

Paper for Consideration by TSMAD/ DIPWG

Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15

<i>Submitted by:</i>	Jeppesen
<i>Executive Summary:</i>	This paper describes corrections to the ECDIS Chart 1 made by Jeppesen and associated changes to S-52, Annex A, Section 15, which Jeppesen recommends be issued as stand-alone documentation for ECDIS Chart 1.
<i>Related Documents:</i>	S-52
<i>Related Projects:</i>	

15. ECDIS CHART 1, SYMBOL PLOTS & COLOUR TEST DIAGRAMS

15.1 Introduction

This section of the Presentation Library contains the following:

- 15.2 ECDIS Chart 1 – **new versions of screenshots are given in current document**
- 15.3 List of symbol names and meanings arranged numerically - **should be brought to conformity with IHO PUBLICATION S-52 APPENDIX 2, ADDENDUM TO ANNEX A, PART I, USERS´ MANUAL (EDITION 3.4 (2008)), PAPER BASED DESCRIPTION OF SYMBOLS FOR USE ON ECDIS**
- 15.4 Colour Differentiation Test Diagrams – **no changes**
- 15.5 Plot of symbols arranged alphabetically – **can be deleted because detailed specification of symbols is given in S-52 APPENDIX 2, ADDENDUM TO ANNEX A**
- 15.6 List of symbol names and meanings arranged alphabetically **should be brought to conformity with IHO PUBLICATION S-52 APPENDIX 2, ADDENDUM TO ANNEX A, PART I, USERS´ MANUAL (EDITION 3.4 (2008)), PAPER BASED DESCRIPTION OF SYMBOLS FOR USE ON ECDIS**

15.2 ECDIS Chart 1

This clause contains the list of ECDIS CHART 1 datasets and screenshots for them. Most of printed symbols are supplied with numbers for referencing to the table from clause 15.3. According to the requirements of S-52 (SPECIFICATIONS FOR CHART CONTENT AND DISPLAY ASPECTS OF ECDIS, Edition 6.0, March 2010, see clause 3.1.4) the manufacturer should provide linking by cursor interrogation between the symbols and the explanations given in the symbol library. To simplified such linking INFORM attribute (where it is permitted) of the instance of feature object contains explanations from clause 15.3 - List of symbol names and meanings. In case if INFORM attribute is not permitted for feature object additional explanations text is given.

Note that because colour printing and copying is not completely true to the original, this hard-copy version does not accurately represent the colour requirements of the IHO Colour and symbol Specifications. The ECDIS should be colour calibrated as described in Annex B to the C&S Specifications.

In addition, symbol size may change in copying. To ensure correct size, all symbols illustrated should be scaled by the factor required to make symbol CHKSYM01 measure 5mm by 5mm.

The following datasets are included into ECDIS CHART 1 database:

- AA4C1XMS.000 – ECDIS Symbols, general
- AA5C1AB1.000 – Information about chart display (A, B)
- AA5C1AB2.000 – Information about chart display (A, B)
- AA5C1CDE.000 – Natural and Man-made features (C, D, E)
- AA5C1FOO.000 – Port features (F)
- AA5C1HIO.000 – Depth, Currents, etc (H, I)
- AA5C1JKL.000 – Seabed, Obstructions, Pipelines, etc (J, K, L)
- AA5C1MOO.000 – Traffic Routes (M)
- AA5C1NOO.000 – Special Areas (N)
- AA5C1PRS.000 – Aids and Services (P, R, S, T, U)
- AA5C1QO1.000 – Buoys and Beacons (Q)
- AA5C1QO2.000 – Top Marks (Q)
- AA5C1MNS.000 – Mariners' Navigational Symbols

The following settings should be used for presentation of all datasets:

a) IMO display category - OTHER

b) Depth settings

Parameter	Value	explanations	Comments
SAFETY_DEPTH	7m	selected safety depth (meters)	
SHALLOW_CONTOUR	2m	selected shallow water contour (meters)	
SAFETY_CONTOUR	10m	selected safety contour (meters)	
DEEP_CONTOUR	30m	selected deep water contour (meters)	
TWO_SHADES	on/off	flag indicating selection of two depth shades	For AA5C1HIO.000

c) Text groupings

Parameter	Text grouping	Comments
Important Text	11	
Other text	21	names for position reporting
Other text	23	light description string
Other text	26	geographic names
Other text	28	height of islet or land feature
Other text	29	berth number

NEWOBJ object with symbology instruction coded in SYMINS attribute for ECDIS CHART 1 had been started to be used actively in edition 3.4 of IHO Presentation Library. Usually it was used for different frames, explanation texts and not ENC feature objects such as ARPA and AIS targets, Routes and etc. In current version such instance of NEWOBJ is used in the following cases

- For different frames for dividing object presentation into logical parts –see for example AA4C1XMS dataset.
- For explanation texts such us e.g. Traffic routes on AA4C1XMS dataset CHART1_XMS.PNG.
- For Colour Differentiation Test Diagrams. See AA5C1WOO dataset.
- For coding Mariners’ object information, such as ARPA, AIS targets, their associated symbols, heading and COG vectors. See AA5C1MNS.000 dataset.
- For coding non-ENC symbols that are necessary to be presented in ECDIS, such as scale bars and boundary of non HO data. See AA5C1AB1.000
- To avoid ambiguity in processing of sophisticated CSP for danger symbols, e.g. Pont hazards on AA5C1JKL. In other case it will be necessary to create complex TG1 objects’ structure. Creating “dummy” small TG1 objects (e.g. DEPARE) under hazards in this case it is not a good decision because in many cases such trick gives an interesting side effect – the borders of such dummy DEPARE (even without shared depth contour) practically in all cases should be treated as safety contours and accordingly should be presented with solid thick black line. Such presentation obscures the presentation of the main symbol.

List of such NEWOBJ objects for items e) and f) is given in the table below.

Dataset	Symbol number	Description	Comment
AA4C1XMS	150	isolated underwater danger of depth less than the mariner's selected safety contour	See Seabed, Obstructions, Pipelines, etc chartlet
AA5C1AB1	229	one mile scalebar for display scales larger than 1/80,000	
AA5C1AB1	230	10 mile latitude scale for display scales smaller than 1/80,000	
AA5C1AB1	491	boundary of non-HO data	

Dataset	Symbol number	Description	Comment
AA5C1AB1	461	overscale part of a display containing data from more than one navigation purpose	
AA5C1AB1	517	chart scale boundary, the double line indicates the larger scale	
AA5C1AB1	202	position approximate	
AA5C1AB1	165	point feature or area of low accuracy	
AA5C1AB1	149	this object has additional information available by cursor query	
AA5C1AB1	175	north arrow	
AA5C1AB2	88	test symbol for checking symbol sizes, should measure 5mm by 5mm	
AA5C1AB2	78, 79, 474, 475	Symbols used for manual updates	
AA5C1AB2	204, 505	object which is not sufficiently described to be symbolized, or for which no symbol exists in the symbol library	
AA5C1CDE	63	symbol for opening bridge for objects with Line or Area geometry type	
AA5C1HIO	445	Pattern for area of depth less than the safety contour	
AA5C1JKL	441	wreck showing any portion of hull or superstructure at level of chart datum	
AA5C1JKL	442	Non-dangerous wreck, depth unknown	
AA5C1JKL	443	dangerous wreck, depth unknown	
AA5C1JKL	162	land as a point at small scale	
AA5C1JKL	180	offshore platform	
AA5C1JKL	44	installation buoy, paper-chart	
AA5C1JKL	434	weed, kelp	
AA5C1JKL	235	sand waves	
AA5C1JKL	363	Spring	
AA5C1JKL	132	foul area of seabed safe for navigation but not for anchoring	
AA5C1JKL	136	fish stakes	
AA5C1JKL	135	fish trap, fish weir, tunny net	
AA5C1JKL	168	fish farm	

Dataset	Symbol number	Description	Comment
AA5C1JKL	138	fish haven	
AA5C1JKL	137	fishing ground	
AA5C1JKL	150	isolated underwater danger of depth less than the safety contour	
AA5C1JKL	99	Underwater hazard with depth greater than 20 metres	
AA5C1JKL	525	underwater hazard which covers and uncovers	
AA5C1JKL	177	obstruction, depth not stated	
AA5C1JKL	178	obstruction in the intertidal area	
AA5C1JKL	526	obstruction which covers and uncovers	
AA5C1JKL	425	rock which covers and uncovers or is awash at low water	
AA5C1JKL	424	dangerous underwater rock of uncertain depth	

Screenshots for all above listed datasets are shown below

AA4C1XMS, ECDIS Symbols, general (CHART1_XMS.PNG)





This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4







<p>ECDIS SYMBOLS</p> <p>INFORMATION ABOUT THE CHART DISPLAY (A,B)</p> <p>NON-ENC Data on Display</p>	<p>Manual update</p> <p>Default symbol for NEWOBJ</p>	<p>NATURAL AND MAN-MADE FEATURES (C,D,E)</p>	<p>PORT FEATURES (F)</p>
<p>DEPTHS, CURRENTS, ETC. (H, I)</p>	<p>SEABED, OBSTRUCTIONS, PIPELINES, ETC. (J, K, L)</p>	<p>TRAFFIC ROUTES (M)</p>	<p>SPECIAL AREAS (N)</p>
<p>AIDS AND SERVICES (P,R,S,T,U)</p>	<p>BUOYS AND BEACONS (Q)</p>	<p>TOPMARKS (Q)</p>	<p>COLOR TEST DIAGRAM</p>
<p>MARINERS NAVIGATIONAL SYMBOLS</p>			







AA5C1AB1, Information about chart display (A, B) (CHART1_AB1_num.PNG)

INFORMATION ABOUT THE CHART DISPLAY (A,B)

This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

 229	 230	PA  202	?	 149
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CURSORS					
 163	 166	 175	 Style A 96	 Style B 97	 Reference Point 219

MARINERS NOTES			MANUFACTURES FEATURES		
 82	 83	 Caution 85	 Information 84	 Caution 87	 Information 86

NON-ENC Data on Display

Over scale part of a Display

ENC DATA

NON-ENC DATA 491

461

517

AA5C1AB2, – Information about chart display (A, B) (CHART1_AB2_num.PNG)

INFORMATION ABOUT THE CHART DISPLAY (A,B)

This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4

Test symbol for size checking

Test symbol for color checking

Manual update

No symbol exists in the symbol library

Default symbol for NEWOBJ

88

523

78 deleted

79 updated

474

475

204

505





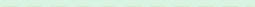




585

588

AA5C1CDE, Natural and Man-made features (C, D, E) (CHART1_CDE_num.PNG)






NATURAL AND MAN-MADE FEATURES (C,D,E)

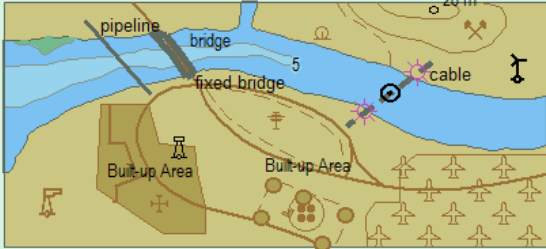
This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4







		
coastline, surveyed	land elevation	pipeline, overhead
		
coastline, unsurveyed	vegetation	cable, overhead
		
river, stream	road	fixed bridge









































clr 20


clr 7

	
413	414
	
144	145
	12 m
195	




	
206	65
	
72	73
	
7	63


									
193	194	66	69	111	112	67	70	68	71
									
407	409	408	411	80	81	125	126	169	170
									
439	440	435	436	173	174	207	208	407	409
									
113	114	373	374	231	232	130	131	199	128




375




376




222




233



437



438




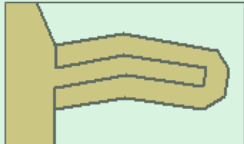
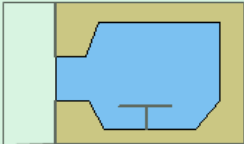



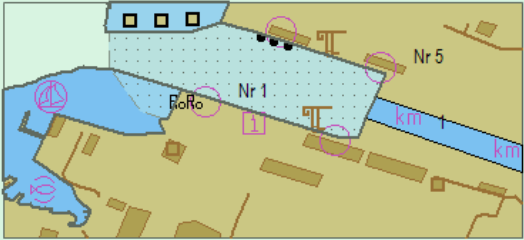
203













AA5C1FOO, Port features (F) (CHART1_FOO_num.PNG)

PORT FEATURES (F)

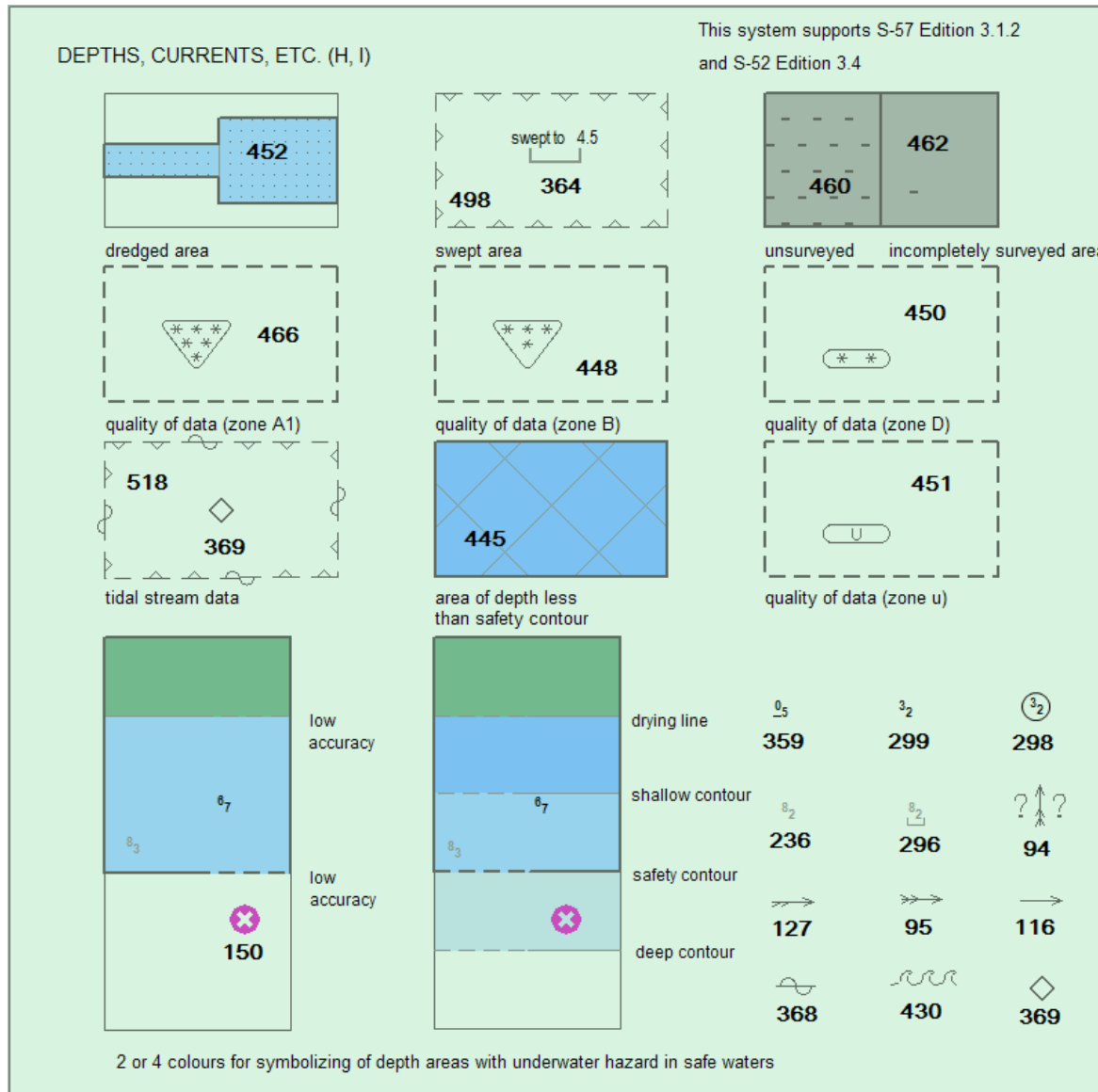
This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4

shorline construction	lock gate	dam
		
		
breakwater	tidal basin	timber yard



		 Nr 1		
146	234	64	142	143
				RoRo
171	172	188	147	234
km	o km			
109	108	372	179	90



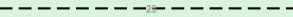


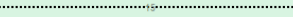





















AA5C1HIO, Depth, Currents, etc (H, I) (CHART1_HIO_num.PNG)

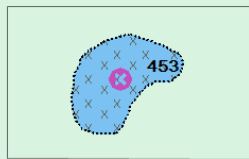
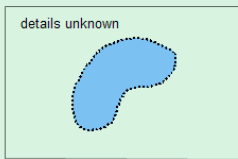
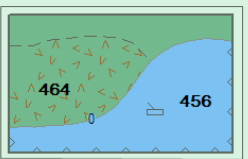
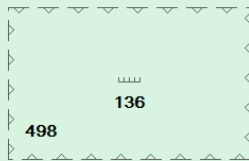

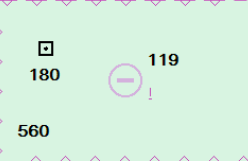
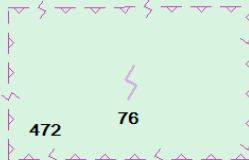




AA5C1JKL.000 – Seabed, Obstructions, Pipelines, etc (J, K, L) (CHART1_JKL_num.PNG)

This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4

SEABED, OBSTRUCTIONS, PIPELINES, ETC. (J, K, L)

 fishing facility 489	 pipeline, oil 501	 Line obstruction, Value of Sounding more than 20 m
 cable, submarine 473	 pipeline, water 502	 Line obstruction, Value of Sounding less than 20 m
 441	 442	 443
 162	 180	 44
 434	 235	 363
 132	 136	 135
 150	 98	 99
 525	 177	 178
 526	 425	 424

 foul area dangerous for navigation	 area of wrecks or obstructions in safe waters	 rock or coral seabed area and fish haven
 fishing facility	 sand waves	 restricted area, navigation with caution
 cable area	 pipe area, oil	 pipe area, water

AA5C1MOO.000 – Traffic Routes (M)

a) Areas with symbolized boundaries (CHART1_MOO_SYMBOLIZED_num.PNG)

TRAFFIC ROUTES (M)

This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4

90 deg
270 deg
481
482
510
508

90 deg
270 deg
479
480
509
507

478
506
487
488

123 210 227 415 420 419 211 212 209 197

417
traffic separation scheme

151
516
inshore traffic zone

198
210
504
precautionary area

587
archipelagic sea lane

466 418 416
seabed area

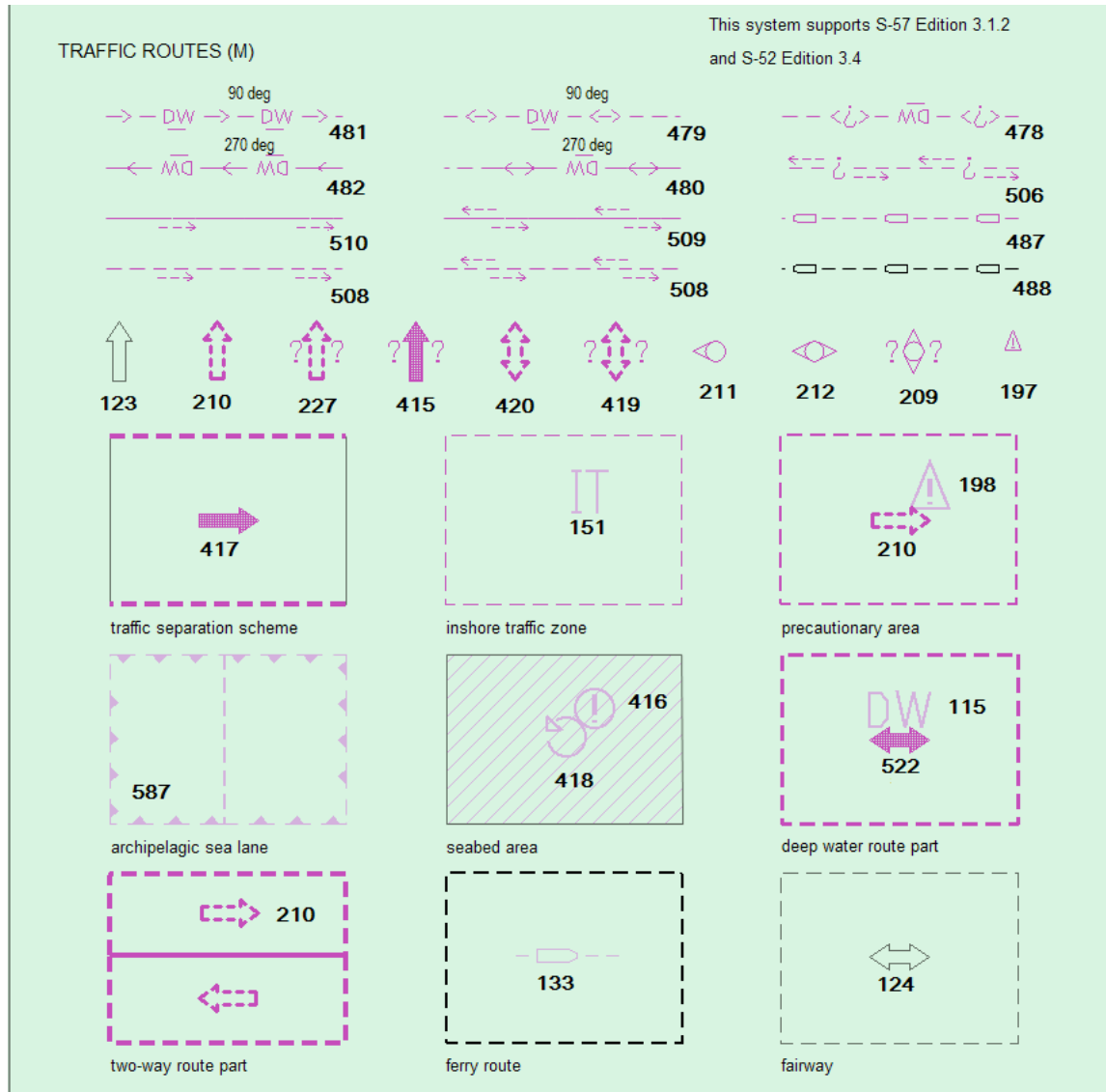
483 522 115
deep water route part

210
two-way route part

498 133
ferry route

124
fairway

b) Areas with plain boundaries (CHART1_MOO_PLAIN_num.PNG)



AA5C1NOO – Special Areas (N)

a) Areas with symbolized boundaries (CHART1_NOO_SYMBOLIZED_num.PNG)

This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4
















SPECIAL AREAS (N)

<p>1</p> <p>469</p> <p>anchorage area</p>	<p>Nr A</p> <p>3</p> <p>470</p> <p>restricted area, anchoring prohibited</p>	<p>524</p> <p>restricted area, fishing prohibited</p>
<p>2</p> <p>restricted, other caution available</p>	<p>4</p> <p>restricted, other information available</p>	<p>139</p> <p>restricted, entry prohibited</p>
<p>5</p> <p>ESSA area</p> <p>584</p>	<p>6</p> <p>PSSA area</p> <p>586</p>	<p>477</p> <p>118</p> <p>caution area</p>
<p>477</p> <p>military practice area</p>	<p>471</p> <p>administration area</p>	<p>476</p> <p>91</p> <p>cargo transshipment area</p>

b) Areas with plain boundaries (CHART1_NOO_PLAIN_num.PNG)

This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

SPECIAL AREAS (N)

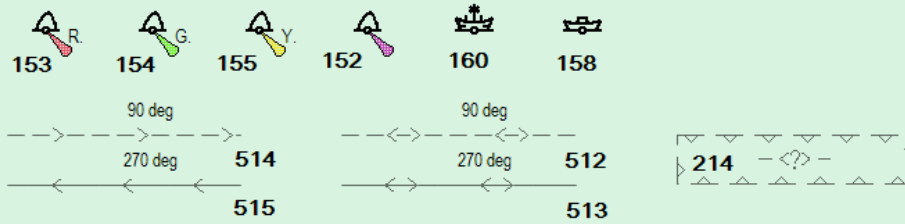
 1	 Nr A 3	 524
 2	 4	 139
anchorage area	restricted area, anchoring prohibited	restricted area, fishing prohibited
 5	 6	 118
restricted, other caution available	restricted, other information available	restricted, entry prohibited
 ESSA 584	 PSSA 586	 91
ESSA area	PSSA area	caution area
		 148
military practice area	administration area	cargo transhipment area

AA5C1PRS, Aids and Services (P, R, S, T, U) (CHART1_PRS_num.PNG)

This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

AIDS AND SERVICES (P,R,S,T,U)

P - lights and recommended tracks



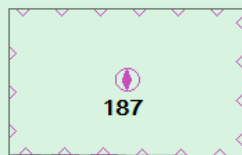
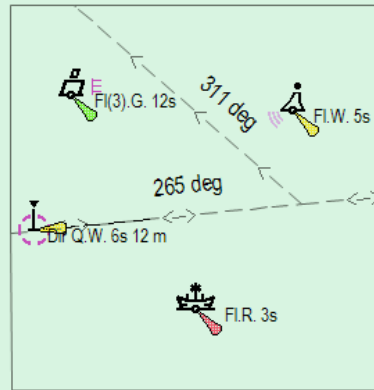
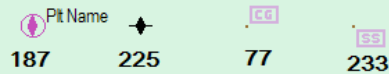
R - fog signals



S - radio, radar



T - services



pilot boarding place



yacht harbour/marina












AA5C1QO1.000 – Buoys and Beacons (Q)

a) Paper chart point symbolization (CHART1_Q01_PAPER_CHART_num.PNG)











This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

BUOYS AND BEACONS (Q)




Buoys

										
41	36	53	59	43	55	35	60	62	50	51



Beacons

									
34	33	28	22	21	74	75	176	200	201

Daymarks

		
101	104	105

Light float and light vessel

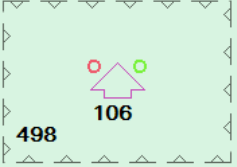
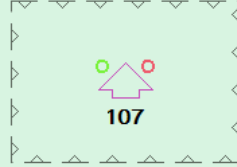
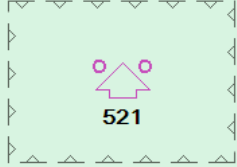
	
160	158

Navigational system of marks

497

A-B-A-B-A-B-A-B-A-B-A-B

B-V-B-V-B-V-B-V-B-V-B-V-B-V

			
498	106	107	521
IALA A	IALA B	no or other system	

b) Simplified point symbolization (CHART1_Q01_SIMPLIFIED_num.PNG)

This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

BUOYS AND BEACONS (Q)

Buoys

46	47	48	49	37	38	39	40	42
45	54	56	57	58	527	61	52	52

Beacons

24	25	26	27	16	17	18	19	20
23	29	31	32	74	75	176	176	176

Daymarks

100	102	103
-----	-----	-----

Light float and light vessel

161	159
-----	-----

Navigational system of marks

A - B - A - B - A - B - A - B - A - B - A - B

497

106

IALA A

107

IALA B

521
















no or other system

AA5C1QO2.000 – Top Marks (Q), Paper chart point symbolization (CHART1_Q02_PAPER_CHART_num.PNG)

















This system supports S-57 Edition 3.1.2
and S-52 Edition 3.4

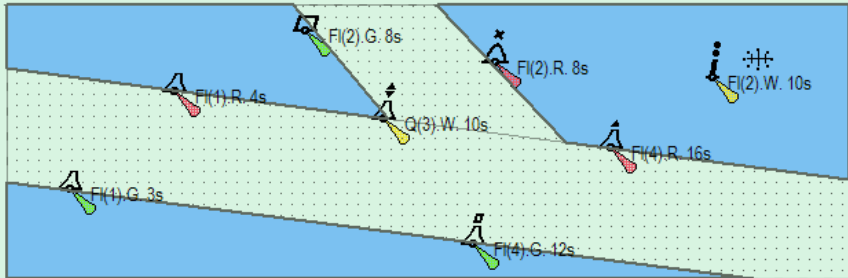
TOPMARKS (Q)

Buoys Topmarks

							
377	378	379	380	381	382	383	384
							
385	386	387	388	389	401	371	

Beacon topmarks

							
390	391	392	393	394	395	396	397
							
398	399	400	402	405	404	406	403



AA5C1MNS.000 – Mariners' Navigational Symbols (CHART1_MNS_num.PNG)

This system supports S-57 Edition 3.1.2 and S-52 Edition 3.4

MARINERS NAVIGATIONAL SYMBOLS

Planned route and waypoints

189 20/1115

Arrival date and time at planned position

191 15

Box for speed to make good

433 next waypoint

503 alternate route

431 432

EBL and VRM offset

117

122 Event

110 Danger highlight

Clearing line

NLT 090 deg 89

Ownship COG, SOG vector

426

183

182

181

184

121

485

Past tracks

ARPA water vector

429

15

14

13

A.I.S. COG, SOG vector and targets

15.3 List of symbol names & meanings arranged numerically

This clause of IHO presentation library is obsolete¹. New names of valid symbols' instructions are listed in the table below

Symbols added since first Edition of IHO Presentation Library 3.4

	Old name of instruction	New name of instruction	Definition	Comments
11	SY(AISSLP01)	SY(AISSLP02)	sleeping AIS target	
12	SY(AISVES01)	SY(AISVES02)	active AIS target showing vector and/or heading	
13	SY(ARPATG01)	SY(ARPATG02)	ARPA target	
14	SY(ARPONE01)	SY(ARPONE02)	one minute mark on ARPA vector	
15	SY(ARPSIX01)	SY(ARPSIX02)	six minute mark on ARPA vector	
427	SY(VECGND21)	SY(VECGND22)	arrowhead for ARPA (or AIS) vector for course and speed over the ground	
429	SY(VECWTR21)	SY(VECWTR22)	arrowhead for ARPA (or AIS) vector for course and speed through the water	
580	SY(AISLST01)	SY(AISLST02)	Lost AIS target	
581	SY(AISSEL01)	Absent	selected AIS target	Was deleted, but is used in IEC 62288 and CHART 1. It should be restored.
582	SY(AISTRN01)	SY(AISTRN03)	SY(AISTRN01) SY(AISTRN03) AIS target turning to starboard	
583	SY(AISTRN02)	SY(AISTRN04)	target turning to port	
589	SY(AISDGR01)	SY(AISDGR02)	dangerous AIS target	

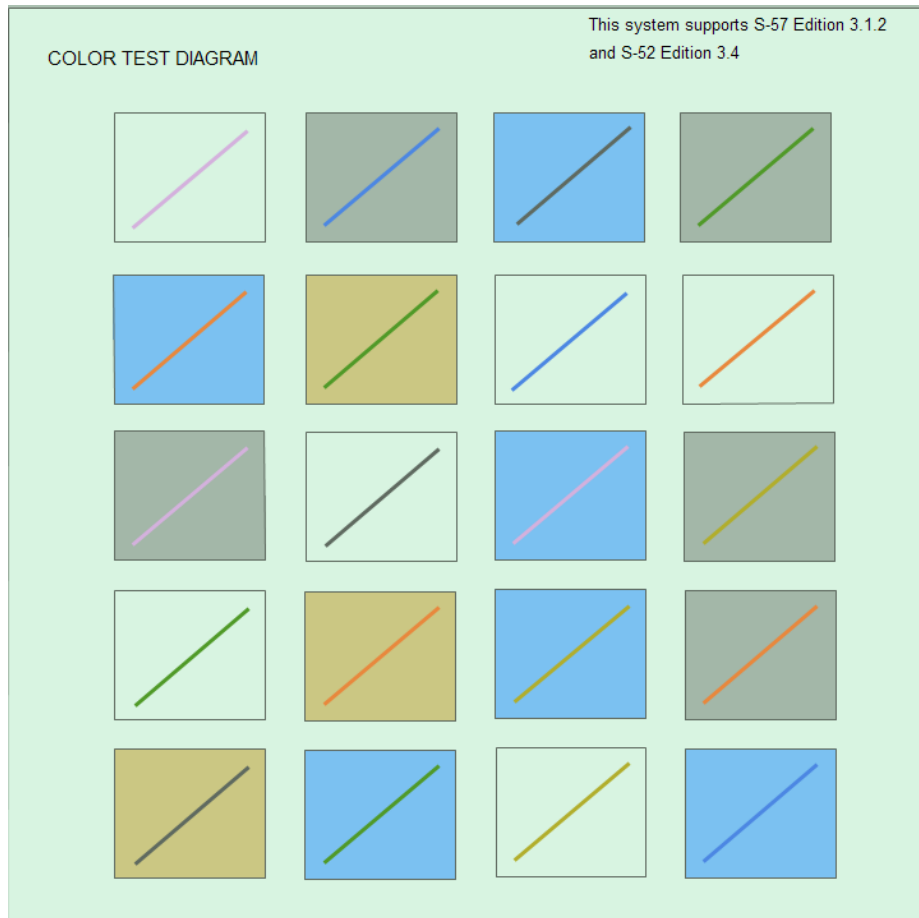
¹ It should be pointed that in current version of PAPER BASED DESCRIPTION OF SYMBOLS FOR USE ON ECDIS (S-52 APPENDIX 2, ADDENDUM TO ANNEX A, PART I, USERS' MANUAL, EDITION 3.4 (2008)) old names of instructions are deleted permanently and such instructions is impossible to use in future, e.g. in NEWOBJ

15.4 Colour Differentiation Test Diagrams

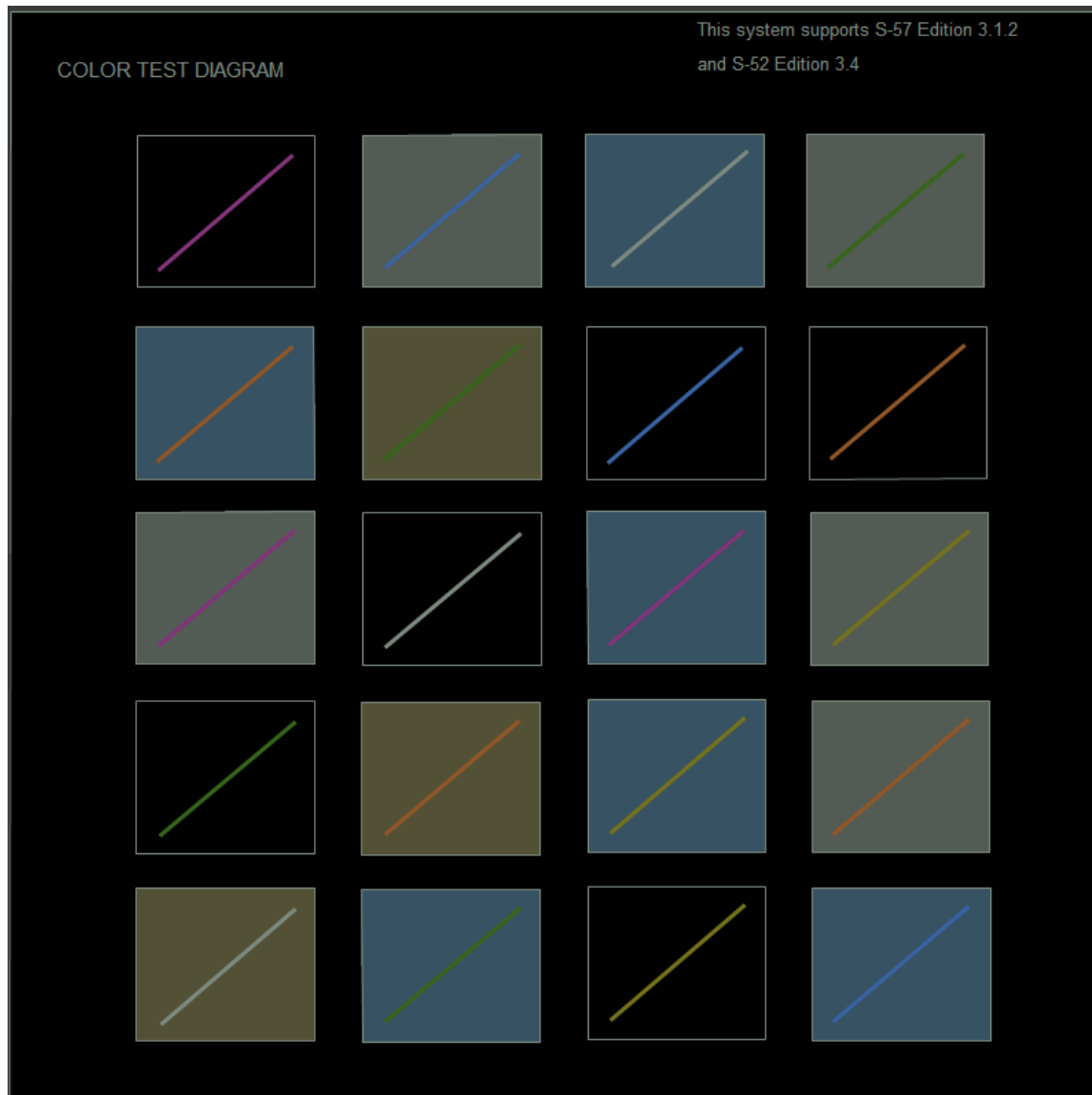
The following diagram is required in "Day" and "Dusk" colours so that the mariner can verify that his ECDIS display monitor has the colour differentiation capability needed to distinguish between the various colour-coded areas, lines and point symbols of the ECDIS display. The diagrams will not be true to colour unless they are projected on a calibrated monitor and are generated in a manner which correctly reproduces the colour tokens of the PresLib, as described in section 19.4. Section 19.4 also describes the use of these diagrams.

AA5C1WOO – COLOR TEST DIAGRAMS

a) DAY (CHART1_WOO_DAY.PNG)



b) DUSK (CHART1_WOO_DUSK.PNG)



15.5 Plots of symbols arranged alphabetically

This clause of IHO presentation library is obsolete because now there are more complete and up to day information with symbols' plots. It is IHO PUBLICATION S-52 APPENDIX 2, ADDENDUM TO ANNEX A, PART I, USERS' MANUAL EDITION 3.4 (2008). PAPER BASED DESCRIPTION OF SYMBOLS FOR USE ON ECDIS

My suggestion is to delete this clause completely.

15.6 List of symbol names & meanings arranged alphabetically

This clause of IHO presentation library is obsolete². New names of valid symbols' instructions are listed in the table below

Symbols added since first Edition of IHO Presentation Library 3.4

	Old name of instruction	New name of instruction	Definition	Comments
589	SY(AISDGR01)	SY(AISDGR02)	dangerous AIS target	
580	SY(AISLST01)	SY(AISLST02)	Lost AIS target	
581	SY(AISSEL01)	Absent	selected AIS target	Was deleted, but is used in IEC 62288 and CHART 1. It should be restored.
11	SY(AISSLP01)	SY(AISSLP02)	sleeping AIS target	
582	SY(AISTRN01)	SY(AISTRN03)	SY(AISTRN01) SY(AISTRN03) AIS target turning to starboard	
583	SY(AISTRN02)	SY(AISTRN04)	target turning to port	
12	SY(AISVES01)	SY(AISVES02)	active AIS target showing vector and/or heading	
13	SY(ARPATG01)	SY(ARPATG02)	ARPA target	
14	SY(ARPONE01)	SY(ARPONE02)	one minute mark on ARPA vector	
15	SY(ARPSIX01)	SY(ARPSIX02)	six minute mark on ARPA vector	
427	SY(VECGND21)	SY(VECGND22)	arrowhead for ARPA (or AIS) vector for course and speed over the ground	
429	SY(VECWTR21)	SY(VECWTR22)	arrowhead for ARPA (or AIS) vector for course and speed through the water	

² It should be pointed that in current version of PAPER BASED DESCRIPTION OF SYMBOLS FOR USE ON ECDIS (S-52 APPENDIX 2, ADDENDUM TO ANNEX A, PART I, USERS' MANUAL, EDITION 3.4 (2008)) old names of instructions are deleted permanently and such instructions is impossible to use in future, e.g. in NEWOBJ