130.6			
BCNxxx	Q 111			

Symbol Name:	SY(BCNSAW13) RN: 2		29	
Symbol Explanation:	major safe water beacon, simplified			
Look up table affected:	simplified point symbols			
Pivot Point Column: Pivot Point Row:	1.00 2.00			
Width of Bounding Box: Height of Bounding Box:	2.00 4.00			
Symbol Colours:	<ul> <li>CHBLK (outline)</li> <li>OUTLW</li> <li>DEPVS (fill colour of centred point)</li> </ul>			
Comments:	Line weight 0.3 mm Point diameter			
Examples on ENC:	N/A			
References:				
S57	INT 1			
DUNSAW Q 130.5				



Symbol Name:	SY(BCNSAW21)		30	
Symbol Explanation:	minor safe water beacon, simplified			
Look up table affected:	simplified point symbols			
Pivot Point Column: Pivot Point Row:	0.66 2.51			
Width of Bounding Box: Height of Bounding Box:	1.33 5.00			
Symbol Colours:	OUTLW (outline) CHBLK DEPVS (fill colour of centred point)			
Comments:	Line weight 0.3 mm Point diameter <mark></mark> nm			
Examples on ENC:	es on ENC: N/A			
References:				
S57	INT 1			
BCNSAW Q 130.5				

Symbol Name:	SY(BCNSPP13)		31
Symbol Explanation:	major special purpose beacon, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	1.00 2.00		
Width of Bounding Box: Height of Bounding Box:	2.00 4.00		
Symbol Colours:	CHYLW OUTLW		
Comments:	Line weight 0.3 mm Point diameternm		
Examples on ENC:	N/A		
References:	N <b>-</b> 7		
	INI 1		
BUNSPP Q 130.6			

Symbol Name:	SY(BCNSPP21)		32	
Symbol Explanation:	minor special purpose beacon, simplified			
Look up table affected:	simplified point symbols			
Pivot Point Column: Pivot Point Row:	0.66 2.51			
Width of Bounding Box: Height of Bounding Box:	1.33 5.00			
Symbol Colours:	OUTLW CHYLW			
Comments:	Line weight 0.3 mm Point diameternm			
Examples on ENC:	N/A			
References:				
S57 BCNSPP 0 130.6	INT 1			

Symbol Name:	SY(BCNSTK02)	RN:	33
Symbol Explanation:	minor, stake or pole beacon, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	1.25 4.51		
Width of Bounding Box: Height of Bounding Box:	2.50 4.51		
	2.50		



Symbol Colours:



Line weight 0.6 mm

Comments:

Examples on ENC:

N/A

References:

S57	INT 1	
BCNCAR	Q 130.3	
BCNISD	Q 130.4	
BCNLAT	Q 91-92;130.1	
BCNSAW	Q 130.5	
BCNSPP	Q 130.6	
# SY(BCNTOW01)

RN: 34

Symbol Explanation:beacon tower, paper-chartLook up table affected:paper chart point symbolsPivot Point Column:2.50Pivot Point Row:4.50Width of Bounding Box:5.00

Height of Bounding Box: 5.20



Symbol Colours:

CHBLK

Comments:

Line weight 0.6 mm Circle diameter 1.40 mm

Examples on ENC:

N/A

References:	
S57	INT 1
BCNCAR	Q 130.3
BCNISD	Q 130.4
BCNLAT	Q 91-92;130.1
BCNSAW	Q 130.5
BCNSPP	Q 130.6
BCNxxx	Q 110

# SY(BOYBAR01)

RN: 35

Symbol Explanation: barrel buoy, paper-chart

Look up table affected: paper chart point symbols

3.55

3.90

6.15

4.40

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



Symbol Colours:



Comments:

Line weight 0.6 mm Circle diameter 1.0 mm

Examples on ENC:

N/A

S57	IN	Τ1
BOYSPP	Q 25; 130.6	(Q 25)
		<u>ፍ</u>







## SY(BOYCAN01) Symbol Name: RN: Symbol Explanation: can buoy, paper-chart Look up table affected: paper chart point symbols Pivot Point Column: 2.88 Pivot Point Row: 3.35 Width of Bounding Box: 6.16 Height of Bounding Box: 3.94 6.16 4.75 -3.94

36

Symbol Colours:

OUTLW

N/A

Comments:

Line weight 0.6 mm Circle diameter 1.18 mm

Examples on ENC:

References:

S57	INT 1	
BOYLAT	Q 21; 130.1	
BOYSPP	Q 21; 130.6	(Q 130.6)
		L <sup>™</sup> <sub>Y</sub>

5.70



•••		
BOYLAT	Q 21; 130.1	
BOYSPP	Q 21; 130.6	(Q 130.6)
		$P_{\tilde{Y}}$





SOYLAT	Q 21; 130.1	
BOYSPP	Q 21; 130.6	(Q 130.6)
		D Y

Symbol Name:	SY(BOYCAR01)	RN:	37
Symbol Explanation:	cardinal buoy, north, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.66 3.13		
Width of Bounding Box: Height of Bounding Box:	4.16 6.16		
Symbol Colours:	CHYLW OUTLW		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References: S57	INT 1		
BOYCAR Q 130.3			

Symbol Name:	SY(BOYCAR02)	RN:	38
Symbol Explanation:	cardinal buoy, east, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	1.80 3.30		
Width of Bounding Box: Height of Bounding Box:	3.65 6.60		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:	INT 1		
BOYCAR Q 130.3			

Symbol Name:	SY(BOYCAR03)	RN:	39
Symbol Explanation:	cardinal buoy, south, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	1.20 3.05		
Width of Bounding Box: Height of Bounding Box:	4.15 6.10		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:			
S57 BOYCAR 0 130 3	INI 1		

Symbol Name:	SY(BOYCAR04)	RN:	40
Symbol Explanation:	cardinal buoy, west, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	3.05 3.05		
Width of Bounding Box: Height of Bounding Box:	6.07 6.10		
Symbol Colours:	OUTLW CHYLW		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:			
S57 BOYCAR O 130 3	INT 1		

#### SY(BOYCON01)

RN: 41

Symbol Explanation: conical buoy, paper-chart

Look up table affected: paper chart point symbols

2.88

4.38

5.75

4.94

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



 $\ensuremath{\texttt{Symbol}}$  Colours:

CHBLK

N/A

Comments:

Line weight 0.6 mm Circle diameter 1.12 mm

Examples on ENC:

 References:

 S57
 INT 1

 BOYCAR
 Q 130.3

 BOYISD
 Q 130.4

 BOYLAT
 Q 130.1

 BOYSPP
 Q 130.6

 BOYXxxx
 Q 20; 50-57; 59; 60; 62; 70; 71

 Image: Additional colors of the second color



BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSPP	Q 130.6	
BOYxxx	Q 20; 50-57; 59; 60; 62; 70; 71	(Q 20)
		A



BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSPP	Q 130.6	
BOYxxx	Q 20; 50-57; 59; 60; 62; 70; 71	(Q 20)
		A



1101010100001		
S57	INT 1	
BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSPP	Q 130.6	
BOYxxx	Q 20; 50-57; 59; 60; 62; 70; 71	(Q 20)
		4

Symbol Name:	SY(BOYDEF03)	RN:	42
Symbol Explanation:	default symbol for buoy, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.03 2.26		
Width of Bounding Box: Height of Bounding Box:	7.21 4.43		
	2.03 (2.20)		
Symbol Colours:	CHMGD CHGRD OUTLW		
Comments:	Line weight (question mark) 0.3 mm; line weight (question mark mm Line weight 0.3 mm Circle diameter 4.06 mm; circle filled Point diameter	dot) 0	.6

Examples on ENC:

References:

S57	IN	IT 1
BOYCAR	Q 130.3	
BOYLAT	Q 130.1	

N/A

Symbol Name:	SY(BOYGEN03)	RN:	43
Symbol Explanation:	default symbol for buoy, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	2.66 4.21		
Width of Bounding Box: Height of Bounding Box:	7.65 4.74		
Symbol Colours:	CHMGD CHBLK		
Comments:	Line weight (question mark) 0.3 mm; line weight (question mark mm Line weight 0.6 mm Circle diameter 3.46 mm; circle diameter 1.1 mm	( dot) 0	.6
Examples on ENC:	N/A		

References:		
S57		INT 1
BOYCAR	Q 130.3	
BOYISD	Q 130.4	Body black with red homontal bund(s) Topmer. 2 black spheres BSB $BSBBSB$ $F(2)$ while hight
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	Body: red and whate vertical strapes Topmark (if any): red sphere $\begin{array}{c} & & & \\ & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & &$

BOYSPP	Q 130.6	Body (shape optional) : yellow Top[mack (if any) : yellow X $\overrightarrow{Y} \qquad \overrightarrow{Y} \qquad \overrightarrow{Y} \qquad \overrightarrow{Y}$
		FLY yellow light TRY TRY TRY Travial cases yellow can be an computation with another colour

Symbol Name:	SY(BOYINB01)	RN:	44
Symbol Explanation:	installation buoy, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	4.29 4.34		
Width of Bounding Box: Height of Bounding Box:	8.57 4.99		
	8.57 		
Symbol Colours:	CHBLK		
Comments:	Line weight 0.6 mm Upper circle diameter 1.42 mm Lower circle diameter 1.3 mm		

Examples on ENC:

N/A

S57	IN	IT 1
BOYINB	L 16	
		<b>*</b>

Symbol Name:	SY(BOYISD12)	RN:	45
Symbol Explanation:	isolated danger buoy, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	1.88 2.71		
Width of Bounding Box: Height of Bounding Box:	3.84 5.44		
	3.84 		
Symbol Colours:	OUTLW CHRED		
Comments:	Line weight 0.3 mm Circle diameter 2.2 mm		

Examples on ENC:

N/A

S57	IN	IT 1
BOYISD	Q 130.4	Body black with red homostal band(s) Topmer: 2 black spheres $J_{BBB}$ $J_{BBB}$ $J_{BBB}$ $J_{BBB}$ $J_{BBB}$ $J_{BBB}$



Symbol Name:	SY(BOYLAT14)	RN:	47
Symbol Explanation:	conical lateral buoy, red, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	3.09 2.97		
Width of Bounding Box: Height of Bounding Box:	4.33 4.39		
Symbol Colours:	CHRED OUTLW		
Comments:	Line weight 0.3 mm Point diameternm		
Examples on ENC:	N/A		
References:			
DUTLAI Q 130.1			

Symbol Name:	SY(BOYLAT23)	RN:	48
Symbol Explanation:	can shape lateral buoy, green, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	2.75 1.91		
Width of Bounding Box: Height of Bounding Box:	5.28 3.99		
	5.28		



### SY(BOYLAT24)

RN: 49

Symbol Explanation:can shape lateral buoy, red, simplifiedLook up table affected:simplified point symbolsPivot Point Column:2.75Pivot Point Row:1.91Width of Bounding Box:5.28Height of Bounding Box:4.00



References:	

S57	IN	Τ1
BOYLAT	Q 130.1	

Symbol Name:	SY(BOYMOR01)		
Symbol Explanation: mooring buoy, barrel shape, paper-chart			
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	3.45 5.20		
Width of Bounding Box: Height of Bounding Box:	6.10 5.80		
	6.10 11111111111 3.00 0.80		
Symbol Colours:	CHBLK		
Comments: Line weight 0.6 mm Upper circle diameter 1.3 mm Lower circle diameter 1.2 mm			
Examples on ENC:	N/A		
References:	INT 1		

S57	I IN	Τ1
MORFAC	Q 40-43	Q 40
		ക് ക്

Symbol Name:	SY(BOYMOR03)	RN:	51
Symbol Explanation:	mooring buoy, can shape, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	2.85 4.91		
Width of Bounding Box: Height of Bounding Box:	6.16 5.56		
	6.16 		

Symbol Colours:



N/A

Comments:

Line weight 0.6 mm Upper circle diameter 1.5 mm Lower circle diameter 1.3 mm

Examples on ENC:

S57		INT 1
MORFAC	Q 40-43	Q 40

Symbol Name:	SY(BOYMOR11)		
Symbol Explanation:	installation buoy and mooring buoy, simplified		
Look up table affected:	paper chart point symbols simplified point symbols		
Pivot Point Column: Pivot Point Row:	3.80 1.75		
Width of Bounding Box: Height of Bounding Box:	7.59 3.50		
	$ \begin{array}{c}                                     $		
Symbol Colours:	CHBLK		
Comments:	Line weight 0.3 mm Point diameter 2.02 mm		
Examples on ENC:	N/A		
References:			
S57	INT 1		
BOYINB L 16	\$		

MORFAC

Q 40-43

# SY(BOYPIL01)

RN: 53

Symbol Explanation: pillar buoy, paper-chart

Look up table affected: paper chart point symbols

3.07

4.32

5.97

4.91

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



 $\ensuremath{\mathsf{Symbol}}$  Colours:

CHBLK

Comments:

Line weight 0.6 mm Circle diameter 1.18 mm

Examples on ENC:

N/A

S57	INT 1	
BOYxxx	Q 23	4
BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	
BOYSPP	Q 130.6	

Symbol Name:	SY(BOYPIL15)	RN: 601
Symbol Explanation:	pillar buoy, red	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	3.07 4.32	
Width of Bounding Box: Height of Bounding Box:	5.97 4.91	
Symbol Colours:	OUTLW CHRED	
Comments:	Line weight 0.6 mm Circle diameter 1.18 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
BOYxxx Q 23	<i>n</i>	

BOYxxx	Q 23	1
BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	
BOYSPP	Q 130.6	



S57	INT 1	
BOYxxx	Q 23	A
BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	
BOYSPP	Q 130.6	



S57	INT 1	
BOYxxx	Q 23	4
BOYCAR	Q 130.3	
BOYISD	Q 130.4	
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	
BOYSPP	Q 130.6	





Line weight 0.6 mm

Circle diameter 1.18 mm

# SY(BOYSPH01)

RN: 55

Symbol Explanation: spherical buoy, paper-chart

Look up table affected:paper chart point symbolsPivot Point Column:2.78

4.38

Pivot Point Row: Width of Bounding Box:

Width of Bounding Box:5.65Height of Bounding Box:4.91



 $\ensuremath{\texttt{Symbol}}$  Colours:

CHBLK

Comments:

Line weight 0.6 mm Circle diameter 1.06 mm

N/A

Examples on ENC:

S57	INT 1		
BOYxxx	Q 22	Q	
BOYSAW	Q 130.5	Q. RW	
BOYSPP	Q 130.6		
Symbol Name:		SY(BOYSPH15)	RN: 605
------------------------------------	------------------------	---	---------
Symbol Explan	ation:	spherical buoy, red	
Look up table a	affected:	paper chart point symbols	
Pivot Point Col Pivot Point Rov	umn: w:	2.78 4.38	
Width of Bound Height of Bound	ling Box: ding Box:	5.65 4.91	
		5.65 	
Symbol Colours:		OUTLW CHRED	
Comments:		Line weight 0.6 mm Circle diameter 1.06 mm	
Examples on ENC:		N/A	
References:			
S57		INT 1	
BOYxxx	Q 22		

BOYxxx	Q 22	Q
BOYSAW	Q 130.5	
BOYSPP	Q 130.6	

Symbol Name:	SY(BOYSPH16)	RN: 606
Symbol Explanation:	spherical buoy, green	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	2.78 4.38	
Width of Bounding Box: Height of Bounding Box:	5.65 4.91	
	5.65 	
Symbol Colours:	OUTLW CHGRN	
Comments:	Line weight 0.6 mm Circle diameter 1.06 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
BOYxxx Q 22	0	

BOYxxx	Q 22	Q
BOYSAW	Q 130.5	Q. RW
BOYSPP	Q 130.6	

Symbol Name:	SY(BOYSPH17)	RN: 607
Symbol Explanation:	spherical buoy, yellow	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	2.78 4.38	
Width of Bounding Box: Height of Bounding Box:	5.65 4.91	
Symbol Colours:	OUTLW CHYLW	
Comments:	Line weight 0.6 mm Circle diameter 1.06 mm	
Examples on ENC:	N/A	
References:	INT 1	

S57	IN	IT 1
BOYxxx	Q 22	Q
BOYSAW	Q 130.5	Q. RW
BOYSPP	Q 130.6	



S57		INT 1
BOYSPP	Q 50-57; 59; 62; 70; 71; 130.6	Q 130.6
		Body (shape optional) : yellow Top[mark (if any) : yellow X $\overrightarrow{Y}$



BOYSPP	Q 130.6	Body (shape optional) : yellow Top[mark (if any) : yellow X X X X X X X X Y Y Y Y Y Y Y Y
		FLY  vert  vert



YRY

+ In special cases yellow can be in conjunction with another colour



References:	
-------------	--

S57	INT	T1
BOYSPP	Q 130.6	Body (shape optional) : yellow Top[mark (if any) : yellow X Y $Y$ $Y$ $YY$ $Y$ $Y$ $Y$ $YFI.Y$ yellow light $\downarrow$ $YRY$ $\downarrow$ In special cases yellow can be in conjunction with another colour

Symbol Name:	SY(BOYSPR01)	RN:	59
Symbol Explanation:	spar buoy, paper-chart		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	1.47 4.32		
Width of Bounding Box: Height of Bounding Box:	2.87 4.91		



Symbol Colours:



Comments:

Г

Line weight 0.6 mm Circle diameter 1.18 mm

Examples on ENC:

N/A

S57	INT 1	
BOYxxx	Q 24	1
BOYCAR	Q 130.3	
BOYISD	Q 130.4	DRB
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	Î RW
BOYSPP	Q 130.6	

Symbol Name:	SY(BOYSPR02)	RN: 608
Symbol Explanation:	spar buoy	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	1.47 4.32	
Width of Bounding Box: Height of Bounding Box:	2.87 4.91	
	<ul> <li>3.69 →</li> <li>1.45 ←</li> <li>67 →</li> <li>78 →</li> <li>71 →</li></ul>	

Symbol Colours:

CHBLK

N/A

Comments:

Line weight 0.6 mm Circle diameter 1.18 mm

Examples on ENC:

-			
Rei	ford	nnc	00.
110	- <b>C</b>   <b>C</b>	7110	<b>CO</b> .

S57	INT 1	
BOYxxx	Q 24	1
BOYCAR	Q 130.3	
BOYISD	Q 130.4	BRB
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	RW
BOYSPP	Q 130.6	

Symbol Nam	e:	SY(BOYSPR15)	RN: 609
Symbol Expla	anation:	spar buoy, red	
Look up table	e affected:	paper chart point symbols	
Pivot Point C Pivot Point R	olumn: .ow:	1.47 4.32	
Width of Bou Height of Bou	nding Box: unding Box:	2.87 4.91	
		5.09 11 13 145 145 145 145 145 145 145 145	
Symbol Col	ours:	OUTLW CHRED	
Comments:		Line weight 0.6 mm Circle diameter 1.18 mm	
Examples on	ENC:	N/A	
References:			
S57		INT 1	
BOYxxx	Q 24	l	
BOYCAR	Q 130.3		
BOYISD	Q 130.4	BRB	

**Å** RW

BOYLAT BOYSAW

BOYSPP

Q 130.1 Q 130.5

Q 130.6

Symbol Name:	SY(BOYSPR16)	RN: 610
Symbol Explanation:	spar buoy, green	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	1.47 4.32	
Width of Bounding Box: Height of Bounding Box:	2.87 4.91	
Symbol Colours:	OUTLW CHGRN	
Comments:	Line weight 0.6 mm Circle diameter 1.18 mm	
Examples on ENC:	N/A	
References:		
<u>\$57</u>	INI 1	
BOYxxx Q 24		

BUTXXX	Q 24	1
BOYCAR	Q 130.3	
BOYISD	Q 130.4	j BRB
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	C Riff
BOYSPP	Q 130.6	

Symbol Name:	SY(BOYSPR17)	RN: 611
Symbol Explanation:	spar buoy, yellow	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	1.47 4.32	
Width of Bounding Box: Height of Bounding Box:	2.87 4.91	
	11 130 1445 16 1 10 1 1 130 1445 1 1 1 1 1 1 1 1 1 1 1 1 1	
Symbol Colours:	OUTLW CHYLW	
Comments:	Line weight 0.6 mm Circle diameter 1.18 mm	
Examples on ENC:	N/A	
References:		
QE7		

S57	INT 1	
BOYxxx	Q 24	I
BOYCAR	Q 130.3	
BOYISD	Q 130.4	j BRB
BOYLAT	Q 130.1	
BOYSAW	Q 130.5	RW
BOYSPP	Q 130.6	

# Symbol Name:

#### SY(BOYSUP01)

RN: 60

Symbol Explanation: super-buoy, paper-chart

Look up table affected: paper chart point symbols

4.29

4.75

8.57

5.40

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



Symbol Colours:



N/A

Comments:

Line weight 0.6 mm Circle diameter 1.3 mm

Examples on ENC:

S57	INT 1	
BOYxxx	Q 26; 130.1; 130.3; 130.4; 130.5; 130.6	(Q 26)
		*

Symbol Name:	SY(BOYSUP02)		61
Symbol Explanation:	super-buoy ODAS & LANBY, simplified		
Look up table affected:	simplified point symbols		
Pivot Point Column: Pivot Point Row:	3.84 2.38		
Width of Bounding Box: Height of Bounding Box:	7.67 4.75		
	7.67 		
Symbol Colours:	CHBLK		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:			

S57	INT 1	
BOYSPP	Q 26, 58, 130.6	(Q 26)
		Ϋ́

### Symbol Name:

#### SY(BOYSUP03)

RN: 62

Symbol Explanation:

LANBY, super-buoy, paper-chart

paper chart point symbols

4.32

5.72

8.57

6.31

Look up table affected:

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



Symbol Colours:

CHBLK

Comments:

Line weight 0.6 mm Circle diameter 1.18 mm

Examples on ENC:

N/A

S57	INT 1	
BOYSPP	Q 26, 130.6	(Q 26)
		Ϋ́

Symbol Name:		SY(DAYSQR01)	RN:	100
Symbol Expla	nation:	square or rectangular day mark, simplified		
Look up table	affected:	simplified point symbols		
Pivot Point Co Pivot Point Ro	blumn: bw:	2.04 3.99		
Width of Bour Height of Bou	nding Box: nding Box:	4.01 5.83		
Symbol Colou	Irs:	CHMGD		
Comments:		Line weight 0.3 mm; point diameter 1.3 mm		
Examples on ENC:		N/A		
References:				
S57		<u>INT 1</u>		
DAYMAR	Q 101			

Symbol Name:		SY(DAYSQR21)	RN: 101
Symbol Expla	nation:	square or rectangular day mark, paper chart	
Look up table	affected:	paper chart point symbols	
Pivot Point Co Pivot Point Ro	lumn: w:	1.98 6.20	
Width of Boun Height of Bour	ding Box: nding Box:	4.01 6.83	
		₹4.01 '''''''' \$99       	
Symbol Colou	rs:	CHMGD	
Comments:		Line weight 0.3 mm; circle diameter 1.3 mm	
Examples on ENC:		N/A	
References:			
S57		<u>INT 1</u>	
DAYMAR	Q 101	Пик	

Symbol Name:	SY(DAYSQR15) RN: 67	
Symbol Explanation:	square or rectangular day mark, red	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	1.98 6.20	
Width of Bounding Box: Height of Bounding Box:	4.01 6.83	
	4.01 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
Symbol Colours:	CHMGD CHRED	
Comments:	Line weight 0.3 mm; circle diameter 1.3 mm	
Examples on ENC:	N/A	
References:		
S57	<u>INT 1</u>	
DAYMAR Q 101	МК	



Symbol Name:	SY(DAYTRI01)	RN: 102
Symbol Explanation:	triangular day mark, point up, simplified	
Look up table affecte	d: simplified point symbols	
Pivot Point Column: Pivot Point Row:	2.49 4.01	
Width of Bounding Bo Height of Bounding B	ox: 5.00 ox: 6.01	
Symbol Colours:	CHMGD	
Comments:	Line weight 0.3 mm; point diameter 1.3 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
DAYMAR Q 101	П МК	

Symbol Name:		SY(DAYTRI05)	RN:	103
Symbol Explai	nation:	triangular day mark, point down, simplified		
Look up table	affected:	simplified point symbols		
Pivot Point Co Pivot Point Ro	lumn: w:	2.50 3.95		
Width of Boun Height of Bour	of Bounding Box: 5.03 of Bounding Box: 6.07			
Symbol Colou	rs:	CHMGD		
Comments:		Line weight 0.3 mm; point diameter 1.3 mm		
Examples on ENC:		N/A		
References:				
S57	_	INT 1		
DAYMAR	Q 101	🗌 мк		

L

Symbol Name:		SY(DAYTRI21)	RN: 104
Symbol Explanation:		triangular day mark, point up, paper chart	
Look up table	affected:	paper chart point symbols	
Pivot Point Co Pivot Point Ro	blumn: bw:	2.48 6.63	
Width of Boun Height of Boun	iding Box: nding Box:	5.00 7.27	
Symbol Colou	irs:	CHMGD	
Comments:		Line weight 0.3 mm; circle diameter 1.3 mm	
Examples on ENC:		N/A	
References:			
S57		INT 1	
DAYMAR	Q 101	МК	

Symbol Name:		SY(DAYTRI15)	RN:	614
Symbol Expla	nation:	triangular day mark, point up, red		
Look up table	affected:	paper chart point symbols		
Pivot Point Co Pivot Point Ro	blumn: bw:	2.48 6.63		
Width of Boun Height of Bour	iding Box: nding Box:	5.00 7.27		
Symbol Colours:		CHMGD CHRED		
Comments:		Line weight 0.3 mm; circle diameter 1.3 mm		
Examples on ENC:		N/A		
References:				
S57		INT 1		
DAYMAR	Q 101	МК		

Symbol Name:	SY(DAYTRI16)		615
Symbol Explanation:	triangular day mark, point up, green		
Look up table affected:	paper chart point symbols		
Pivot Point Column: Pivot Point Row:	2.48 6.63		
Width of Bounding Box: Height of Bounding Box:	5.00 7.27		
Symbol Colours:	CHMGD CHGRN		
Comments:	Line weight 0.3 mm; circle diameter 1.3 mm		
Examples on ENC:	N/A		
References:			
S57	INT 1		
DAYMAR Q 101	МК		

Symbol Name:	SY(DAYTRI25)	RN: 105
Symbol Explanation:	triangular day mark, point down, paper chart	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	2.51 5.86	
Width of Bounding Box: Height of Bounding Box:	of Bounding Box: 5.03 It of Bounding Box: 6.49	
	64.9 	
Symbol Colours:	CHMGD	
Comments:	Line weight 0.3 mm; circle diameter 1.3 mm	
Examples on ENC:	N/A	
References:		
557	INI 1	
DAYMAR Q 101	Пик	

Symbol Name:	SY(LITFLT01) RN: 158			
Symbol Explanation:	light float, paper-chart			
Look up table affected:	paper chart point symbols			
Pivot Point Column: Pivot Point Row:	4.50 2.50			
Width of Bounding Box: Height of Bounding Box:	9.00 3.22			
	9.00 9.00 1.100 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.000 9.000 9.00 9.000 9.00 9.000 9.00 9.000			
Symbol Colours:	CHBLK			
Comments:	Line weight 0.6 mm			
Examples on ENC:	N/A			
References:				
557 LITELT 0.30-31	INT 1 (Q 30)			
	(Q 00) $Fl G.3c$ $Mame$ $(Q 31)$ $Fl 10c 12m 26M$			

Symbol Name:	SY(LITFLT02)	RN: 159
Symbol Explanation:	light float, simplified	
Look up table affected:	simplified point symbols	
Pivot Point Column: Pivot Point Row:	3.07 1.12	
Width of Bounding Box: Height of Bounding Box:	6.13 2.24	
	6.13 $2.03$ $0.45$ $0.45$ $0.95$	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.3 mm	
Examples on ENC:	N/A	
References:		

S57	IN	IT 1
LITFLT	Q 30-31	(Q 30) FI G 3s Name (Q 31) FI 10s 12m 26M

Symbol Name:	SY(LITVES01)	RN: 160
Symbol Explanation:	light vessel, paper-chart	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	4.50 6.00	
Width of Bounding Box: Height of Bounding Box:	9.00 6.70	
	9.00 9.00	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm; circle diameter 1.4 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
LITVES P 6	Liv Liv	

Symbol Name:	SY(LITVES02)	RN: 161
Symbol Explanation:	light vessel, simplified	
Look up table affected:	simplified point symbols	
Pivot Point Column: Pivot Point Row:	3.72 1.82	
Width of Bounding Box: Height of Bounding Box:	7.45 3.64	
	45 45 45 45 45 45 45 45 45 45	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.3 mm	
Examples on ENC:	N/A	
References:	INT 1	
LITVES P 6		

Symbol Name:	SY(PRICKE03)	RN: 200
Symbol Explanation:	withy, port-hand, paper-chart	
Look up table affected:	paper chart point symbols	
Pivot Point Column: Pivot Point Row:	1.25 4.35	
Width of Bounding Box: Height of Bounding Box:	2.93 4.35	
	$\begin{array}{c} 2.93 \\ 2.93 \\ 1.1111 \\ 1.80 \\ $	
Symbol Colours:	CHBLK	
Pattern:	N/V	
Comments:	Line weight 0.3 mm	
Examples on ENC:	N/V	

S57	IN	Τ1
BCNLAT	Q 92	<b>华</b>

# Symbol Name:

# SY(PRICKE04)

RN: 201

Symbol Explanation:

withy, starboard-hand, paper-chart

paper chart point symbols

1.41

4.44

2.53

4.44

Look up table affected:

Pivot Point Column: Pivot Point Row:

Width of Bounding Box: Height of Bounding Box:



Symbol Colours:	CHBLK
Pattern:	N/V
Comments:	Line weight 0.3 mm
Examples on ENC:	N/V

S57	IN	Τ1
BCNLAT	Q 92	<b>ŧ</b>

Symbol Name:	SY(TMARDEF1)	RN: 370
Symbol Explanation:	topmark for beacons, flag or other shape, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	0.08 9.37	
Width of Bounding Box: Height of Bounding Box:	0.00 3.47	
	3.47	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References: S57 TOPMAR 0.2-5.9.10.82	INT 1	

Symbol Name:	SY(TMARDEF2)	RN: 371
Symbol Explanation:	topmark for buoys, flag or other shape, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.67 8.66	
Width of Bounding Box: Height of Bounding Box:	1.36 3.64	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:           S57           TOPMAR         Q 2-5, 9, 11, 30	INT 1	

Symbol Name:	SY(TOPMAR02)	RN: 377
Symbol Explanation:	topmark for buoys, cone point up, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.10 6.75	
Width of Bounding Box: Height of Bounding Box:	2.10 1.65	
	2.10	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References:		
S57	INT 1	

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307		
TOPMAR	Q 2-5, 9, 11, 30, 130.1	(Q 9)
		A A

Symbol Name:	SY(TOPMAR04)	RN: 378
Symbol Explanation:	topmark for buoys, cone point down, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.45 6.85	
Width of Bounding Box: Height of Bounding Box:	2.20 1.55	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References:		
TOPMAR Not specified		

Symbol Name:		SY(TOPMAR05) RN: 379	
Symbol Explan	ation:	topmark for buoys, 2 cones point upward, paper-chart	
Called by CSP	etc ·	CSP TOPMAR01	
Pivot Point Col Pivot Point Rov	umn: v:	-0.10 9.25	
Width of Bound Height of Bound	ling Box: ding Box:	2.75 4.05	
		2.75 	
Symbol Colours	s:	CHBLK	
Comments:		N/A	
Examples on E	NC:	N/A	
References:		INT 1	
TOPMAR	Q 2-5, 9, 11, 130	0.3 (Q 9)	
Symbol Name:	SY(TOPMAR06)	RN:	380
---	--	-----	-----
Symbol Explanation:	topmark for buoys, 2 cones point downward, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	-0.45 9.05		
Width of Bounding Box: Height of Bounding Box:	2.80 3.70		
Symbol Colours:	CHBLK		
Comments:	N/A		
Examples on ENC:	N/A		
References:			
S57	INT 1		
Q 2-5, 9, 11, 30	0, 130.3 (Q 9) ✓		

Symbol Name	9:	SY(TOPMAR07)	RN: 381
Symbol Expla	nation:	opmark for buoys, 2 cones base to base, paper-cl	hart
Look up table	affected:	N/A	
Called by CSF	P etc.:	CSP TOPMAR01	
Pivot Point Co Pivot Point Ro	blumn: bw:	0.45 9.15	
Width of Bour Height of Bou	nding Box: nding Box:	2.40 3.95	
		3.95 	
Symbol Colou	Irs:	CHBLK	
Comments:		N/A	
Examples on	ENC:	N/A	
References:			
S57		INT 1	
TOPMAR	Q 2-5, 9, 11, 30	130.3 (Q 9)	

Symbol Name:	SY(TOPMAR08)	RN: 382
Symbol Explanation:	topmark for buoys, 2 cones point to point, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.05 9.05	
Width of Bounding Box: Height of Bounding Box:	3.30 3.85	
	$\begin{array}{c} 3.30 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ $	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References:		
S57	INT 1	

S57	IN	F 1
TOPMAR	Q 2-5, 9, 11, 30, 130.3	(Q 9)
		¥.

Symbol Name:	SY(TOPMAR10)	RN:	383
Symbol Explanation:	topmark for buoys, sphere, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	-0.35 6.95		
Width of Bounding Box: Height of Bounding Box:	1.80 1.80		
Symbol Colours:	CHBLK		
Comments:	Point diameter 1.8 mm		
Examples on ENC:	N/A		
References:			
S57	INT 1		

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Symbol Name	:	SY(TOPMAR12)	RN: 384
Symbol Explar	nation:	topmark for buoys, 2 spheres, paper-chart	
Look up table	affected:	N/A	
Called by CSF	etc.:	CSP TOPMAR01	
Pivot Point Co Pivot Point Ro	lumn: w:	-0.40 9.15	
Width of Boun Height of Bour	ding Box: nding Box:	2.20 4.00	
Symbol Colou	rs:	CHBLK	
Comments:		Point diameter 1.8 mm	
Examples on E	ENC:	N/A	
References:			
S57		INT 1	
TOPMAR	Q 2-5, 9, 11, 30,	130.4 (Q 9)	

Symbol Name:	SY(TOPMAR13)	RN: 385
Symbol Explanation:	topmark for buoys, cylinder, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.30 7.45	
Width of Bounding Box: Height of Bounding Box:	2.15 2.20	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
TOPMAR Q 2-5, 9, 11, 3	0, 130.1 (Q 9)	
	· ·	

Symbol Name:	SY(TOPMAR14)	RN:	386
Symbol Explanation:	topmark for buoys, board, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	-0.10 6.70		
Width of Bounding Box: Height of Bounding Box:	2.40 1.40		
Symbol Colours:	CHBLK		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:			
TOPMAR Not specified	INI 1		

Symbol Name:	SY(TOPMAR16)	RN: 387
Symbol Explanation:	topmark for buoys, cube point up, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	-0.30 7.05	
Width of Bounding Box: Height of Bounding Box:	2.05 1.95	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:S57TOPMARNot specified	INT 1	

Symbol Name:		SY(TOPMAR17)	RN:	388
Symbol Explan	ation:	topmark for buoys, flag or other shape, paper-chart		
Look up table a	affected:	N/A		
Called by CSP	etc.:	CSP TOPMAR01		
Pivot Point Col Pivot Point Rov	umn: v:	0.85 7.60		
Width of Bound Height of Bound	ling Box: ding Box:	4.21 2.63		
		$ \begin{array}{c}                                     $		
Symbol Colours	s:	CHBLK		
Comments:		Line weight 0.6 mm		
Examples on E	NC:	N/A		
References:				
55/	NI / 101 1	INT 1		
TOPMAR	Not specified			

Symbol Name	:	SY(TOPMAR18)	RN:	389
Symbol Explar	nation:	topmark for buoys, T-Shape, paper-chart		
Look up table	affected:	N/A		
Called by CSF	etc.:	CSP TOPMAR01		
Pivot Point Co Pivot Point Ro	lumn: w:	0.52 7.60		
Width of Boun Height of Bour	ding Box: nding Box:	4.21 2.63		
		4.21 $-$ $6.9$ $-$ $-$ $-$ $-$ $-$ $-$ $-$ $-$ $-$ $-$		
Symbol Colou	rs:	CHBLK		
Comments:		Line weight 0.6 mm		
Examples on B	ENC:	N/A		
S57		INT 1		
TOPMAR	Not specified			

Symbol Name:	SY(TOPMAR22)	RN:	390
Symbol Explanation:	topmark for beacons, cone point up, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	1.10 7.30		
Width of Bounding Box: Height of Bounding Box:	2.20 1.75		
Symbol Colours:	CHBLK		
Pattern	N/A		
Comments:	N/A		
Examples on ENC:	N/A		
References:			

S57		INT 1
TOPMAR	Q 2-5, 9, 10, 82, 110, 130.1	(Q 2)
		g g

Symbol Name:	SY(TOPMAR24)	RN: 391
Symbol Explanation:	topmark for beacons, cone point down, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 7.20	
Width of Bounding Box: Height of Bounding Box:	2.20 1.70	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References: S57 TOPMAR Not specified	INT 1	

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Symbol Name:	SY(TOPMAR25)	RN: 392
Symbol Explanation:	topmark for beacons, 2 cones point upward, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 9.45	
Width of Bounding Box: Height of Bounding Box:	2.20 3.95	
	2.20	

Symbol Colours:	
Comments:	

CHBLK

N/A

N/A

Examples on ENC:

References:

S57	IN	Τ1
TOPMAR	Q 2-5, 10, 82, 110, 130.3	(Q 110)
		₩ A

→1.10 ←

Symbol Name:	SY(TOPMAR26)	RN: 393
Symbol Explanation:	topmark for beacons, 2 cones point downward, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 9.30	
Width of Bounding Box: Height of Bounding Box:	2.20 3.90	
	$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References:		
S57	INT 1	
TOPMAR Q 2-5, 10, 82	, 110, 130.3	

Symbol Name:	SY(TOPMAR27)	RN: 394
Symbol Explanation:	topmark for beacons, 2 cones base to base, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 9.50	
Width of Bounding Box: Height of Bounding Box:	2.20 3.95	
	56°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°	
Symbol Colours:	CHBLK	
Comments:	N/A	
Examples on ENC:	N/A	
References:		
TOPMAR Q 2-5, 10, 82, 1	10. 130.3	

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Symbol Name:	SY(TOPMAR28)	RN:	395
Symbol Explanation:	topmark for beacons, 2 cones point to point, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	1.10 9.40		
Width of Bounding Box: Height of Bounding Box:	2.20 3.90		
	$ \begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $		
Symbol Colours:	CHBLK		
Comments:	N/A		
Examples on ENC:	N/A		
References:			
TOPMAR Q 2-5, 10. 82. 1	110. 130.3		

Symbol Explanation: topmark for beacons, sphere, paper-chart	
Look up table affected: N/A	
Called by CSP etc.: CSP TOPMAR01	
Pivot Point Column:1.10Pivot Point Row:7.50	
Width of Bounding Box:2.20Height of Bounding Box:2.20	
Symbol Colours: CHBLK	
Comments: point diameter 2.2 mm	
Examples on ENC: N/A	
References:	
\S5/         INI 1           TODMAD         0.2.5.10.92.110.120.5	

Symbol Name:	SY(TOPMAR32)	RN: 397
Symbol Explanation:	topmark for beacons, 2 spheres, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 10.15	
Width of Bounding Box: Height of Bounding Box:	2.20 4.95	
Symbol Colours:	CHBLK	
Comments:	Point diameter 2.2 mm	
Examples on ENC:	N/A	
References:		
S57	INT 1	
TOPMAR Q 2-5, 10, 82	, 110, 130.4 (Q 110)	

Symbol Name	:	SY(TOPMAR33)	RN:	398
Symbol Expla	nation:	topmark for beacons, cylinder, paper-chart		
Look up table	affected:	N/A		
Called by CSF	P etc.:	CSP TOPMAR01		
Pivot Point Co Pivot Point Ro	blumn: bw:	0.75 8.00		
Width of Boun Height of Boun	iding Box: nding Box:	1.50 2.45		
		↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		
Symbol Colou	irs:	CHBLK		
Comments:		Line weight 0.6 mm		
Examples on ENC:		N/A		
References:				
S57		INT 1		
TOPMAR	Q 2-5, 10, 82, 1	10, 130.1 (Q 110)		
		Ř		

Symbol Name:	SY(TOPMAR34)	RN: 399
Symbol Explanation:	topmark for beacons, board, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.20 7.00	
Width of Bounding Box: Height of Bounding Box:	2.40 1.35	
	2.40 	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:		
S57 TOPMAR Not specified	INI 1	

Symbol Name	:	SY(TOPMAR36)	RN:	400
Symbol Explai	nation:	topmark for beacons, cube point up, paper-chart		
Look up table	affected:	N/A		
Called by CSF	etc.:	CSP TOPMAR01		
Pivot Point Co Pivot Point Ro	lumn: w:	1.30 7.75		
Width of Bounding Box: Height of Bounding Box:		2.55 2.55		
Symbol Colours:		CHBLK		
Comments:		Line weight 0.6 mm		
Examples on ENC:		N/A		
References:				
S57		INT 1		
TOPMAR	Q 2-5, 10, 82, 1	10, 123 (Q 123)		

Symbol Name:	SY(TOPMAR65)	RN: 401
Symbol Explanation:	topmark for buoys, x-shape, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	0.20 7.18	
Width of Bounding Box: Height of Bounding Box:	2.79 2.26	
	2.79 - 2.79 - 1 1 1 0.36 © - 2.51	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:	INT 1	

S57	IN	11
TOPMAR	Q 2-5, 9, 10, 50-57, 59, 62, 70, 71, 130.6	(Q 9)
		×

Symbol Name:	SY(TOPMAR85)	RN: 402
Symbol Explanation:	topmark for beacons, x-shape, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.10 7.50	
Width of Bounding Box: Height of Bounding Box:	2.20 2.20	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:		
55/	INI 1	
<b>IOPMAR</b> Q 2-5, 10, 82, 7	110, 130.6	

Symbol Name:	SY(TOPMAR86)	RN: 403
Symbol Explanation:	topmark for beacons, upright cross, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	2.17 9.68	
Width of Bounding Box: Height of Bounding Box:	4.20 3.99	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	
References:	INIT 4	
TOPMAR Q 2-5, 10, 82, 1	10	

Symbol Name:	SY(TOPMAR87)	RN: 404
Symbol Explanation:	topmark for beacons, besom point down, paper-chart	
Look up table affected:	N/A	
Called by CSP etc.:	CSP TOPMAR01	
Pivot Point Column: Pivot Point Row:	1.24 8.20	
Width of Bounding Box: Height of Bounding Box:	2.59 3.01	
	$\begin{array}{c c} & 2.39 \\ \hline \\ & 1.68 \\ \hline \\ & 1.68 \\ \hline \\ & 1.27 \\ \hline \\ & 0.72 \\ \hline \\ $	
Symbol Colours:	CHBLK	
Comments:	Line weight 0.3 mm	
Examples on ENC:	N/A	
References:		
55/	INT 1	
I OPMAR   Q 2-5, 10, 82	, 91   (Q 91)	



Symbol Name:	SY(TOPMAR89)	RN:	406
Symbol Explanation:	topmark for beacons, T-shape, paper-chart		
Look up table affected:	N/A		
Called by CSP etc.:	CSP TOPMAR01		
Pivot Point Column: Pivot Point Row:	2.17 8.73		
Width of Bounding Box: Height of Bounding Box:	4.20 2.80		
	4.20 - 4.20 - 1 1 1 1 1 - 08 		
Symbol Colours:	CHBLK		
Comments:	Line weight 0.6 mm		
Examples on ENC:	N/A		
References:			
S57	INI 1		