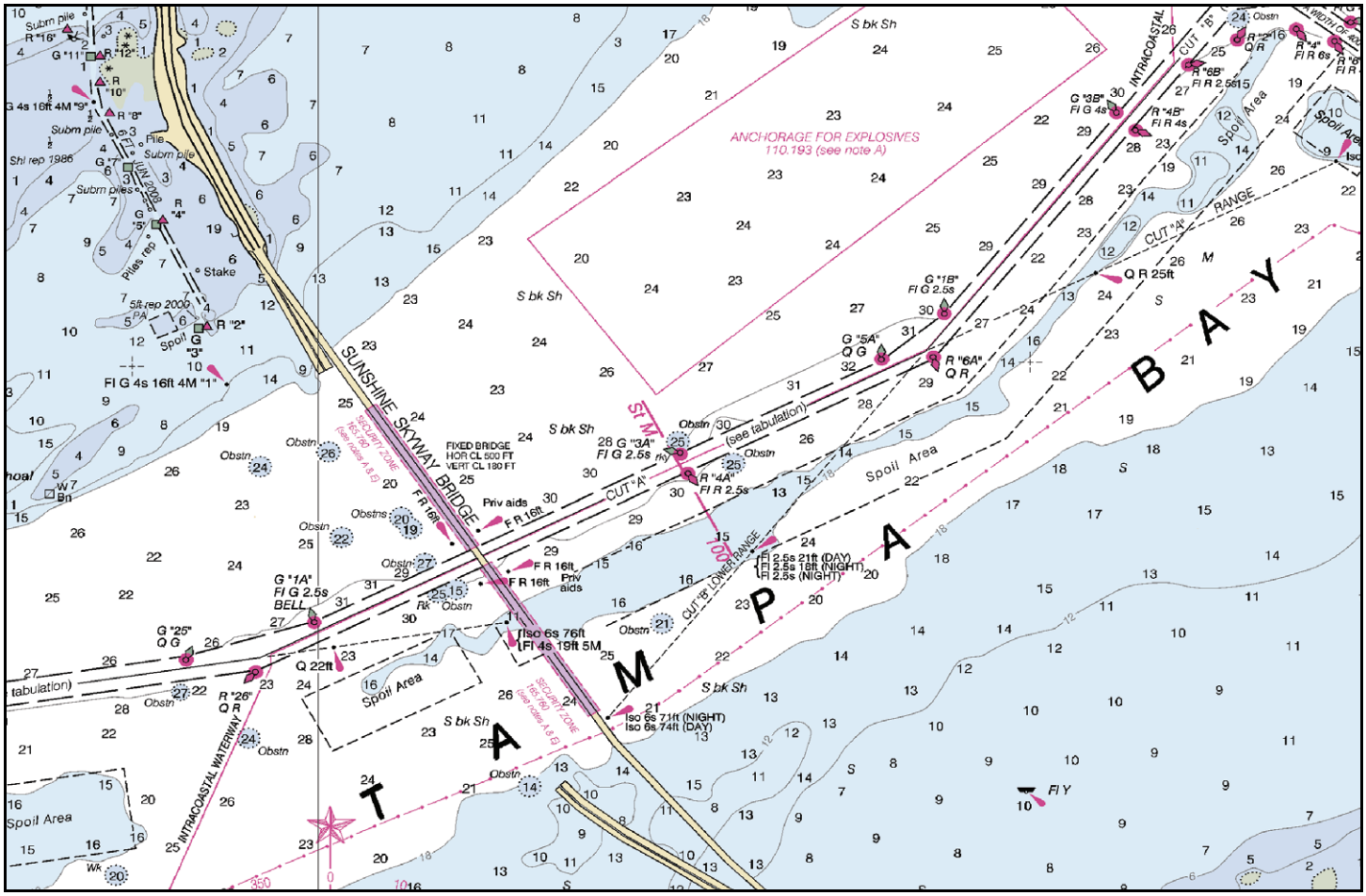
Chart No. 1

UNITED STATES OF AMERICA

Nautical Chart Symbols, Abbreviations and Terms



Eleventh Edition

November 2011

Chart No.1

United States of America

Nautical Chart Symbols, Abbreviations and Terms

Eleventh Edition
November 2011

Prepared jointly by:

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
Washington, DC

U.S. Department of Defense
National Geospatial-Intelligence Agency
Springfield, VA

Changes to this edition will be published by the National Geospatial-Intelligence Agency (NGA) in the Notice to Mariners.

These changes are also available on the Internet at http://msi.nga.mil/NGAPortal/MSI.portal

Record of Corrections			
Supplement No.	Notice No.	Corrected On	Corrected by

SYMBOLS ABBREVIATIONS TERMS

CONTENTS

INTRODUCTION

Purpose - The 11th edition of U. S. Chart No. 1, *Nautical Chart Symbols, Abbreviations and Terms* presents the symbols depicted on paper nautical charts produced by the National Oceanic and Atmospheric Administration (NOAA) and the National Geospatial-Intelligence Agency (NGA), as well as digital raster representations of those charts, such as Raster Nautical Charts (RNC®). This document also shows the symbols described in the Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO published by the International Hydrographic Organization (IHO), which are portrayed in the three official language versions of International Chart 1 (INT 1).

Electronic Charts - The symbols and abbreviations displayed on navigation systems portraying NOAA-produced Electronic Navigational Charts (NOAA ENC®) or NGA-produced Digital Nautical Charts (DNC®) are quite similar to those used on paper charts for some features, but different for others. This document is not intended as a reference for the use of these vector-based products.

Change in Column Order - Previous editions of U.S. Chart No. 1 showed U.S. symbology on the left side of the page and INT 1 symbology in the second column from the right. This edition of Chart No. 1 has reversed the order. INT 1 symbols now appear in the second column from the left, after the symbol number. Any variations from INT 1 symbology that are used on charts produced by NOAA or NGA are shown in the NOAA, NGA and the "NGA reproduction of foreign charts" columns (columns 4, 5, and 6 respectively).

When columns 4 and 5 are combined, this indicates that NOAA and NGA use the same symbol for that particular feature. When any of columns 4, 5, or 6 are blank, then the INT 1 symbol has been adopted for use by the organization for which that column applies. The schematic layout following this introduction shows a typical symbol table page and describes the table headers and the types of information presented in each of the columns.

Sample Chart Layouts – Section A presents two schematics showing typical layouts of the major elements of NOAA and NGA charts.

Soundings - The sounding datum reference is stated in the chart title. Soundings on NOAA and NGA charts may be shown in fathoms, feet, fathoms and feet, fathoms and fractions, or meters and decimeters. In all cases the unit of depth used is shown in the chart title and outside the border of the chart in bold type. (See item Ab in Section A.)

Heights - Heights of lights, landmarks, structures, etc. refer to the shoreline plane of reference. The unit of height is shown in the chart title. When the elevations of islets or bare rocks are offset into the adjacent water, they are shown in parentheses.

Drying Heights - For rocks and banks that cover and uncover, elevations are underlined and are referenced to the sounding datum as stated in the chart title. When the heights of rocks that cover and uncover are offset into the adjacent water, they are shown in parentheses.

Shoreline - Shoreline shown on charts represents the line of contact between the land and a selected water elevation. In areas affected by tidal fluctuation, this line of contact is usually the mean high-water line. In confined coastal waters of diminished tidal influence, a mean water level may be used. The shoreline of interior waters (rivers, lakes) is usually a line representing a specified elevation above a selected datum. Shoreline is symbolized by a heavy line (symbol C1). Apparent shoreline is depicted on charts to show the outer edge of marine vegetation where the shoreline limit would be expected to appear to the observer, or where it prevents the shoreline from being clearly defined. Apparent shoreline is symbolized by a lighter line (symbols C32, C33, Ca, Cq and Cr).

Landmarks - A structure or a conspicuous feature on a structure may be shown by a landmark symbol with a descriptive label (see Section E). Prominent buildings that could assist the navigator may be shown by actual shape as viewed from above (see Sections D and E). On NGA charts, a landmark legend that is shown in capital letters indicates that the landmark is conspicuous; the landmark may also be labeled “CONSPICUOUS” or “CONSPIC.” On NOAA charts, all landmarks are considered to be conspicuous, and landmark legends shown in all capital letters indicate the landmark has been positioned accurately; legends using both upper and lower case letters indicate an approximate position.

IALA Buoyage System - The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Maritime Buoyage System is followed by most of the world’s maritime nations; however systems used in some foreign waters may be different. IALA buoyage is divided into two regions: Region A and Region B. All navigable waters of the United States follow IALA Region B rules, except U.S. possessions west of the International Date Line and south of 10° north latitude, which follow IALA Region A.

The major difference in the two buoyage Regions is the color of the lateral marks. Region A uses red-to-port marks and Region B uses red-to-starboard marks when entering from seaward. The shapes of lateral marks, however, are the same in both Regions: can to port and cone (nun) to starboard, when entering from seaward. Cardinal and other marks, such as isolated danger marks, safe water marks, and special marks are also the same in both Regions. Section Q and Appendix 1 illustrate the IALA Buoyage System for both Regions A and B.

U.S. Lateral Marks - Most of U.S. waters lie withing IALA Region B. In the U.S. system, on entering a channel from seaward, buoys and beacon dayboards on the starboard side are red with even numbers and have red lights, if lit. Buoys and beacon dayboards on the port side are green with odd numbers and have green lights, if lit. Preferred channel buoys have red and green horizontal bands with the top band color indicating the preferred side of passage.

Light Range (Visibility) - A light’s range or visibility is given in nautical miles, except on the Great Lakes and adjacent waterways, where light ranges are given in statute miles. For lights having more than one color, NOAA charts give only the shortest range of all the colors. On NGA charts, multiple ranges may be shown using the following convention. For lights with two colors, the first number indicates the range of the first color and the second number indicates the range of the second color. For example, **Fl WG 12/8M** indicates that the range of the white light is 12 nautical miles and the range of green light is 8 nautical miles. For lights with three colors, only the longest and shortest ranges are given. For example, **Fl WRG 12-8M** indicates that the range of the white light is 12 nautical miles, the range of green light is 8 nautical miles, and the range of the red light is somewhere between 8 and 12 nautical miles..

Positioning of Aids to Navigation - The fixed and floating aids to navigation depicted on charts have varying degrees of reliability. Floating aids are moored to sinkers by varying lengths of chain and may shift due to sea conditions and other causes. Buoys may also be carried away, capsized or sunk. Lighted buoys may be extinguished and sound signals may not function, because of ice or other causes. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly on floating aids, but will also use bearings from fixed objects and aids to navigation on shore.

Colors - Color conveys the nature and importance of features found on nautical charts. Chart elements significant to marine navigation, such as lights, compass roses and regulated areas, are emphasized with magenta. Lateral marks on NOAA charts are shown with a red or green fill. Shades of blue depict potential hazards to navigation, typically shallow water and submerged obstructions. Areas of deeper water believed to be clear of obstructions are shown as white. Land, and other features that are always dry, are depicted with buff on NOAA charts and gray on NGA charts. Foreshore and other intertidal features are portrayed with a green tint. Other colors may be used to provide additional information, such as protected areas, which are outlined in blue or green and mineral lease blocks, which are outlined in red.

Traffic Separation Schemes - Traffic separation schemes show recommended vessel traffic lanes to increase safety of navigation, particularly in areas of high-density shipping. These schemes are described in the International Maritime Organization (IMO) publication *Ships' Routeing*. Traffic separation schemes are generally shown on nautical charts at scales of 1:600,000 and larger. When possible, traffic separation schemes are plotted to scale and shown as depicted in Section M.

Conversion Scales - Depth conversion scales are provided on all charts to enable the user to work in meters, fathoms or feet.

Correction Date - The date of each new chart edition is shown below the lower left border of the chart. The date of the latest NGA-issued U.S. Notice to Mariners applied to the chart is shown after the edition date. NOAA charts include the date of the latest U.S. Coast Guard Local Notice to Mariners applied to the chart.

Additional Resources - Information about the use of nautical charts, aids to navigation, sounding datum, and the general practice of navigation can be found in *The American Practical Navigator*, available via the "Publications" hyperlink at http://msi.nga.mil/NGAPortal/MSI.portal.

Tide and tidal current data in U.S. waters is available from the NOAA Center for Operational Oceanographic Products and Services at http://tidesandcurrents.noaa.gov.

Detailed information about specific lights, buoys, and beacons located in United States waters, and general information about the U.S. Aids to Navigation System and the Uniform State Waterway Marking Systems is published in the U.S. Coast Guard Light List, available at http://www.navcen.uscg.gov/?pageName=lightLists. Information about lighted and radio aids to navigation located in waters outside of the United States is published in the NGA List of Lights, available via the "Publications" hyperlink at http://msi.nga.mil/NGAPortal/MSI.portal.

Other important information that cannot be shown conveniently on nautical charts can be found in the NOAA U.S. Coast Pilot® publications, available at http://www.nauticalcharts.noaa.gov/staff/chartspubs.html, or in the NGA Sailing Directions publications, available via the "Publications" hyperlink at http://msi.nga.mil/NGAPortal/MSI.portal.

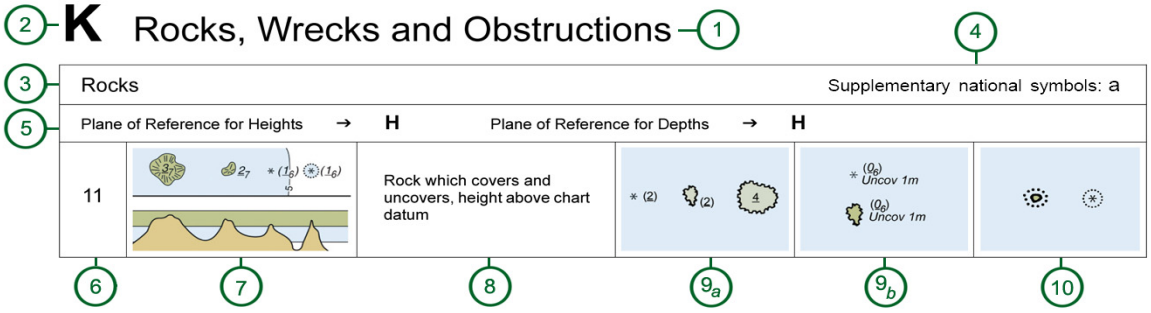
U.S. Nautical Chart Catalogs and Indexes - These catalogs list nautical charts, auxiliary maps, and related publications. They include general information relative to the use and ordering of nautical products. NOAA catalogs are available at http://www.nauticalcharts.noaa.gov/mcd/ccatalogs.htm. NGA product catalog entries are available as a searchable database via the "Product Catalog" hyperlink at http://msi.nga.mil/NGAPortal/MSI.portal.

Corrections and Comments - Notices of corrections to this publication are published in the U.S. Notice to Mariners, available via the “Notice to Mariners” hyperlink at http://msi.nga.mil/NGAPortal/MSI.portal.

Users should refer corrections, additions and comments to the Worldwide Navigational Warning Service 24-hour Watch Desk, toll free: 1-800-362-6289, commercial: 571-547-5455, DSN: 547-5455, e-mail: navsafety@nga.mil or mcdpubs@nga.mil, or by mail to:

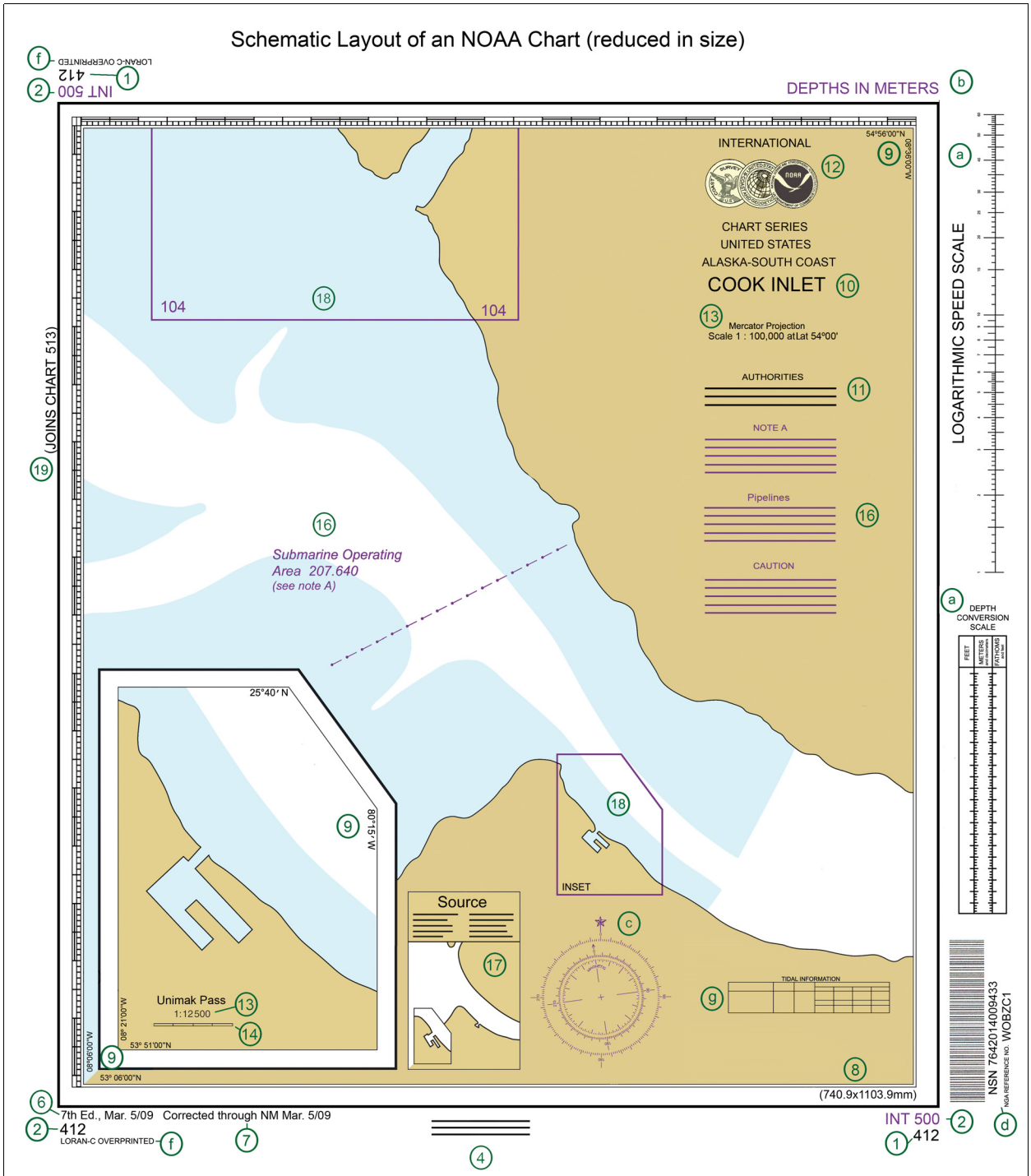
Maritime Safety Office
Mail Stop N64-SH
National Geospatial-Intelligence Agency
7500 GEOINT Drive
Springfield, VA 22150-7500

Schematic Layout of Chart No.1:



1	Section
2	Section designation
3	Sub-section
4	Reference to “Supplementary national symbols” at the end of each section
5	Cross-reference to terms in other sections
6	Column 1: Numbering system following the “Chart Specification of the IHO”. A letter in this column indicates a supplementary national symbol or abbreviation for which there is no international equivalent
7	Column 2: Representation of symbols that follow the “Chart Specifications of the IHO”
8	Column 3: Description of symbols, term, or abbreviation
9_a	Column 4: Representation used on charts produced by the National Ocean Service (NOS), if different from column 2. In certain instances, the representation is clarified by a label on the chart
9_b	Column 5: Representation used on charts produced by National Geospatial-Intelligence Agency (NGA) *Note: When NOS and NGA symbols are identical, their columns are combined*
10	Column 6: Representation of symbols that may appear on NGA reproductions of foreign charts

A Chart Number, Title and Marginal Notes



Magnetic Features → **B**	Tidal Data → **H**	Satellite Navigation Systems → **S**

1	Chart number in national chart series
2	Chart number in International (INT) chart series
3	Chart datum

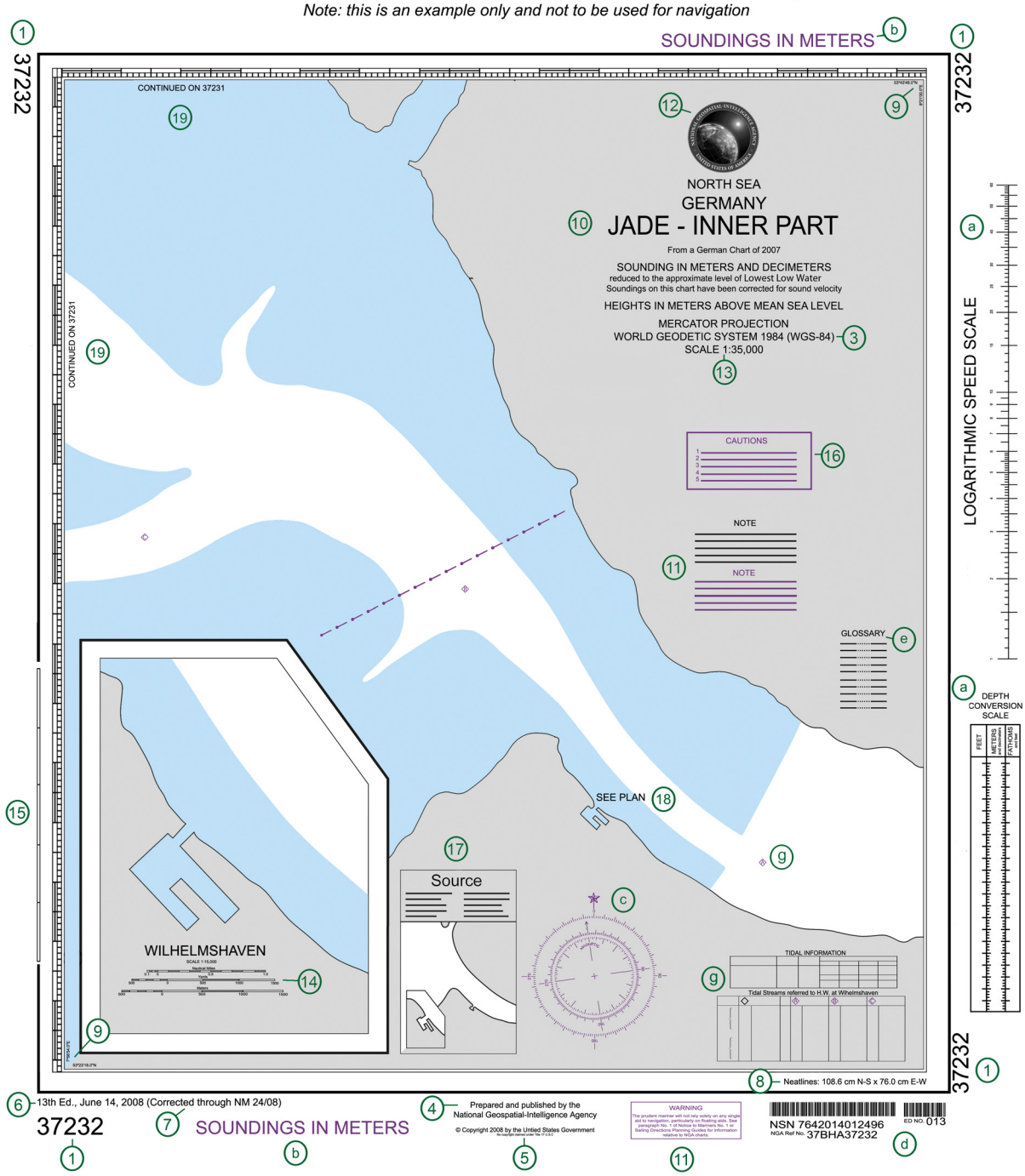
A Chart Number, Title and Marginal Notes

4	Publication note (imprint)
5	Copyright note
6	Edition note
7	Notice to Mariners corrections
8	Dimensions of inner borders
9	Corner coordinates
10	Chart title
11	Explanatory notes on chart construction, etc. To be read before using chart
12	Seal(s)
13	Scale of chart. Some charts have scale at a stated latitude
14	Linear scale on large-scale charts
15	Linear border scale on large-scale charts. On smaller scales use latitude borders for sea miles
16	Cautionary notes (if any), Information on particular features, to be read before using chart
17	Source Diagram (if any). The source Diagram should be studied before using the chart in order to assess the reliability of the sources. Navigators should be cautious where surveys are inadequate
18	Reference to a larger-scale chart
19	Reference to an adjoining chart of similar scale
20	Instruction to refer to complementary nautical publications
a	Conversion Scales.
b	Reference to the units used for depth measurement
c	Compass Rose
d	Bar code and stock number
e	Glossary: Translation of words on chart that are not in English
f	Identification of a latticed chart (if any)
g	Tidal and Tidal Stream information within the chart coverage

A Chart Number, Title and Marginal Notes

Schematic Layout of an NGA Chart (reduced in size)

Note: this is an example only and not to be used for navigation



Magnetic Features → **B** Tidal Data → **H** Satellite Navigation Systems → **S**

(1)	Chart number in national chart series
(2)	Chart number in International (INT) chart series
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A Chart Number, Title and Marginal Notes

④	Publication note (imprint)
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⑮	Linear border scale on large-scale charts. On smaller scales use latitude borders for sea miles
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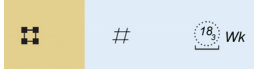
ⓖ	Tidal and Tidal Stream information within the chart coverage

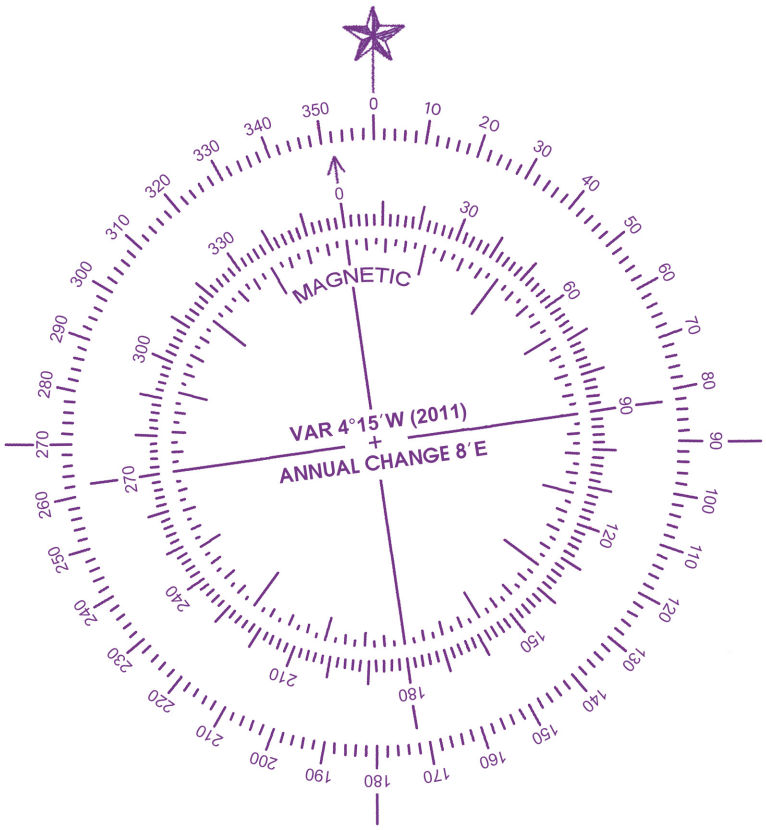
B Positions, Distances, Directions and Compass

Geographical Positions					
1	Lat	Latitude			
2	Long	Longitude			
3		International Meridian (Greenwich)			
4	°	Degree(s)			
5	'	Minute(s) of arc			
6	"	Second(s) of arc			
7	*PA*	Position approximate	PA	(PA)	
8	*PD*	Position doubtful	PD	(PD)	
9	N	North			
10	E	East			
11	S	South			
12	W	West			
13	NE	Northeast			
14	SE	Southeast			
15	NW	Northwest			
16	SW	Southwest			
Control Points					
20	◬	Triangulation point			
21	⊕	Observation spot	⊕ Obs Spot		
22	⊙	Fixed point	⊙		
23	⊤	Benchmark	○ BM		
24		Boundary mark			
25.1	○ *km 32*	Distance along waterway, no visible marker			
25.2	○ km 32	Distance along waterway, with visible marker			
Symbolized Positions (Examples)					
30		Symbols in plan: position is center of primary symbol			

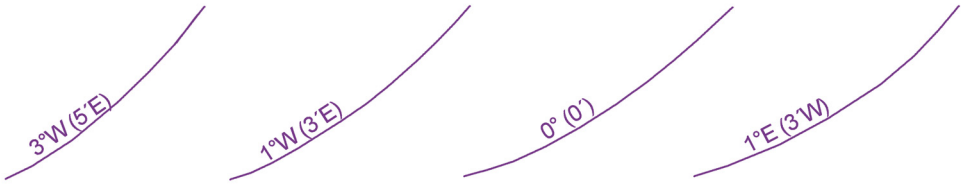
B Positions, Distances, Directions and Compass

31		Symbols in profile: position is at bottom of symbol		
32	⊙ Mast ⊙ MAST ☆	Point symbols: accurate positions	⊙ MAST	
33	○ Mast PA	Approximate position	○ Mast	
Units			Supplementary national symbols: a – m	
40	km	Kilometer(s)		
41	m	Meter(s)		
42	dm	Decimeter(s)		
43	cm	Centimeter(s)		
44	mm	Millimeter(s)		
45	M	International nautical mile(s) or, sea mile(s) (1852m)	Mi NMi NM	
46		Cable (0.1M)	cbl	
47	ft	Foot/Feet		
48		Fathom(s)	fm	
49	h	Hour	hr	
50	m min	Minute(s) of time		
51	s sec	Second(s) of time		
52	kn	Knot(s)		
53	t	Tonne(s), Ton(s) Tonnage (weight)		
54	cd	Candela		
Magnetic Compass			Supplementary national symbols: n	
60		Variation	var VAR	
61		Magnetic	mag	
62		Bearing	brg	
63		True	T	
64		Decreasing		
65		Increasing		
66		Annual change		
67		Deviation	dev	

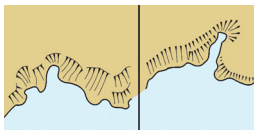
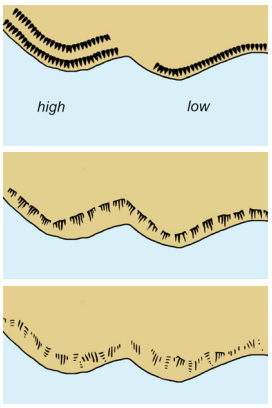
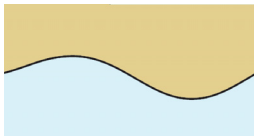
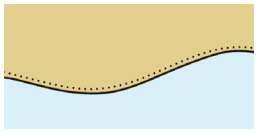
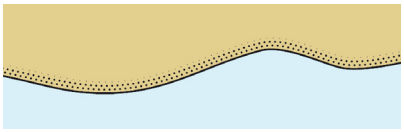
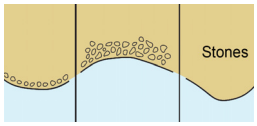
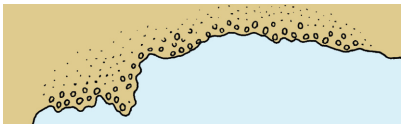
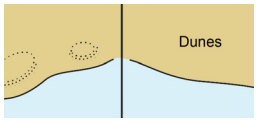
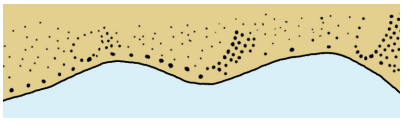
B Positions, Distances, Directions and Compass

68.1	Magnetic Variation 4°30′W 2011 (8′E)	Note of magnetic variation, in position		
68.2	Magnetic Variation at 55°N 8°W 4°30'W 2011 (8'E)	Note of magnetic variation, out of position		
70	Compass rose, normal pattern (smaller patterns of compass rose may be used) Magnetic variation (example): on magnetic north arrow VAR 4º15'W (2011) means Magnetic Variation was 4º15'W in 2011 ANNUAL CHANGE 8'W means annual change is 8'E or decreasing 8' annually  			

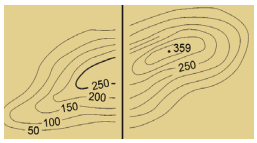
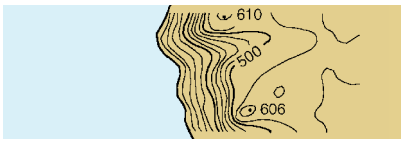
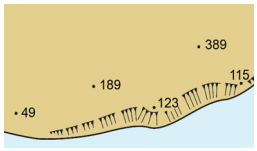
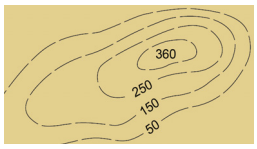
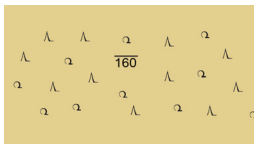
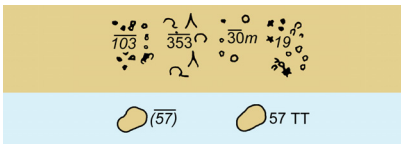
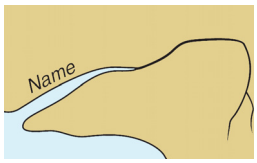
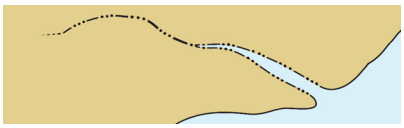
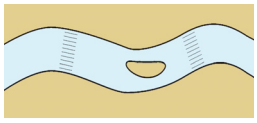
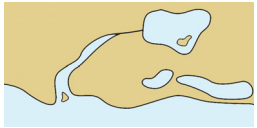
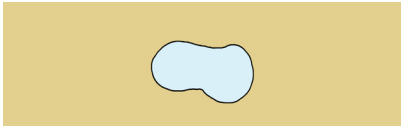
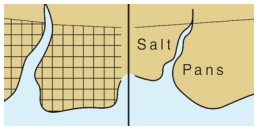
B Positions, Distances, Directions and Compass

71	Isogonic lines, Isogonals			
	MAGNETIC VARIATION LINES ARE FOR 2008 The magnetic variation is shown in degrees, followed by the letter W or E, as appropriate, at certain positions on the lines. The annual change is expressed in minutes with the letter W or E and is given in brackets, immediately following the variation.  			
82.1	±15°	Local magnetic anomaly: *Within the enclosed area the magnetic variation may deviate from the normal by the value shown*		±15°
82.2	Local Magnetic Anomaly (see Note)	Local magnetic anomaly: *Where the area affected cannot be easily defined, a legend only is shown at the position*	LOCAL MAGNETIC ANOMALY (see note)	Local Magnetic Disturbance (see Note) Local Magnetic Anomaly (see Note)
Supplementary National Symbols				
a		Square meter	m^2	
b		Cubic meter	m^3	
c		Inch(es)	in	
d		Yard(s)	yd	
e		Statute mile	St M St Mi	
f		Microsecond(s)	*μsec* *μs*	
g		Hertz	Hz	
h		Kilohertz	kHz	
i		Megahertz	MHz	
j		Cycles/second	cps c/s	
k		Kilocycle	kc	
l		Megacycle	Mc	
m		Ton(s) (U.S. short ton) (2,000lbs)	T	
n		Degree(s)	deg	

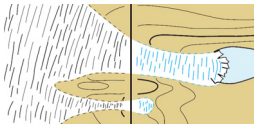
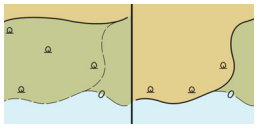
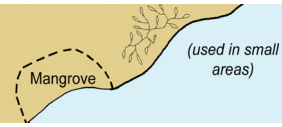
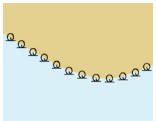
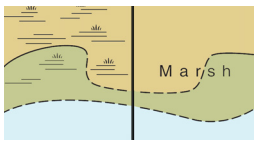
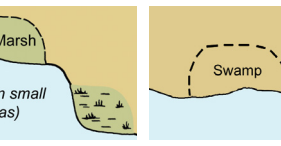
C Natural Features

Coastline			Supplementary national symbols: a – d, p – t	
Foreshore → **I, J**				
1		Coastline, surveyed		
2		Coastline, unsurveyed		
3		Cliffs, Steep coast, Steep coast with rock cliffs		
4		Hillocks		
5		Flat coast		
6		Sandy shore		
7		Stony shore, Shingly shore		
8		Sandhills, Dunes		

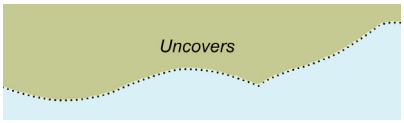
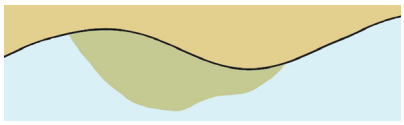
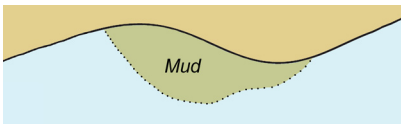
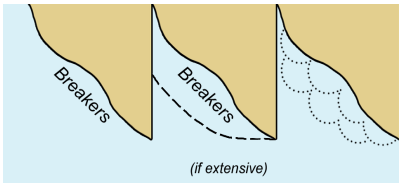
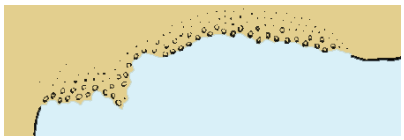
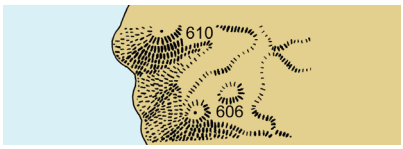
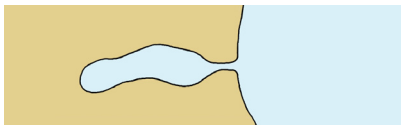
C Natural Features

Relief			Supplementary national symbols: e – g	
Plane of reference for heights → **H**				
10		Contour lines with values and spot height		
11		Spot heights		
12		Approximate contour lines with values and approximate height		
13		Form lines with spot height		
14		Approximate height of top of trees (above height datum)		
Water Features, Lava			Supplementary national symbols: h	
20		River, Stream		
21		Intermittent river		
22		Rapids, Waterfalls		
23		Lakes		
24		Salt pans		

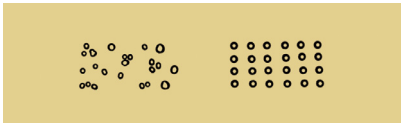
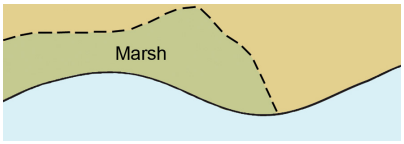
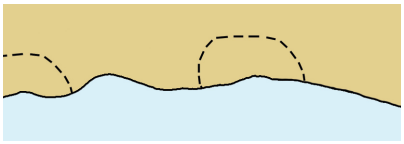
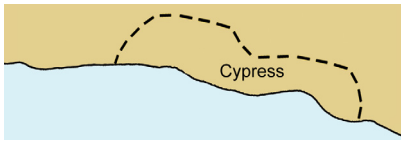
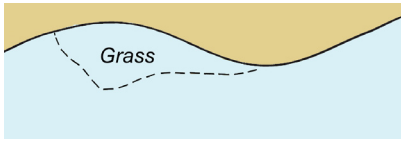
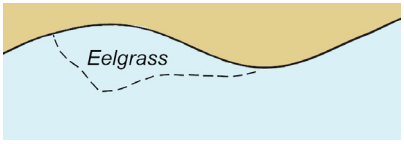
C Natural Features

25		Glacier		
26		Lava flow		
Vegetation				Supplementary national symbols: i - o
30		Woods in general		
31	Prominent trees (isolated or in groups)			
31.1		Deciduous tree		
31.2		Evergreen (except conifer)		
31.3		Conifer		
31.4		Palm		
31.5		Nipa Palm		
31.6		Casuarina		
31.7		Filao		
31.8		Eucalypt		
32		Mangrove		
33		Marsh, Swamp, Reed beds		

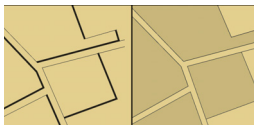
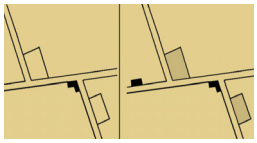
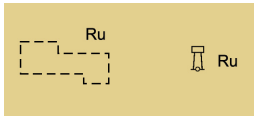
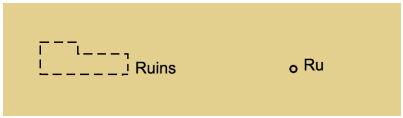
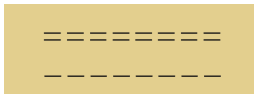
C Natural Features

Supplementary National Symbols				
a		Chart sounding datum line (surveyed)		
b		Approximate sounding datum line (inadequately surveyed)		
c		Foreshore; Strand (in general) Stones; Shingle; Gravel; Mud; Sand		
d		Breakers along a shore		
e		Rubble		
f		Hachures		
g		Shading		
h		Lagoon		
i		Deciduous woodland		

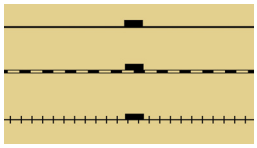
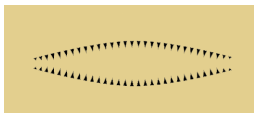
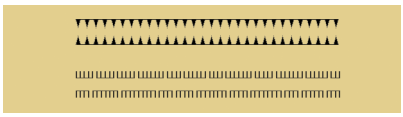
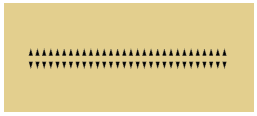
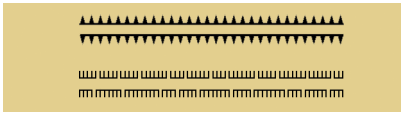
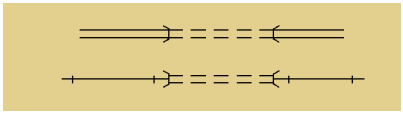
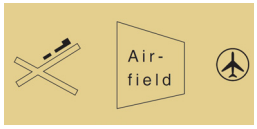
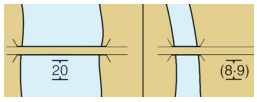
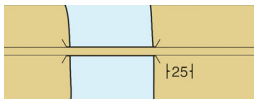
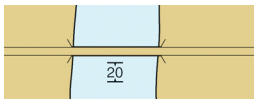
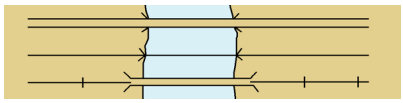
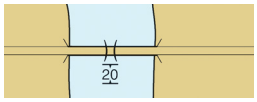
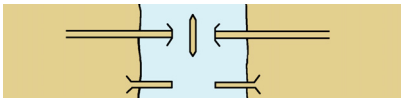
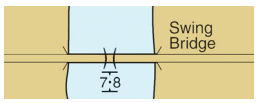
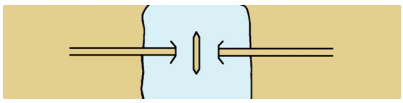
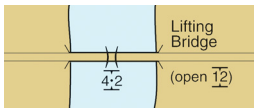
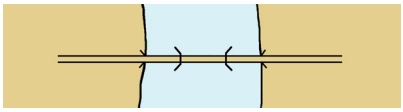
C Natural Features

j		Coniferous woodland		
k		Tree plantation		
l		Cultivated fields		
m		Grassfields		
n		Paddy (rice) fields		
o		Bushes		
p		Apparent Shoreline		
q		Vegetation or topographic (Feature Area Limit- in general)		
r		Cypress		
s		Grass		
t		Eelgrass		

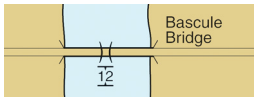
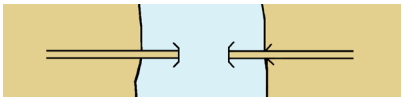
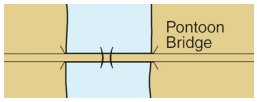
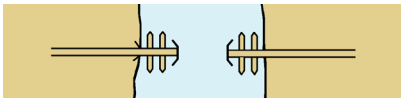
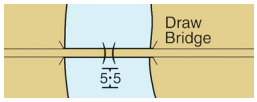
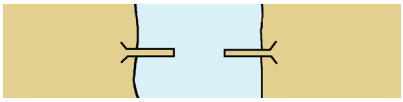
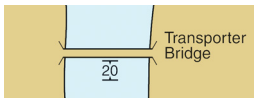
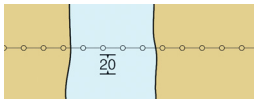
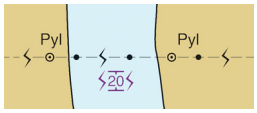
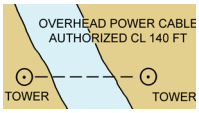
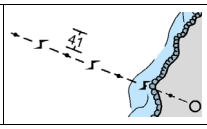
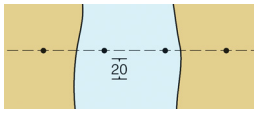
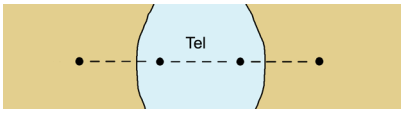
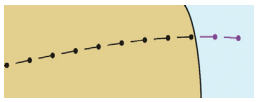
D Cultural Features

Settlements, Buildings				
Height of objects → **E**			Landmarks → **E**	
1		Urban area		
2		Settlement with scattered buildings		
3		Settlement (on medium and small-scale charts)		
4		Village		
5		Buildings		
6		Important building in built-up area		
7		Street name, Road name		
8		Ruin, Ruined landmark		
Roads, Railways, Airfield			Supplementary National Symbols: a – c	
10		Motorway		
11		Road (hard surfaced)		
12		Track, Path (loose or unsurfaced)		

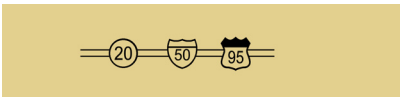
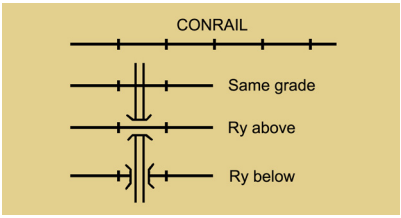
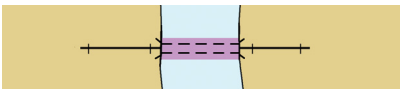
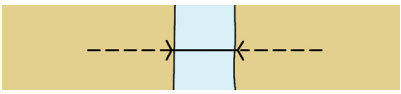
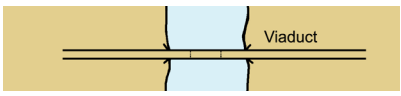
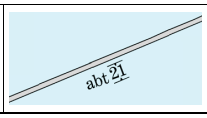
D Cultural Features

13		Railway, with station		
14		Cutting		
15		Embankment		
16		Tunnel		
17		Airport, Airfield		
Other Cultural Features			Supplementary National Symbols: d - i	
20		Vertical clearance above High Water		
21		Horizontal clearance		
22		Fixed bridge with vertical clearance		
23.1		Opening bridge (in general) with vertical clearance		
23.2		Swing bridge with vertical clearance		
23.3		Lifting bridge with vertical clearance (closed and open)		

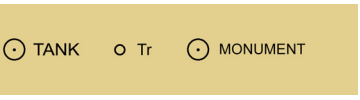
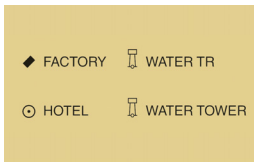
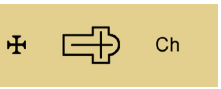
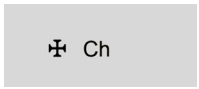
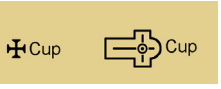
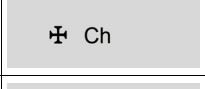
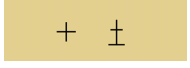
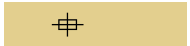
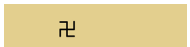
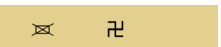
D Cultural Features

23.4		Bascule bridge with vertical clearance		
23.5		Pontoon bridge		
23.6		Draw bridge with vertical clearance		
24		Transporter bridge, with vertical clearance below fixed structure		
25		Overhead transporter, Aerial cableway with vertical clearance		
26		Overhead power cable with pylons and safe vertical clearance	 	
	Note: The safe vertical clearance above the height datum as defined by the responsible authority is given in magenta where known; otherwise the physical vertical clearance is shown in black, as in D 20, for the lowest wires (also see diagram at H 20)			
27		Overhead cable, Telephone line, Telegraph line with vertical clearance		
28		Overhead pipe with vertical clearance		
29		Pipeline on land		

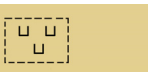
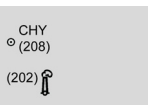
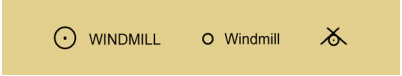
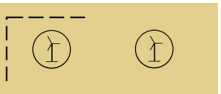
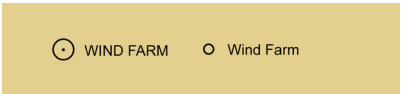
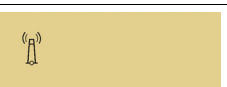
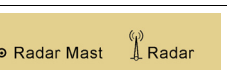
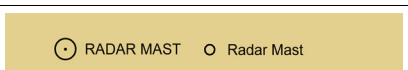
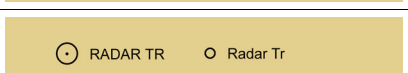
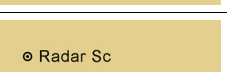
D Cultural Features

Supplementary National Symbols				
a		Highway markers		
b		Railway (Ry) (single or double track) Railroad (RR)		
c		Abandoned railroad		
d		Bridge under construction		
e		Footbridge		
f		Viaduct		
g		Fence		
h		Power transmission line		
i		Approximate vertical clearance		

E Landmarks

Plane of reference for Height → **H**		Lighthouses → **P**			Beacons → **Q**
General					
1		Examples of landmarks			
2		Examples of conspicuous landmarks (On NOAA charts, a large circle with dot and capitals indicate that position is accurate, small circle and lowercase indicates position is approximate)			
3.1		Pictorial sketches (in true position)			
3.2		Pictorial sketches (out of position)			
4		Height of top of a structure above height datum			
5		Height of structure above ground level			
Landmarks					
10.1		Church			
10.2		Church tower			
10.3		Church spire			
10.4		Church cupola			
11		Chapel			
12		Cross, Calvary			
13		Temple			
14		Pagoda			
15		Shinto shrine, Joss house			
16		Buddhist temple or shrine			

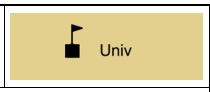
E Landmarks

17		Mosque, Minaret			
18		Marabout			
19		Cemetery			
20		Tower			
21		Water tower, Water tank on a tower			
22		Chimney			
23		Flare stack (on land)			
24		Monument (including column, pillar, obelisk, statue)			
25.1		Windmill			
25.2		Windmill (without sails)			
26.1		Wind turbine, Windmotor			
26.2		Wind farm			
27		Flagstaff, Flagpole			
28		Radio mast, Television mast			
29		Radio tower, Television tower			
30.1		Radar mast			
30.2		Radar tower			
30.3		Radar scanner			

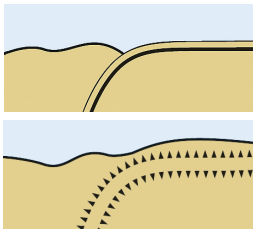
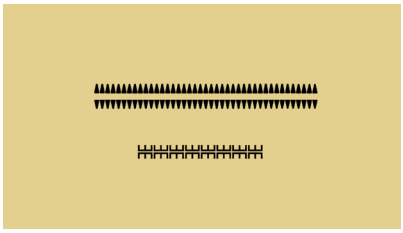
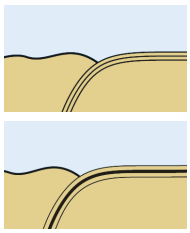
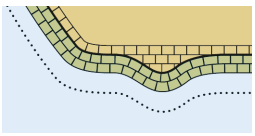
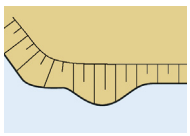
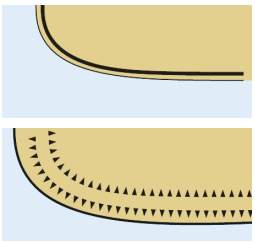
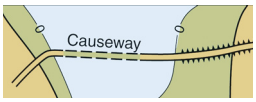
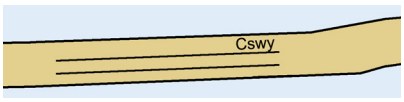
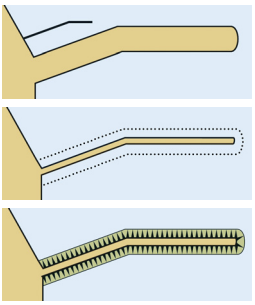
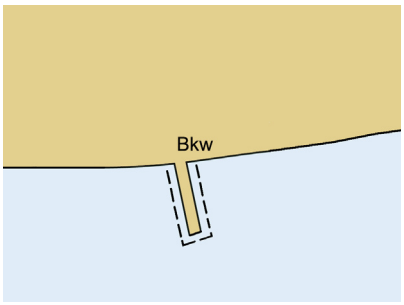
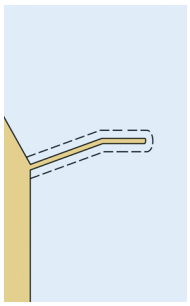
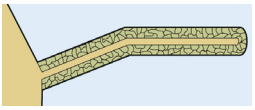
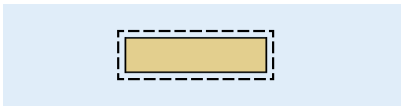
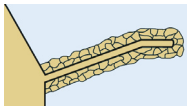
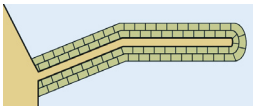
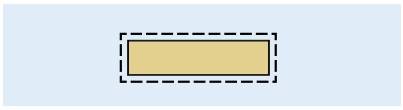
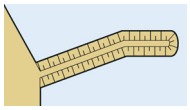
E Landmarks

30.4	Radome	Radar dome	DOME (RADAR) Dome (Radar)	RADOME Radome	
31		Dish aerial	ANT (RADAR) Ant (Radar)		
32	Tanks	Tanks	TANK Tk		
33	Silo Silo	Silo	SILO Silo ELEVATOR Elevator		
34.1		Fortified structure (on large-scale charts)			
34.2		Castle, Fort, Blockhouse (on smaller-scale charts)			
34.3		Battery, Small fort (on smaller-scale charts)			
35.1		Quarry (on large-scale charts)			
35.2		Quarry (on smaller-scale charts)			
36		Mine			
37.1		Recreational vehicle site			
37.2		Camping site (including recreational vehicles)			
Supplementary National Symbols					
a		Muslim shrine			
b		Tomb			
c		Watermill			
d		Factory	Facty		
e		Well	Well		
f		School	Sch	Sch	
g		Hospital	Hosp		

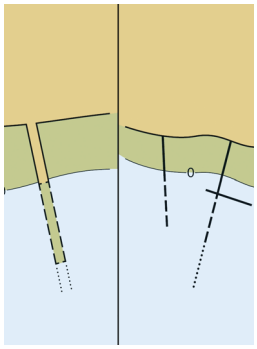
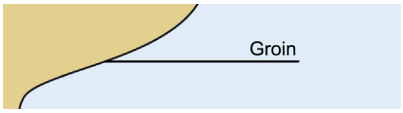
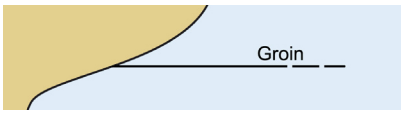
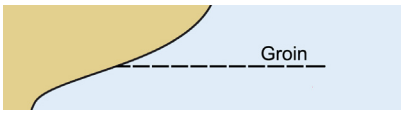
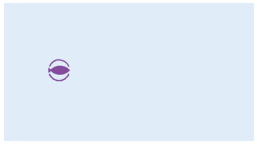
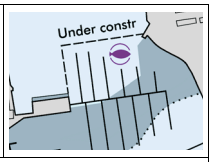
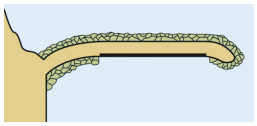
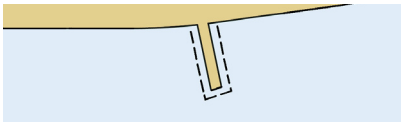
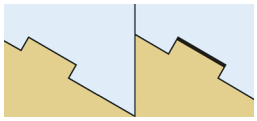
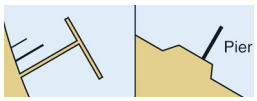
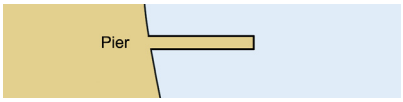
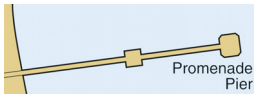
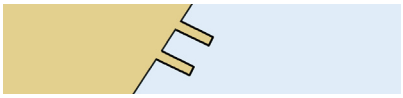
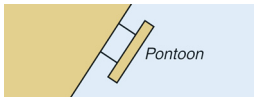
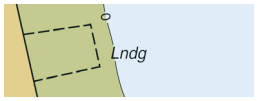
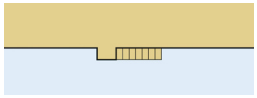
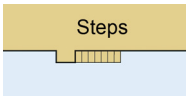
E Landmarks

h		University	■ Univ	 Univ	
i		Gable	⊙ GAB	o Gab	
k		Telegraph Telegraph office	Tel Tel Off		
l		Magazine	Magz		
m		Government house	Govt Ho		
n		Institute	Inst		
o		Courthouse	Ct Ho		
p		Pavilion	Pav		
q		Telephone	T		
r		Limited	Ltd		
s		Apartment	Apt		
t		Capitol	Cap		
u		Company	Co		
v		Corporation	Corp		

F Ports

Protection Structures			Supplementary national symbols: a – c	
1		Dyke, Levee, Berm		
2.1		Seawall (on large-scale charts)		
2.2		Seawall (on smaller-scale charts)		
3		Causeway		
4.1		Breakwater (in general)		
4.2		Breakwater (loose boulders, tetrapods, etc.)		
4.3		Breakwater (slope of concrete or masonry)		
5		Training wall (partly submerged at high water)		

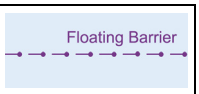
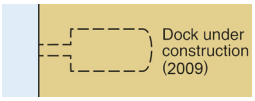
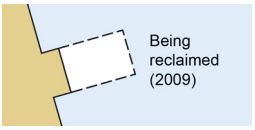
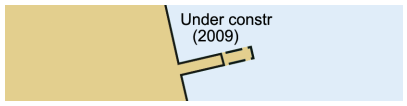
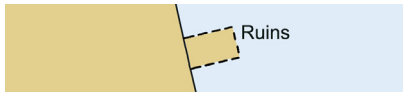
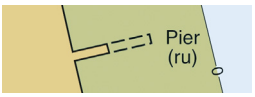
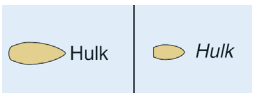
F Ports

6.1		Groin (always dry)		
6.2		Groin (intertidal)		
6.3		Groin (always under water)		
Harbor Installations				
Depths → **I**		Anchorages, Limits → **N**	Beacons and other fixed marks → **Q**	Marina → **U**
10		Fishing harbor		
11.1		Boat harbor, Marina		
11.2		Yacht berths without facilities		
11.3		Yacht club, Sailing club		
12		Mole (with berthing facility)		
13		Quay, Wharf		
14		Pier, Jetty		
15		Promenade pier		
16		Pontoon		
17		Landing for boats		
18		Steps, Landing stairs		

F Ports

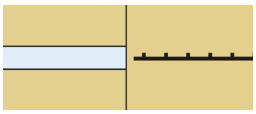
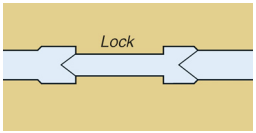
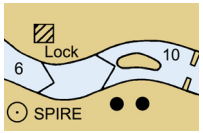
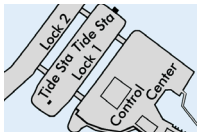
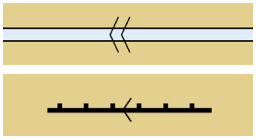
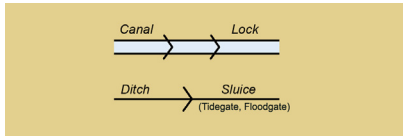
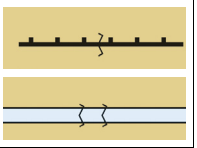
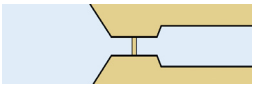
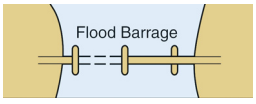
19.1	4 B A 54	Designation of berth	3 A 3	
19.2	V	Visitors' berth		
20	Dn Dns	Dolphin	Dol (Great Lakes) Dol	Dn
21		Deviation dolphin		
22		Minor post or pile	Pile (Great Lakes) Pile	
23	Slip	Slipway, Patent slip, Ramp		
24		Gridiron, Scrubbing grid		
25		Dry dock, Graving dock		
26	*Floating Dock*	Floating dock		
27	7.5m	Non-tidal basin, Wet dock		
28		Tidal basin, Tidal harbor		
29.1	Floating Barrier	Floating barrier, e.g. oil barrier, security barrier		

F Ports

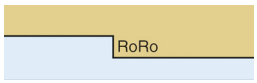
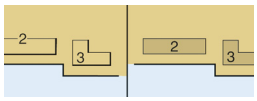
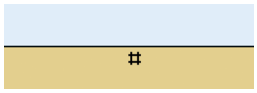
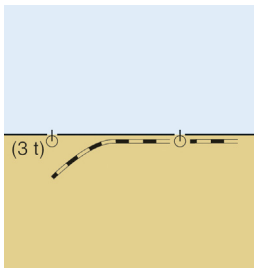
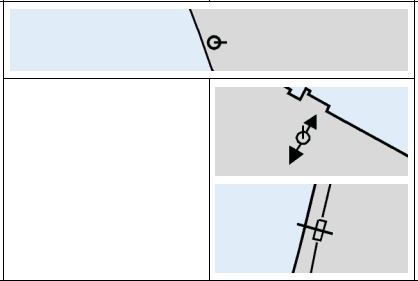
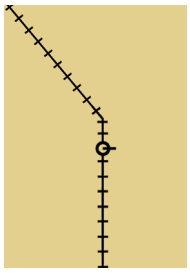
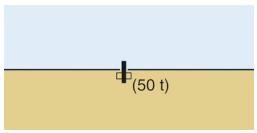
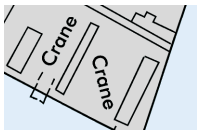
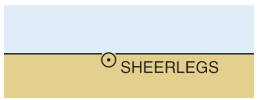
29.2		Oil retention barrier (high pressure pipe)		
30		Works on land, with year date		
31		Works at sea, Area under reclamation, with year date	 	
32	Under construction (2009) Works in progress (2009)	Works under construction, with year date		
33.1		Ruin		
33.2		Ruined pier, partly submerged at high water		
34		Hulk		

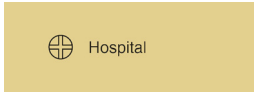
Canals, Barrages — Supplementary national symbol: d

Clearances → **D** — Signal Stations → **T** — Distance Marks → **B**

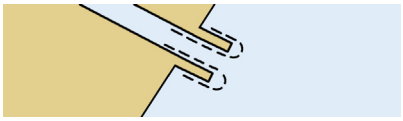
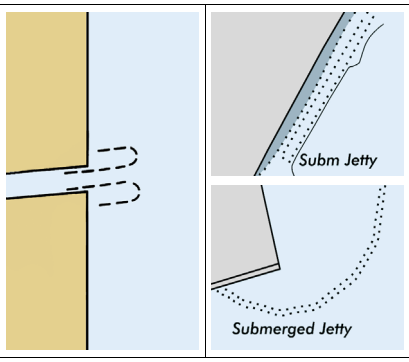
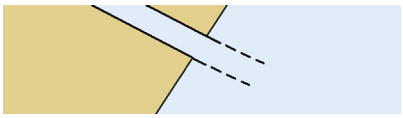
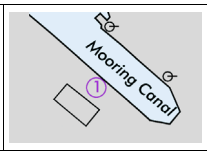
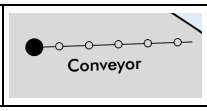
40		Canal		
41.1		Lock (on large-scale charts)	 	
41.2		Lock (on smaller-scale charts)		
42		Caisson, Gate		
43		Flood barrage		
44		Dam, Weir (direction of flow)		

F Ports

Transhipment Facilities			Supplementary national symbols: g	
Roads → **D**		Railways → **D**		Tanks → **E**
50		Roll-on, Roll-off (RoRo) Ferry Terminal		
51		Transit shed, Warehouse (with designation)		
52		Timber yard		
53.1		Crane with lifting capacity, Traveling crane (on railway)		
53.2		Container crane (with lifting capacity)		
53.3		Sheerlegs (conspicuous)		

Public Buildings			Supplementary national symbol: e – f	
60		Harbormaster's office	Hbr Mr	
61		Custom office	■ Cus Ho	
62.1		Health office, Quarantine building	 Health Office	
62.2		Hospital	■ Hosp	
63		Post office	■ PO	

F Ports

Supplementary National Symbols				
a		Jetty (partly below MHW)		
b		Submerged jetty		
c		Jetty (on smaller-scale charts)		
d		Mooring Canal		
e		Quarantine office		
f		Pump-out facilities		
g		Conveyor		

G Topographic Terms

Coast			
1	*Island*	8	*Head, Headland*
2	*Islet*	9	*Point*
3	*Cay*	10	*Spit*
4	*Peninsula*	11	*Rock*
5	*Archipelago*	12	*Salt marsh, Saltings*
6	*Atoll*	13	*Lagoon*
7	*Cape*		
Natural Inland Features			
20	*Promontory*	30	*Plateau*
21	*Range*	31	*Valley*
22	*Ridge*	32	*Ravine, Cut*
23	*Mountain, Mount*	33	*Gorge*
24	*Summit*	34	*Vegetation*
25	*Peak*	35	*Grassland*
26	*Volcano*	36	*Paddy field*
27	*Hill*	37	*Bushes*
28	*Boulder*	38	*Deciduous woodland*
29	*Table-land, Tableland*	39	*Coniferous woodland*
Settlements			
50	*City, Town*	53	*Farm*
51	*Village*	54	*Saint*
52	*Fishing village*		
Buildings			
60	*Structure*	74	*Institute*
61	*House*	75	*Cathedral*
62	*Hut*	76	*Monastery, Convent*
63	*Multi-story building*	77	*Lookout station, Watch tower*
64	*Castle*	78	*Navigation school*
65	*Pyramid*	79	*Naval college*
66	*Column*	80	*Factory*
67	*Mast*	81	*Brick kiln, Brick works*
68	*Lattice tower*	82	*Cement works*
69	*Mooring mast*	83	*Water mill*
70	*Floodlight*	84	*Greenhouse*
71	*Town hall*	85	*Warehouse, Storehouse*
72	*Office*	86	*Cold store, Refrigerating storage*
73	*Observatory*	87	*Refinery*

G Topographic Terms

88	*Power station*	94	*Well*
89	*Electric works*	95	*Telegraph office*
90	*Gas works*	96	*Hotel*
91	*Water works*	97	*Sailors' home*
92	*Sewage works*	98	*Spa hotel*
93	*Machine house, Pump house*		

Road, Rail and Air Traffic

110	*Street, Road*	115	*Footbridge*
111	*Avenue*	116	*Runway*
112	*Tramway*	117	*Landing lights*
113	*Viaduct*	118	*Helicopter landing site*
114	*Suspension bridge*		

Ports, Harbors

130	*Tidal barrier*	144	*Customs harbor*
131	*Boat lift, Slip lift, Hoist*	145	*Naval port*
132	*Minor canal*	146	*Industrial harbor*
133	*Sluice*	147	*Commercial port, Trade port*
134	*Basin*	148	*Building harbor*
135	*Reservoir*	149	*Oil harbor*
136	*Reclamation area*	150	*Ore harbor*
137	*Port*	151	*Grain harbor*
138	*Harbor*	152	*Container harbor*
139	*Haven*	153	*Timber harbor*
140	*Inner harbor*	154	*Coal harbor*
141	*Outer harbor*	155	*Ferry harbor*
142	*Deep water harbor*	156	*Police*
143	*Free port*		

Harbor Installations

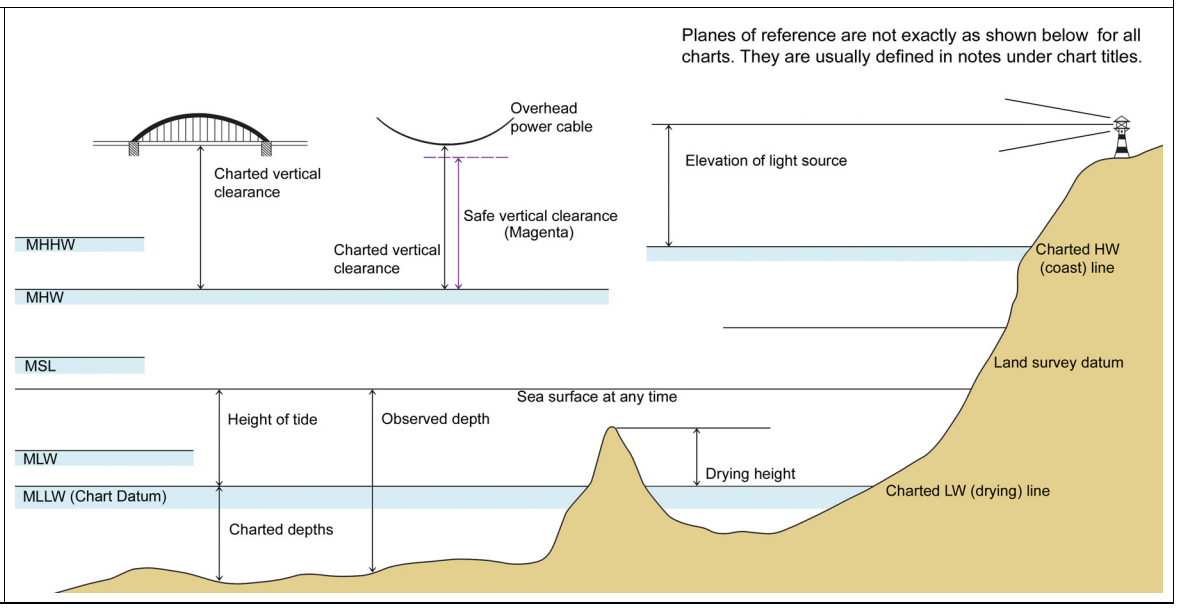
170	*Terminal*	180	*Row of piles*
171	*Building slip*	181	*Bollard*
172	*Building yard*	182	*Conveyor*
173	*Buoy yard, Buoy dump*	183	*Storage tanker*
174	*Bunker station*	184	*Lighter Aboard Ship- LASH*
175	*Reception facilities for oily wastes*	185	*Liquified Natural Gas- LNG*
176	*Tanker cleaning facilities*	186	*Liquified Petroleum Gas- LPG*
177	*Cooling water intake/outfall*	187	*Very Large Crude Carrier- VLCC*
178	*Floating barrier boom*	188	*Ultra Large Crude Carrier- ULCC*
179	*Piling*	189	*Shipyard*

H Tides and Currents

Terms Relating to Tidal Levels			Supplementary national symbols: a – i
1	CD	Chart Datum, Datum for sounding reduction	
2	LAT	Lowest Astronomical Tide	
3	HAT	Highest Astronomical Tide	
4	MLW	Mean Low Water	
5	MHW	Mean High Water	
6	MSL	Mean Sea Level	
7		Height datum, Land survey datum	
8	MLWS	Mean Low Water Springs	
9	MHWS	Mean High Water Springs	
10	MLWN	Mean Low Water Neaps	
11	MHWN	Mean High Water Neaps	
12	MLLW	Mean Lower Low Water	
13	MHHW	Mean Higher High Water	
14	MHLW	Mean Higher Low Water	
15	MLHW	Mean Lower High Water	
16	Sp	Spring tide	
17	Np	Neap tide	

Tidal Levels and Charted Data — Tide Gauge → **T**

20



H Tides and Currents

Tide Tables

30

Tidal Levels referred to datum of soundings

Place	Lat N	Long E	Heights in metres above datum			
			MHWS	MHWN	MLWN	MLWS
Norderney, Riffgat	53°42'	7°09'	3.2	2.8	0.9	0.4
Langeoog	53°43'	7°30'	3.4	3.0	0.9	0.4
			MHHW	MLHW	MHLW	MLLW

Tabular statement of semi-diurnal or diurnal tides

Note: The order of the columns of levels will be the same as that used in national tables of tidal predictions

31

Tidal streams referred to . . .

Hours	Geographical Position		
		Directions of streams (degrees)	Rates at spring tides (knots) / Rates at neap tides (knots)
Before High Water 6			
Before High Water 5			
Before High Water 4			
Before High Water 3			
Before High Water 2			
Before High Water 1			
High Water			
After High Water 1			
After High Water 2			
After High Water 3			
After High Water 4			
After High Water 5			
After High Water 6			

	A 53°51.2′N 7°17.8′E			B 53°50.0′N 7°20.9′E			C
−6	261	0.8	0.7	261	0.9	0.6	
−5	170	0.2	0.1	170	0.3	0.2	
−4	097	1.1	0.8	098	1.2	0.9	
−3	095	1.5	1.2	096	1.4	1.1	
−2	094	1.3	1.1	093	1.2	1.0	
−1	092	1.0	0.9	095	1.3	1.0	
0	081	0.7	0.6	080	0.7	0.6	
+1	038	0.3	0.2	035	0.4	0.1	
+2	291	0.6	0.4	292	0.7	0.4	
+3	277	1.0	0.8	273	0.8	0.6	
+4	270	1.2	1.0	271	1.1	0.9	
+5	267	1.1	1.0	265	1.0	0.8	
+6	264	1.0	0.9	270	1.2	1.0	

Tidal stream table

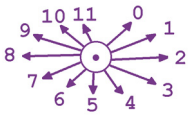
Tidal Streams and Currents

Supplementary national symbols: m – u

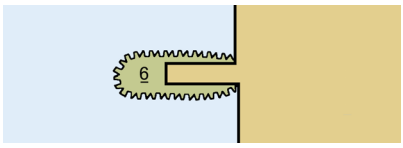
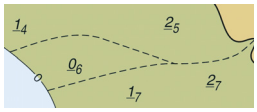
Breakers → **K** Tide Gauge → **T**

40	2.5 kn	Flood tide stream with rate		¼ kn	
41		Ebb tide stream		¼ kn	
42		Current in restricted waters			
43	2.5 – 4.5 kn Jan – Mar (see Note)	Ocean current with rates and seasons			(see Note)
44		Overfalls, tide rips, races	Tide rips Symbol used only in small areas		
45		Eddies	Eddies Symbol used only in small areas		
46	A	Position of tabulated tidal stream data with designation			
47	a	Offshore position for which tidal levels are tabulated			

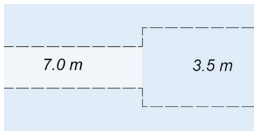
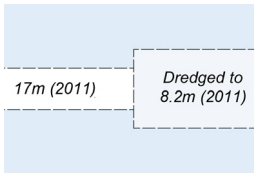
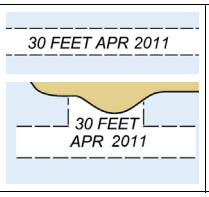
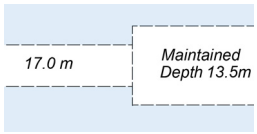
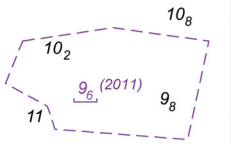
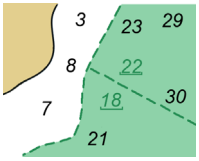
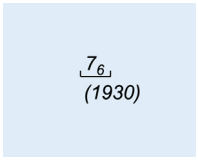
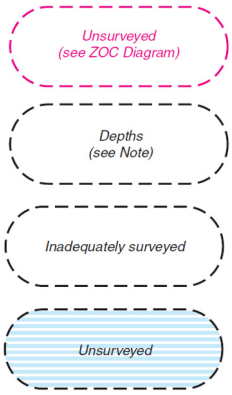
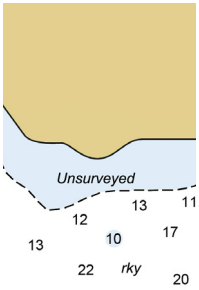
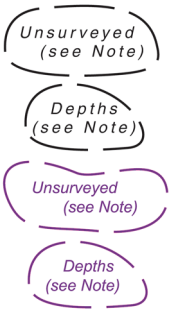
H Tides and Currents

Supplementary National Symbols				
a		High Water	HW	
b		Higher High Water	HHW	
c		Low Water	LW	
d		Low-Water Datum	LWD	
e		Lower Low Water	LLW	
f		Mean Tide Level	MTL	
g		Indian Spring Low Water	ISLW	
h		High-Water full and change (Vulgar establishment of the port)	HWF&C	
i		Low-Water full and change	LWF&C	
j		Columbia River Datum	CRD	
k		Gulf Coast Low Water Datum	GCLWD	
l		Stream	Str	
m		Current, general, with rate		
n		Velocity, Rate	vel	
o		Knots	kn	
p		Height	ht	
q		Flood	fl	
r		New moon		
s		Full moon		
t		Current diagram		
u		Gulf Stream Limits	*Approximate location of Axis of Gulf Stream*	

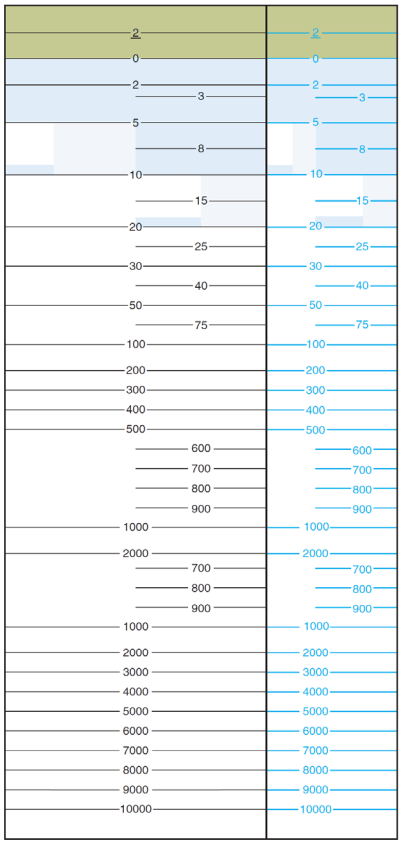
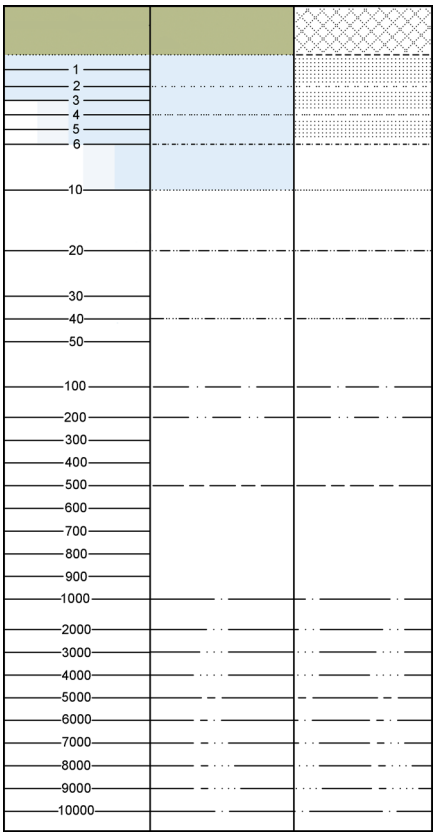
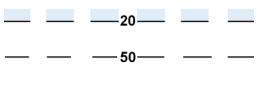
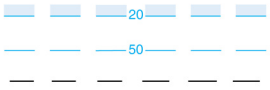
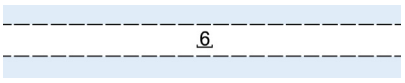
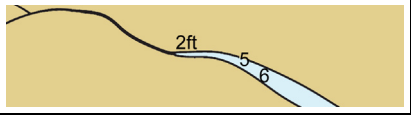
Depths

General				
1	*ED*	Existence doubtful		
2	*SD*	Sounding of doubtful depth		
3.1	*Rep*	Reported, but not confirmed	4 *Rep*	
3.2	*Rep(2011)*	Reported (with year of report), but not confirmed	3 *Rep (2011)*	
4	184 212	Reported, but not confirmed sounding or danger (on small-scale charts only)		
Soundings				Supplementary national symbols: a – c
Plane of Reference for Depths → **H**			Plane of Reference for Heights → **H**	
10	12 9_7	Sounding in true position (NOAA uses upright soundings on English unit charts and sloping soundings on Metric charts)	6¾ $6\frac{3}{4}$	
11	. (48) +(12) 3375	Sounding out of position	(23) 3375	
12	(47)	Least depth in narrow channel	(47)	
13	$\overline{200}$	No bottom found at depth shown		
14	12 9_7	Soundings which are unreliable or taken from a smaller scale source (NOAA uses sloping soundings on English unit charts and upright soundings on Metric charts)		
15		Drying heights and contours above chart datum		
16		Natural watercourse (in intertidal area), tidal gully, tideway		
Depths in Fairways and Areas				Supplementary national symbols: a, b
Plane of Reference for Depths → **H**				
20		Limit of dredged area		

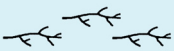
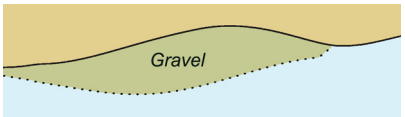
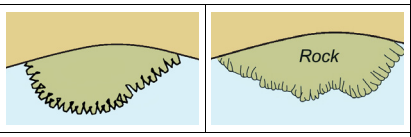
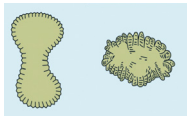
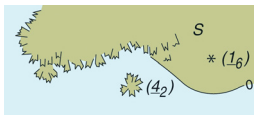
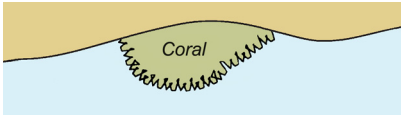
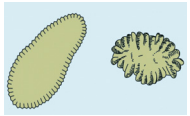
Depths

21		Dredged channel or area with depth of dredging in meters and decimeters			
22		Dredged channel or area with depth and year of the latest control survey			
23		Dredged channel or area with maintained depth			
24		Area swept by wire drag. The depth is shown at Chart Datum (The latest date of sweeping is shown in parentheses)			
25		Unsurveyed or inadequately surveyed area; area with inadequate depth information			

Depths

Depth Contours				
30		Drying Contour Low water line Blue tint, in one or more shades, or tint ribbons are shown to different limits according to the scale and purpose of the chart and teh nature of the bathymetry. On some charts, contours and values are printed in blue.		
31		Approximate depth contours		
Supplementary National Symbols				
a		Swept channel		
b		Swept area, not adequately sounded (shown by purple or green tint)		
c		Stream		

J Nature of the Seabed

Types of Seabed			Supplementary national abbreviations: a – ag	
Rocks → **K**				
1	*S*	Sand		
2	*M*	Mud		
3	*Cy*	Clay		
4	*Si*	Silt		
5	*St*	Stones		
6	*G*	Gravel		
7	*P*	Pebbles		
8	*Cb*	Cobbles		
9.1	*R*	Rock; Rocky	*Rk; rky*	
9.2	*Bo*	Boulders	*Blds*	
10	*Co*	Coral, Coralline algea		
11	*Sh*	Shells (skeletal remains)		
12.1	*S/M*	Two layers, e.g. sand over mud		
12.2	*fS.M.Sh*	The main constituent is given first for mixtures, e.g. fine sand with mud and shells	*f S M Sh*	
13.1	*Wd*	Weed (including kelp)		
13.2		Kelp, Weed	 *Kelp*	
14		Sandwaves	*Sandwaves*	
15		Spring in seabed	 *Spring*	
Types of Seabed, Intertidal Areas				
20		Areas with stones and gravel		
21		Rocky area, which covers and uncovers		
22		Coral reef, which covers and uncovers		

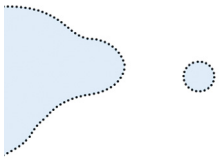
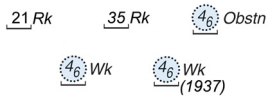
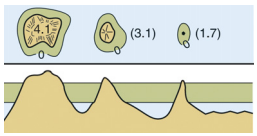
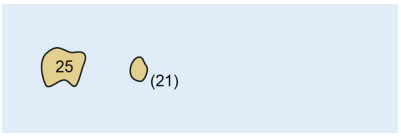
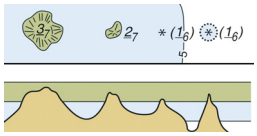
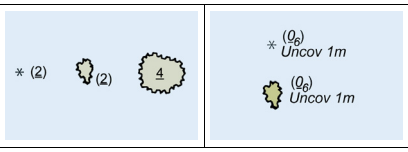
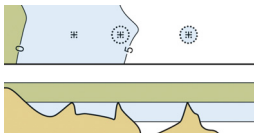
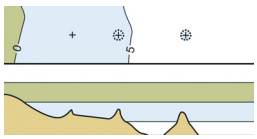
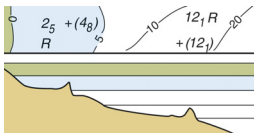
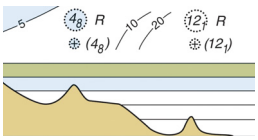
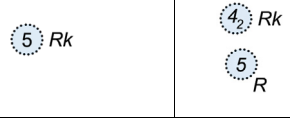
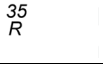
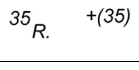
J Nature of the Seabed

Qualifying Terms			Supplementary national symbols: ah – bf	
30	*f*	Fine		Note: J 30-32 to be used only in relation to sand
31	*m*	Medium		
32	*c*	Coarse		
33	*bk*	Broken		
34	*sy*	Sticky		
35	*so*	Soft		
36	*sf*	Stiff		
37	*v*	Volcanic	*vol*	
38	*ca*	Calcareous	*Ca*	
39	*h*	Hard		
Supplementary National Abbreviations				
a		Ground	*Grd*	
b		Ooze	*Oz*	
c		Marl	*Ml*	
d		Shingle	*Sn*	
f		Chalk	*Ck*	
g		Quartz	*Qz*	
h		Schist	*Sch*	
i		Coral head	*Co Hd*	
j		Madrepores	*Mds*	
k		Volcanic ash	*Vol Ash*	
l		Lava	*La*	
m		Pumice	*Pm*	
n		Tufa	*T*	
o		Scoriae	*Sc*	
p		Cinders	*Cn*	
q		Manganese	*Mn*	
r		Oysters	*Oys*	
s		Mussels	*Ms*	
t		Sponge	*Spg*	
u		Kelp	*K*	
v		Grass	*Grs*	
w		Sea-tangle	*Stg*	
x		Spicules	*Spi*	
y		Foraminifera	*Fr*	
z		Globigerina	*Gl*	
aa		Diatoms	*Di*	
ab		Radiolaria	*Rd*	
ac		Pteropods	*Pt*	

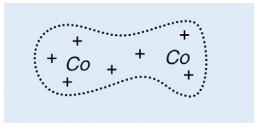
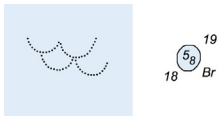
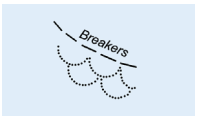
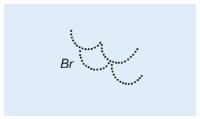
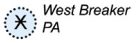
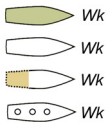
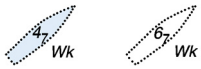
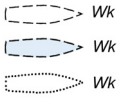
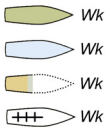
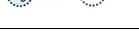
J Nature of the Seabed

ad		Polyzoa	*Po*	
ae		Cirripedia	*Cir*	
af		Fucus	*Fu*	
ag		Mattes	*Ma*	
ah		Small	*sml*	
ai		Large	*lrg*	
aj		Rotten	*rt*	
ak		Streaky	*str*	
al		Speckled	*spk*	
am		Gritty	*gty*	
an		Decayed	*dec*	
ao		Flinty	*fly*	
ap		Glacial	*glac*	
aq		Tenacious	*ten*	
ar		White	*wh*	
as		Black	*bl; bk*	
at		Violet	*vi*	
au		Blue	*bu*	
av		Green	*gn*	
aw		Yellow	*yl*	
ax		Orange	*or*	
ay		Red	*rd*	
az		Brown	*br*	
ba		Chocolate	*ch*	
bb		Gray	*gy*	
bc		Light	*lt*	
bd		Dark	*dk*	
be		Varied	*vard*	
bf		Uneven	*unev*	

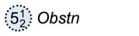
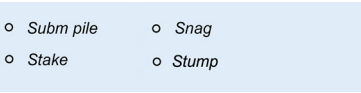
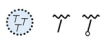
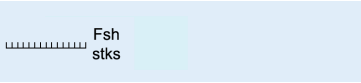
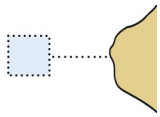
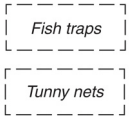
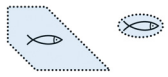
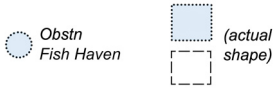
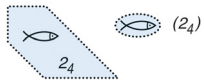
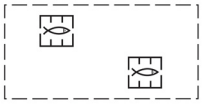
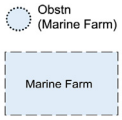
K Rocks, Wrecks and Obstructions

General				
1		Danger line: A danger line draws attention to a danger which would not stand out clearly enough if represented solely by its symbol (e.g. isolated rock) or delimits an area containing numerous dangers, through which it is unsafe to navigate		
2		Swept by wire drag or diver		
3		Depth unknown, but estimated to have a safe clearance to the depth shown		
Rocks				
Plane of Reference for Heights → **H**			Plane of Reference for Depths → **H**	
10		Rock (islet) which does not cover, height above height datum		
11		Rock which covers and uncovers, height above chart datum		
12		Rock awash at the level of chart datum		
13		Underwater rock of unknown depth, dangerous to surface navigation		
14.1		Underwater rock of known depth inside the corresponding depth area		
14.2		Underwater rock of known depth outside the corresponding depth area, dangerous to surface navigation		
15		Underwater rock of known depth, not dangerous to surface navigation		

K Rocks, Wrecks and Obstructions

16		Coral reef which is always covered			
17		Breakers			
Wrecks and Fouls					Supplementary national symbols: c
Plane of Reference for Depths → **H**					
20		Wreck, never covers, on large-scale charts			
21		Wreck, covers and uncovers, on large-scale charts			
22		Submerged wreck, depth known, on large-scale charts			
23		Submerged wreck, depth unknown, on large-scale charts			
24		Wreck showing any portion of hull or superstructure at level of Chart Datum			
25		Wreck of which the mast(s) only are visible at Chart Datum			
26		Wreck, least depth known by sounding only			
27		Wreck, least depth known, swept by wire drag or diver			
28		Dangerous wreck, depth unknown			
29		Sunken wreck, not dangerous to surface navigation			
30		Wreck, least depth unknown, but considered to have a safe clearance to the depth shown			
31		Foul ground, non-dangerous to navigation but to be avoided by vessels anchoring, trawling, etc. (e.g. remains of wreck, cleared platform)			

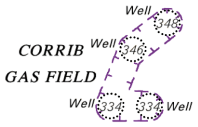
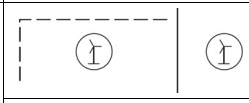
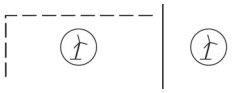
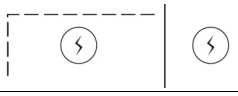
K Rocks, Wrecks and Obstructions

Obstructions and Aquaculture					
Plane of Reference for Depths → **H**			Kelp, Seaweed → **J**		Underwater Installations → **L**
40		Obstruction, depth unknown			
41		Obstruction, least depth known by sounding only			
42		Obstruction, least depth known, swept by wire drag or diver			
43.1		Stumps of posts or piles, wholly submerged			
43.2		Submerged pile, stake, snag, or stump (with exact position)			
44.1		Fishing stakes			
44.2		Fish trap, Fish weir, Tunny nets			
45		Fish trap area, Tunny nets area			
46.1		Fish haven			
46.2		Fish haven with minimum depth			
47		Shellfish beds			
48.1		Marine farm (on large-scale charts)			
48.2		Marine farm (on small-scale charts)			

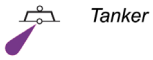
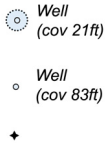
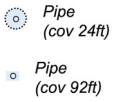
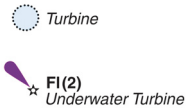
K Rocks, Wrecks and Obstructions

Supplementary National Symbols					
a		Rock awash (height unknown)	*		
b		Shoal sounding on isolated rock or rocks	5 Rk; 21 Rks		9 R; 2 r; 2 P; (8)
c		Sunken wreck covered 20 to 30 meters			
d		Submarine volcano	Sub vol		
e		Discolored water	Discol water		
f		Sunken danger with depth cleared (swept) by wire drag	21 Rk; 4 6; 35 Rk; 4 6 Obstn		
g		Reef of unknown extent	Reef		
h		Coral reef, detached (uncovers at sounding datum)	Co	Co; Coral; Co; Co	
i		Submerged crib	Subm crib	Crib	
j		Crib, duck blind (above water)	Duck Blind; Crib		
k		Submerged duck blind	Duck Blind		
l		Submerged platform	Subm platform	Platform	
m		Coral reef which covers and uncovers		Hay Reef; 2 3	
n		Sinkers		Sinkers; 13 4; 14 6; 15 7	
o		Foul area, foul with rocks or wreckage, dangerous to navigation	Foul; Wks; Wreckage		
p		Unexploded ordnance	Unexploded Ordnance	Unexploded Ordnance	
q		Float	Float		
r		Stumps of posts or piles, which cover and uncover	Subm piles		

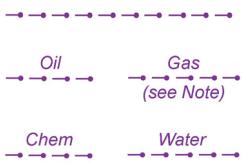
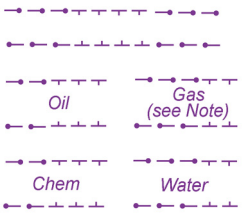
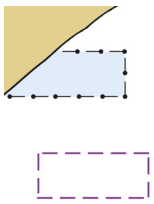
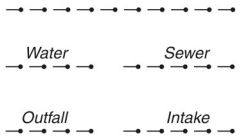
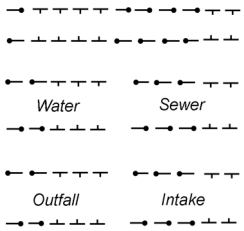
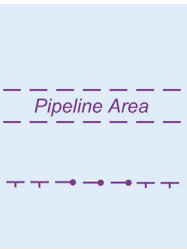
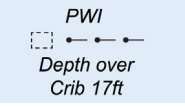
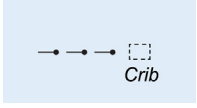
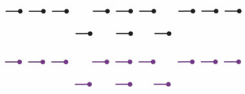
L Offshore Installations

General					
Areas and Limits → **N**					
1	*Ekofisk Oilfield*	Name of oilfield or gasfield			
2	Z-44	Platform with designation/ name		"Name"	
3		Limit of safety zone around offshore installation			
4		Limit of development area			
5.1		Wind turbine, floating wind turbine, vertical clearance under blade			
5.2		Wind farm			
		Wind farm (floating)			
6		Wave farm			
Platforms and Moorings					
Mooring Buoys → **Q**					
10		Production platform, Platform, Oil derrick	■	⊡	
11	⊡ Fla	Flare stack (at sea)			
12	SPM	Single Point Mooring (SPM), including Single Anchor Leg Mooring (SALM), Articulated Loading Column (ALC)		"Name"	
13		Observation/research platform (with name)	■ "Name"	⊡ "Name"	"Name"
14	Ru Z-44 (ru)	Disused platform with superstructure removed			(disused)
15		Artificial island			"Name"

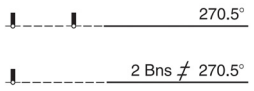
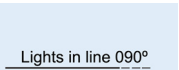
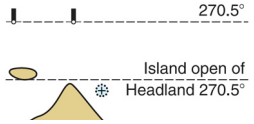
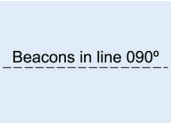
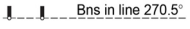
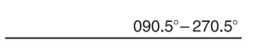
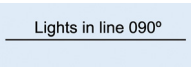
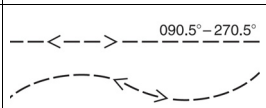
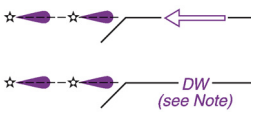
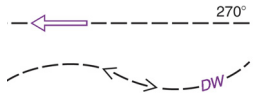
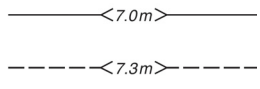
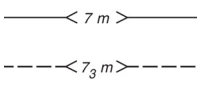
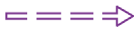
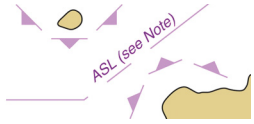
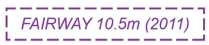
L Offshore Installations

16		Single Buoy Mooring (SBM), Oil or gas installation buoy, Catenary Anchor Leg Mooring (CALM)			
17		Moored storage tanker			
18		Mooring ground tackle			
Underwater Installations					Supplementary national symbol: a
Plane of Reference for Depths → **H**			Obstructions → **K**		
20		Submerged production well			
21.1		Suspended well, depth over wellhead unknown			
21.2		Suspended well, with depth over wellhead			
21.3		Wellhead with height above the sea floor			
22	#	Site of cleared platform			
23		Above-water wellhead (lit or unlit)			
24		Underwater turbine			
25		Subsurface Ocean(ographic) Data Acquisition System (ODAS)			
Submarine Cables					
30.1		Submarine cable			
30.2		Submarine cable area			
31.1		Submarine power cable			
31.2		Submarine power cable area			
32		Disused submarine cable			

L Offshore Installations

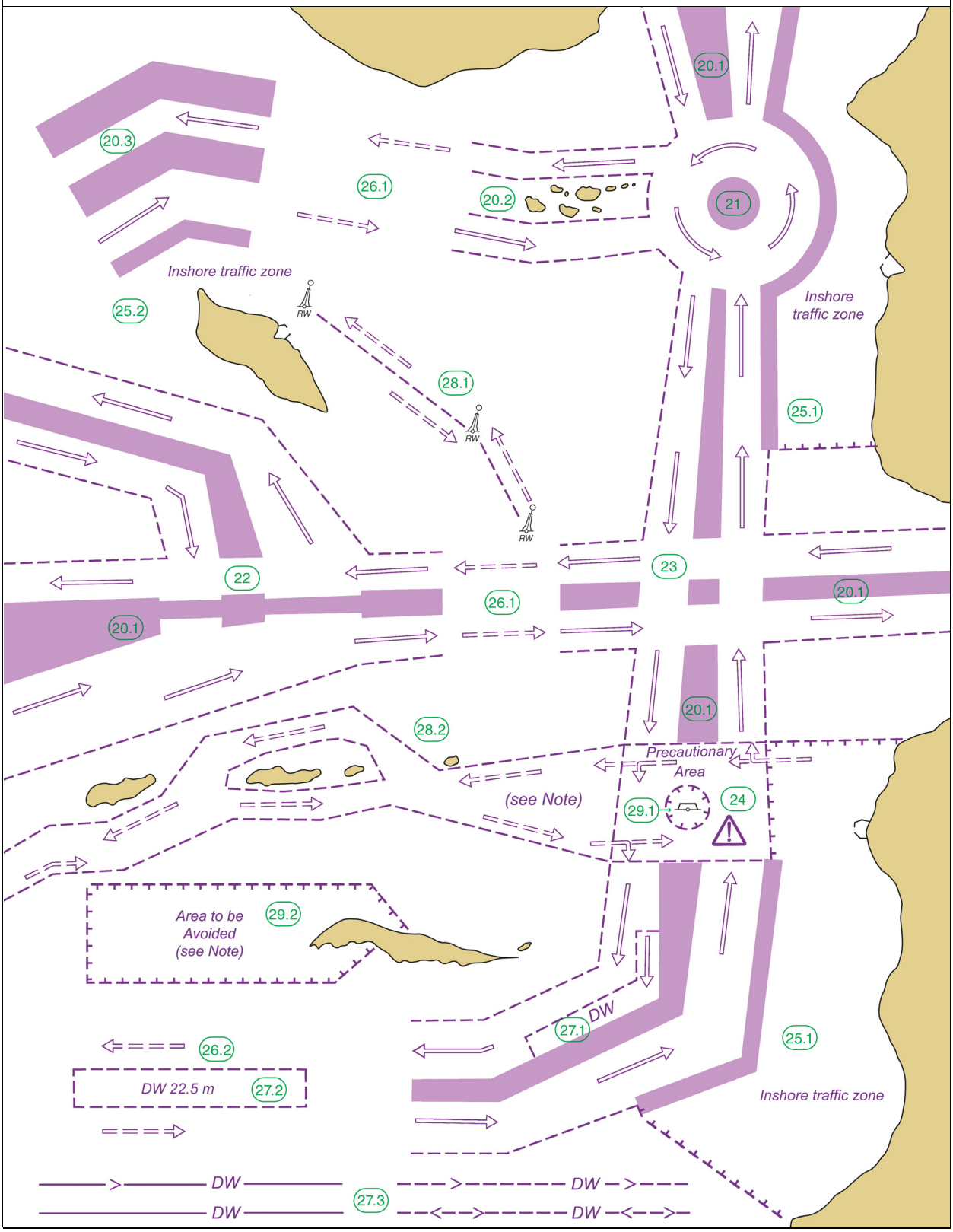
Submarine Pipelines					
40.1		Supply pipeline: unspecified, oil, gas, chemicals, water			
40.2		Supply pipeline area: unspecified, oil, gas, chemicals, water			
41.1		Outfall and intake: unspecified, water, sewer, outfall, intake			
41.2		Outfall and intake area: unspecified, water, sewer, outfall, intake			
42.1		Buried pipeline pipe (with nominal depth to which buried)			
42.2		Pipeline Tunnel			
43		Potable Water intake, diffuser, or crib			
44		Disused pipeline/pipe			
Supplementary National Symbols					
a		Submerged well (buoyed)			

M Tracks and Routes

Tracks					Supplementary national symbols: a – c
Tracks Marked by Lights → **P**			Leading Beacons → **Q**		
1		Leading line (solid line is the track to be followed, ≠ means "in line")			
2		Transit (other than leading line), clearing line			
3		Recommended track based on a system of fixed marks			
4		Recommended track not based on a system of fixed marks			
5.1		One-way track and DW track based on a system of fixed marks			
5.2		One-way track and DW track not based on a system of fixed marks			
6		Recommended track with maximum authorized draft stated			
Routing Measures					Supplementary national symbols: d – e
Basic Symbols					
10		Established (mandatory) direction of traffic flow			
11		Recommended direction of traffic flow			
12		Separation line (large-scale, small-scale)			
13		Separation zone			
14		Limit of restricted routing measure (e.g. Inshore Traffic Zone (ITZ), Area to be Avoided (ATBA)			
15		Limit of routing measure			
16		Precautionary area			
17		Archipelagic Sea Lane (ASL); axis line and limit beyond which vessels shall not navigate			
18		Fairway designated by regulatory authority			

M Tracks and Routes

Examples of Routing Measures

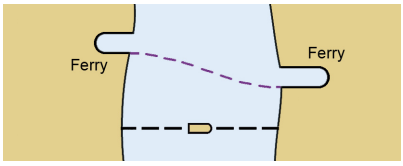
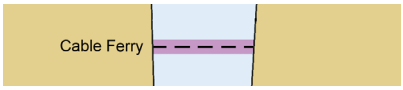
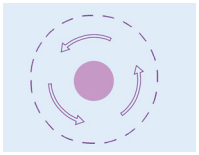


M Tracks and Routes

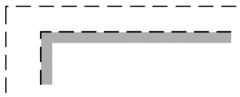
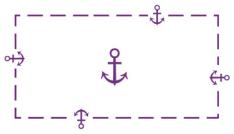
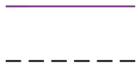
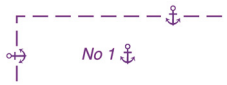
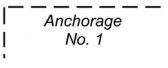
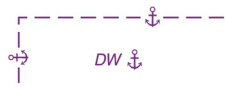
Examples of Routing Measures	
20.1	Traffic Separation Scheme (TSS), traffic separated by separation zone
20.2	Traffic Separation Scheme, traffic separated by natural obstructions
20.3	Traffic Separation Scheme, with outer separation zone separating traffic using scheme from traffic not using it
21	Traffic Separation Scheme, roundabout with separation zone
22	Traffic Separation Scheme, with “crossing gates”
23	Traffic Separation Scheme crossing, without designated precautionary area
24	Precautionary area
25.1	Inshore Traffic Zone (ITZ) with defined end limits
25.2	Inshore Traffic Zone without defined end limits
26.1	Recommended direction of traffic flow, between traffic separation schemes
26.2	Recommended direction of traffic flow for ships not needing a deep water route
27.1	Deep Water route (DW), as part of one-way traffic lane
27.2	Two-way Deep Water route,with minimum depth stated
27.3	Deep Water route, center line as recommended one-way or two-way track
28.1	Recommended route, one-way and two-way (often marked by centerline buoys)
28.2	Two-way route with one-way sections
29.1	Area to be Avoided (ATBA), around navigational aid
29.2	Area to be Avoided, e.g. because of danger of stranding

Radar Surveillance Systems					
30	⊙ Radar Surveillance Station	Radar surveillance station	⊙ Ra		
31	Ra Cuxhaven	Radar range			
32.1	Ra	Radar reference line			—Ra——Ra—
32.2	Ra 090°–270°	Radar reference line coinciding with a leading line			

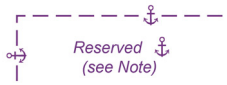
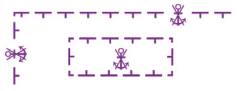
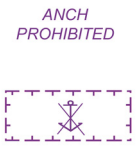
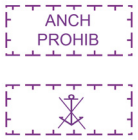
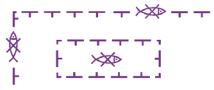
M Tracks and Routes

Radio Reporting				
40.1		Radio reporting (calling-in or way) points showing direction(s) of vessel movement with designation (if any) and VHF-channel)		
40.2		Radio reporting line		
Ferries				
50		Ferry		
51		Cable Ferry		
Supplementary National Symbols				
a		Recommended track for deep draft vessels (track not defined by fixed marks)		
b		Depth is shown where it has been obtained by the cognizant authority		
c		Alternate course		
d		Established traffic separation scheme: roundabout		
e		If no separation zone exists, the center of the roundabout is shown by circle		

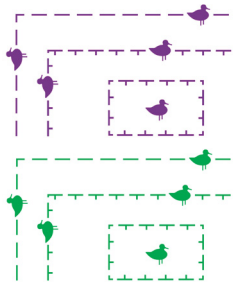
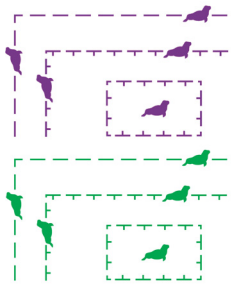
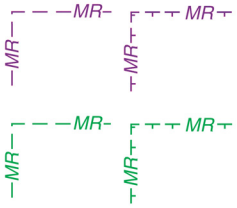
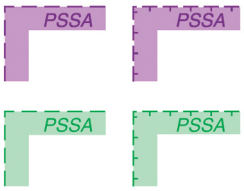
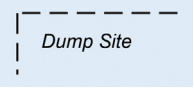
N Areas and Limits

General				
Dredged and Swept Areas → **I**			Submarine Cables, Submarine Pipelines → **L**	Tracks, Routes → **M**
1.1		Maritime limit in general, usually implying permanent physical obstructions (tint band for emphasis)		
1.2		Maritime limit in general, usually implying no permanent physical obstructions (tint band for emphasis)		
2.1		Limit of restricted area		
2.2		Limit of area into which entry is prohibited		
Anchorages and Anchorage Areas				
10		Anchorage		
11.1		Anchor berths		
11.2		Anchor berths with swinging circle		
Note: Anchors as part of the limit symbol are not shown for small areas. Other types of anchorage areas may be shown.				
12.1		Anchorage area in general		
12.2		Numbered anchorage area		
12.3		Named anchorage area		
12.4		Deep water anchorage area, Anchorage area for deep draft vessels		

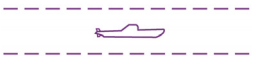
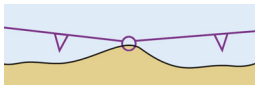
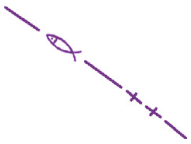
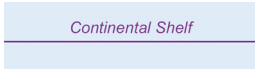
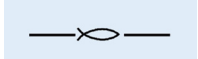
N Areas and Limits

12.5		Tanker anchorage area			
12.6		Anchorage area for periods up to 24 hours			
12.7		Explosives anchorage area			
12.8		Quarantine anchorage area			
12.9		Reserved anchorage area			
13		Seaplane operating area			
14		Anchorage for seaplanes			
Restricted Areas				Supplementary national symbols: d, e, g	
20		Anchoring prohibited			
21		Fishing prohibited			

N Areas and Limits

22	Limit of nature reserve:				
		Bird sanctuary			
		Seal sanctuary			
		Non-specific nature reserve, National parks, Marine Reserves (MR)			
		Particularly Sensitive Sea Area (PSSA)			
23.1		Explosives dumping ground, individual mine or explosive			
23.2		Explosives dumping ground (disused), Foul (explosives)			
24		Dumping ground for chemical waste			
25		Degaussing range (DG range)			

N Areas and Limits

26		Historic wreck and restricted area		
27		Maximum speed		
Military Practice Areas				
30		Firing practice area		
31		Military restricted area, entry prohibited		
32		Mine-laying (and counter-measures) practice area		
33		Submarine transit lane and exercise area		
34		Minefield		
International Boundaries and National Limits			Supplementary national symbols: a, f, h	
40		International boundary on land		
41		International maritime boundary		
42		Straight territorial sea baseline with base point		
43		Seaward limit of territorial sea		
44		Seaward limit of contiguous zone		
45		Limits of fishery zones		
46		Limit of continental shelf		
47		Limit of Exclusive Economic Zone (EEZ)		
48		Customs limit		

N Areas and Limits

49	Harbor Limit	Harbor limit		Harbor Limit	
Various Limits				Supplementary national symbols: a, b	
60.1	(2011)	Limit of fast ice, Ice front (with date)			
60.2	(2011)	Limit of sea ice (pack ice) seasonal (with date)			
61	Log Pond	Floating barrier, including log ponds, security barriers, ice booms, shark nets	Log boom		
62.1	Spoil Ground	Spoil ground	Spoil Area		
62.2	Spoil Ground (disused)	Spoil ground (disused)	Spoil Area Discontinued		
63	Dredging Area	Extraction (dredging) area			
64	Cargo Transhipment Area	Cargo transhipment area			
65	Incineration Area	Incineration area			
Supplementary National symbols					
a		COLREGS demarcation line			
b		Limit of fishing area (fish trap areas)			
c		Dumping ground	Dumping Ground		
d		Dumping area (Dump site)	Disposal Area 92 Depths from survey of 2010 85		
e		Limit of airport			
f		Reservation line (Options)			
g		Dump site	Dump Site		
h		Three Nautical Mile Line	Three Nautical Mile Line		
i		No Discharge Zone	NO-DISCHARGE ZONE		

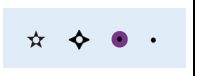
O Hydrographic Terms

1		Ocean
2		Sea
3	*G*	Gulf
4	*B*	Bay, Bayou
5	*Fd*	Fjord
6	*L*	Loch, Lough, Lake
7	*Cr*	Creek
8	*Lag*	Lagoon
9	*C*	Cove
10	*In*	Inlet
11	*Str*	Strait
12	*Sd*	Sound
13	*Pass*	Passage, Pass
14	*Chan*	Channel
15		Narrows
16	*Entr*	Entrance
17	*Est*	Estuary
18		Delta
19	*Mth*	Mouth
20	*Rd*	Roads, Roadstead
21	*Anch*	Anchorage
22	*Apprs*	Approach, Approaches
23	*Bk*	Bank
24		
25	*Shl*	Shoal
26	*Rf Co rf*	Reef, Coral reef
27		Sunken rock
28	*Le*	Ledge
29		Pinnacle
30		Ridge
31		Rise
32	*Mt*	Mountain, Mount
33	*SMt*	Seamount
34		Seamount chain
35	*Pk*	Peak
36		Knoll
37		Abyssal hill
38		Tablemount
39		Plateau
40		Terrace
41		Spur
42		Continental Shelf
43		Shelf-edge
44		Slope
45		Continental slope
46		Continental rise
47		Continental borderland
48		Basin
49		Abyssal plain
50		Hole
51		Trench
52		Trough
53		Valley
54		Median Valley
55		Canyon
56		Seachannel
57		Moat, Sea moat
58		Fan
59		Apron
60		Fracture zone
61		Scarp, Escarpment
62		Sill
63		Gap
64		Saddle
65		Levee
66		Province
67		Tideway, Tidal gully
68		Sidearm
69		Turning basin, Turning area, Turning Circle
Other Terms		
80		projected
81		lighted
82		buoyed
83		marked
84	*anc*	ancient
85	*dist*	distant
86		lesser
87		closed
88		partly
89	*approx*	approximate
90	*Subm, subm*	submerged
91		shoaled
92	*exper*	experimental
93	*D, Destr*	destroyed

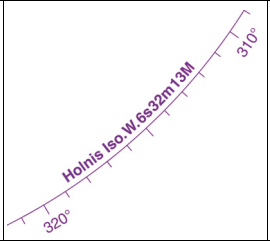
P Lights

Light Structures and Major Floating Lights

Minor Light Floats → **Q**30, 31

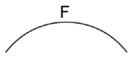
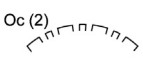
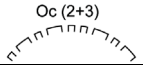
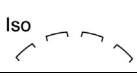
1		Major light, minor light, light, lighthouse		
2		Lighted offshore platform	■ PLATFORM (lighted)	
3	 	Lighted beacon tower	○ Marker (lighted) 	
4	  	Lighted beacon		
5	 	Articulated light, buoyant beacon, resilient beacon	 	
6		Major floating light (light vessel, major light float, LANBY)		

Note: Minor lights, fixed and floating, usually conform to IALA Maritime Buoyage System characteristics.

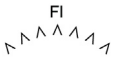
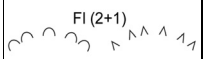
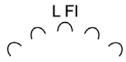
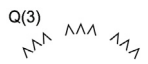
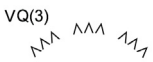
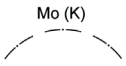
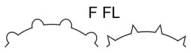
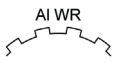
7		Navigational lights on landmarks or other structures		
8		Light off chart limits		

Light Characters

Light Characters on Light Buoys → **Q**

	Abbreviation		Class of light	Illustration / Period shown	
	International	National			
10.1	F	F	Fixed		
10.2	Occulting (total duration of light longer than total duration of darkness)				
	Oc	Oc	Single-occulting		
	Oc(2) Example	Oc (2)	Group-occulting		
	Oc(2+3) Example	Oc (2+3)	Composite group-occulting		
10.3	Isophase (duration of light and darkness equal)				
	Iso	Iso	Isophase		

P Lights

10.4	Flashing (total duration of light shorter than total duration of darkness)				
	Fl	Fl	Single-flashing		
	Fl(3) Example	Fl (3)	Group-flashing		
	Fl(2+1) Example	Fl (2+1)	Composite group-flashing		
10.5	LFl	L Fl	Long-flashing (flash 2s or longer)		
	Abbreviation		Class of light	Illustration Period shown	
	International	National			
10.6	Quick (repetition rate of 50 to 79 - usually either 50 or 60 - flashes per minute)				
	Q	Q	Continuous quick		
	Q(3) Example	Q (3)	Group quick		
	IQ	IQ	Interrupted quick		
10.7	Very quick (repetition rate of 80 to 159 - usually either 100 or 120 - flashes per minute)				
	VQ	VQ	Continuous very quick		
	VQ(3) Example	VQ (3)	Group very quick		
	IVQ	IVQ	Interrupted very quick		
10.8	Ultra quick (repetition rate of 160 or more - usually 240 to 300 - flashes per minute)				
	UQ	UQ	Continuous ultra quick		
	IUQ	IUQ	Interrupted ultra quick		
10.9	Mo(K) Example	Mo (K)	Morse Code		
10.10	FFl	F Fl	Fixed and flashing		
10.11	Al.WR Example	AlWR	Alternating		

P Lights

Colors of Lights and Marks						
11.1	W		White (only on sector and alternating lights)	Colors of lights shown on standard charts on multicolored charts  on multicolored charts at sector lights 		
11.2	R		Red			
11.3	G		Green			
11.4	Bu		Blue			
11.5	Vi		Violet			
11.6	Y		Yellow			
11.7	Y	Or	Orange			
11.8	Y	Am	Amber			
Period						
12	2.5s	90s	Period in seconds and tenths of a second			
Elevation						
Plane of Reference for Heights → **H**				Tidal Levels → **H**		
13	12m		Elevation of light given in meters or feet	36ft		
Range						
14	15M		Light with single range			
	15/10M		Light with two different ranges	10M *NOAA: only lesser of two ranges is charted*		15/10M
	15-7M		Elevation of light given in meters or feet	7M *NOAA: only least of three ranges is charted*		
Note: Charted ranges are nominal ranges given in Nautical Miles						
Disposition						
15	(hor)		Horizontally disposed			
	(vert)		Vertically disposed			

P Lights

Example of a Full Light Description

16

Name
☆ **Fl(3)WRG.15s 21ft 11M**
Fl(3)WRG.15s 21m 15-11M

Fl(3)	**Class of light:** group flashing repeating a group of flashes
WRG	**Colors:** white, red, green, exhibiting the different colors in defined sectors
15s	**Period:** the time taken to exhibit one full sequence of three flashes and eclipses: 15 seconds
21ft 21m	**Elevation** of focal plane above datum: 21 feet or 21 meters
11M 15-11M	**Nominal range:** Example 1- white 11M, red 11M, green 11M Example 2- white 15M, green 11M, red, between 15 and 11M

NGA Example

Name
Fl (3) WRG 15s 21m 15-11M

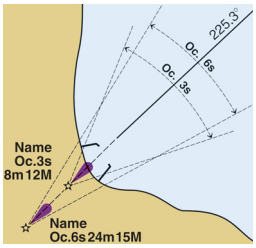
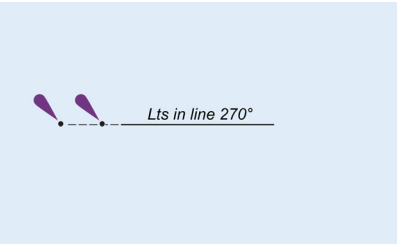
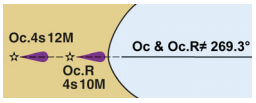
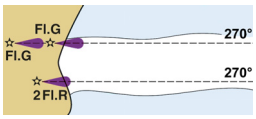
Fl(3)	**Class of light:** group flashing repeating a group of three flashes
WRG	**Colors:** white, red, green, exhibiting the different colors in defined sectors
15s	**Period:** the time taken to exhibit one full sequence of three flashes and eclipses: 15 seconds
21m 21ft	**Elevation of light:** 21 meters **Elevation of light:** 21 feet
15-11M 11M	**Nominal range:** white 15M, green 11M, red between 15 and 11M **Nominal range:** shortest range of all the lights is 11M

NOAA Example

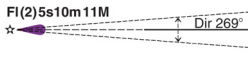
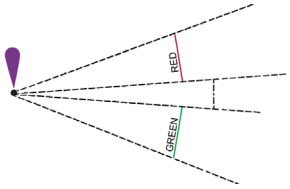
Name
Fl (3) WRG 15s 21ft 11M

Leading Marking Fairways

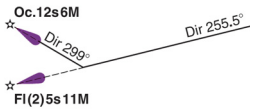
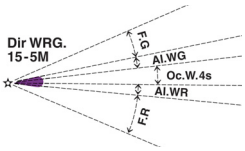
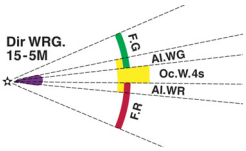
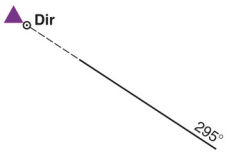
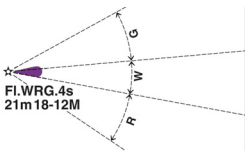
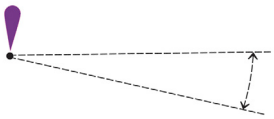
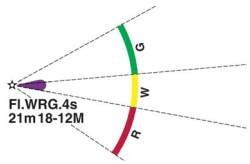
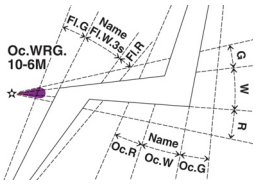
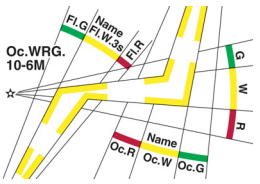
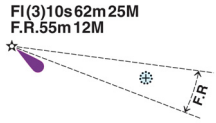
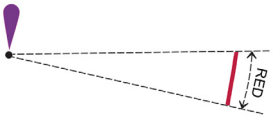
Leading Lights and Lights in Line

20.1		Leading lights with leading line (solid line is the track to be followed) and arcs of visibility Bearing given in degrees and tenths of a degree		
20.2		Leading lights (≠ means lights in line) Bearing given in degrees and tenths of a degree		
20.3		Leading lights on small-scale charts		
21		Lights in line, marking the sides of a channel		
22	Rear Lt or Upper Lt	Rear or upper light		
23	Front Lt or Lower Lt	Front or lower light		

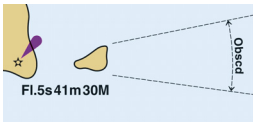
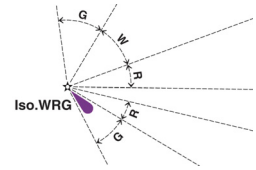
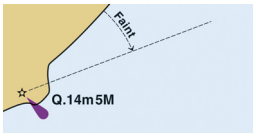
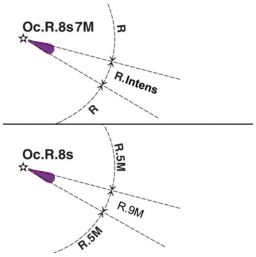
Direction Lights

30.1		Direction light with narrow sector and course to be followed, flanked by darkness or unintensified light		

P Lights

30.2		Direction light with course to be followed, sector(s) uncharted		
30.3		Direction light with narrow fairway sector flanked by light sectors of different characters on standard charts		
30.4		Direction light with narrow fairway sector flanked by light sectors of different character on multicolored charts		
31		Moiré effect light (day and night), arrows show when course alteration needed		
Note: Quoted bearings are always from seaward				
Sector Lights				
40.1		Sector light on standard charts		
40.2		Sector light on multicolored charts		
41.1		Sector lights on standard charts, the white sector limits marking the sides of the fairway		
41.2		Sector lights on multicolored charts, the white sector limits marking the sides of the fairway		
42		Main light visible all-round with red subsidiary light seen over danger		

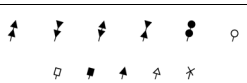
P Lights

43		All-round light with obscured sector			
44		Light with arc of visibility deliberately restricted			
45		Light with faint sector			
46		Light with intensified sector			
Lights with limited Times of Exhibition					
50	F.R.(occas)	Lights exhibited only when specially needed (for fishing vessels, ferries) and some private lights	Occas	F R (occas)	
51	Fl.10s40m27M (F.37m11M Day)	Daytime light (charted only where the character shown by day differs from that shown at night)		F Bu 9m 6M (F by day)	
52	Name Q.WRG.5m10-3M (Fl.5s Fog)	Fog light (exhibited only in fog, or character changes in fog)			
53	Fl.5s(U)	Unwatched (unmanned) light with no standby or emergency arrangements			
54	(temp)	Temporary			
55	(exting)	Extinguished			
Special Lights					
Flare Stack (at Sea) → **L**		Flare Stack (on land) → **E**		Signal Stations → **T**	
60	Aero Al.Fl.WG.7.5s11M	Aero light (may be unreliable)	AERO	AERO Al WG 7.5s 108m 13M	AERO

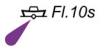
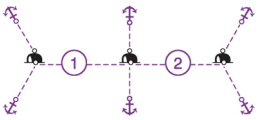
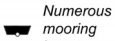
P Lights

61.1	Aero F.R.313m11M RADIO MAST (353)	Air obstruction light of high intensity (e.g. on radio mast)		AERO F R 77m 11M	
61.2	(89) (R Lts)	Air obstruction light of low intensity (e.g. on radio mast)		TR (R Lts)	
62	Fog Det Lt	Fog detector light			
63	(Illuminated)	Floodlit, floodlighting of a structure			
64		Strip light			
65	F.R.(priv)	Private light other than one exhibited occasionally	Priv	F R (priv)	Priv maintd
66	(sync)	Synchronized light			
Supplementary National Symbols					
a		Riprap surrounding light			
b		Short-Long Flashing			S-L Fl
c		Group-Short Flashing			G-S Fl
d		Fixed and Group Flashing			F Gp Fl
e		Unmanned light-vessel; light float			FLOAT
f		LANBY, superbuoy as navigational aid			

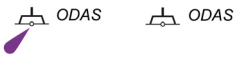
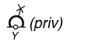
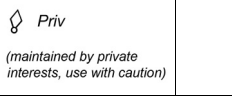
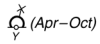
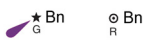
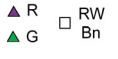
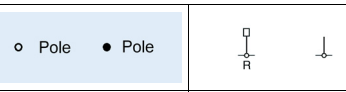
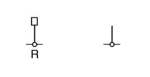
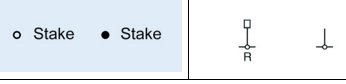
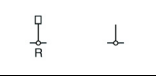
Q Buoys and Beacons

Buoys and Beacons					
IALA Maritime Buoyage System, which includes Beacons → **Q**130					
1		Position of buoy or beacon			
Colors of Buoys and Beacons			Supplementary national symbols: I – t		
Abbreviations for Colors → **P**					
2		Green and black *(symbols filled black)*			
3		Single color other than green and black			
4		Multiple colors in horizontal bands, the color sequence is from top to bottom			
5		Multiple colors in vertical or diagonal strips, the darker color is given first			
6		Retroreflecting material			
	Note: Retroreflecting material may be fitted to some unlit marks. Charts do not usually show it. Under IALA Recommendations, black bands will appear blue under a spotlight.				
Lighted Marks					
Marks with Fog Signals → **R**					
7		Lighted marks on standard charts			
8		Lighted marks on multicolored charts			
Topmarks and Radar Reflectors					
For Application of Topmarks within the IALA-System → **Q**130			For other topmarks (special purpose buoys and beacons) → **Q**		
9		IALA System buoy topmarks (beacon topmarks shown upright)			
10		Beacon with topmark, color, radar reflector and designation			
11		Buoy with topmark, color, radar reflector and designation			
	Note: Radar reflectors on floating marks usually are not charted.				
Buoys					
Shapes of Buoys					
Features Common to Buoys and Beacons → **Q**1–11					
20		Conical buoy, nun buoy, ogival buoy			
21		Can buoy or cylindrical buoy			
22		Spherical buoy			

Q Buoys and Beacons

23		Pillar buoy			
24		Spar buoy, spindle buoy			
25		Barrel buoy, tun buoy			
26		Superbuoy			
Minor Light Floats					
30		Light float as part of IALA System			
31		Light float not part of IALA System			
Mooring Buoys				Supplementary national symbols: m, n	
Oil or Gas Installation Buoy → **L**					
40		Mooring buoys			
41		Lighted mooring buoy (example)			
42		Trot, mooring buoys with ground tackle and berth numbers			
43		Mooring buoy with telegraphic or telephonic communication			
44		Numerous moorings (example)			
45		Visitors' mooring			
Special Purpose Buoys					
Note: Shapes of buoys are variable. Lateral or Cardinal buoys may be used in some situations.					
50		Firing danger area (Danger Zone) buoy			
51		Target			
52		Marker Ship			
53		Barge			
54		Degaussing Range buoy			
55		Cable buoy			

Q Buoys and Beacons

56		Spoil ground buoy			
57		Buoy marking outfall			
58		ODAS buoy, Data collecting buoy [Ocean(ographic) Data Acquisition System]			
59		Buoy marking wave recorder or current meter			
60		Seaplane anchorage buoy			
61		Buoy marking traffic separation scheme			
62		Buoy marking recreation zone			
Seasonal Buoys					
70		Buoy privately maintained (example)			
71		Seasonal buoy (example)			
Beacons				Supplementary national symbols: o	
Lighted Beacons → **P**		Features Common to Beacons and Buoys → **Q**1–11			
80		Beacon in general, characteristics unknown or chart scale too small to show			
81		Beacon with color, no distinctive topmark			
82		Beacons with colors and topmarks (examples)			
83		Beacon on submerged rock with colors (topmark as appropriate)			
Minor Impermanent Marks Usually in Drying Areas (Lateral Marks of Minor Channels)					
Minor Pile → **P**					
90		Stake, pole			
91	Port Hand	Starboard Hand	Perch, stake			
92	Port Hand 	Starboard Hand 	Withy		

Q Buoys and Beacons

Minor Marks, Usually on Land				
Landmarks → **E**				
100		Cairn	○ Cairn ⊙ CAIRN	
101	Mk	Colored or white mark		
102.1	RW	Colored topmark (color known or unknown) with function of a beacon		
102.2	RW RW	Painted boards with function of leading beacons		
Beacon Towers				
110	R G R G BY BRB	Beacon towers without and with topmarks and colors (examples)	□ RW Bn	
111		Lattice beacon		
Special Purpose Beacons				
Leading Lines, Clearing Lines → **M**				
Note: Topmarks and colors shown where scale permits.				
120		Leading beacons	□ □	Bns in line 270°
121		Beacons marking a clearing line		Bns in line 270°
122	Measured Distance 1852 m 090°–270°	Beacons marking measured distance with quoted bearings	MARKERS MARKERS COURSE 270°00' TRUE	
123	Y	Cable landing beacon (example)		W
124	Ref Ref	Refuge beacon		
125		Firing danger area beacons		
126		Notice board		

Q Buoys and Beacons

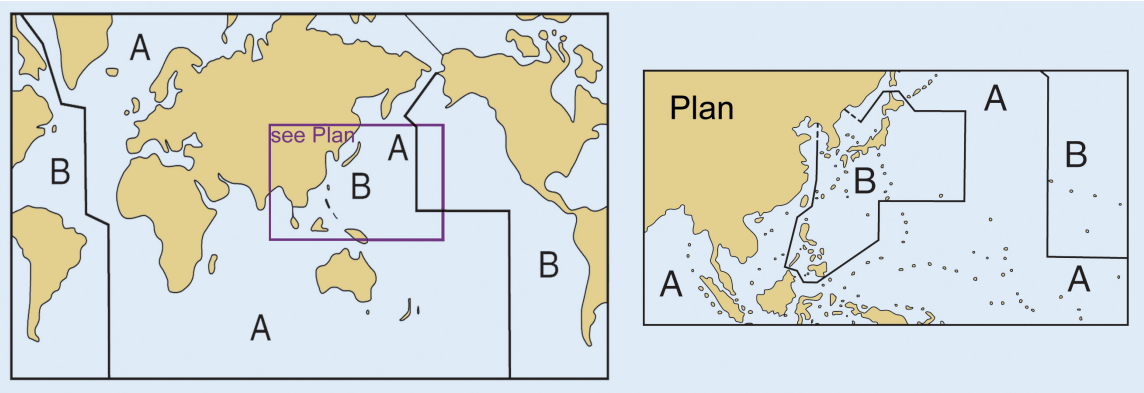
IALA Maritime Buoyage System

International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)

130

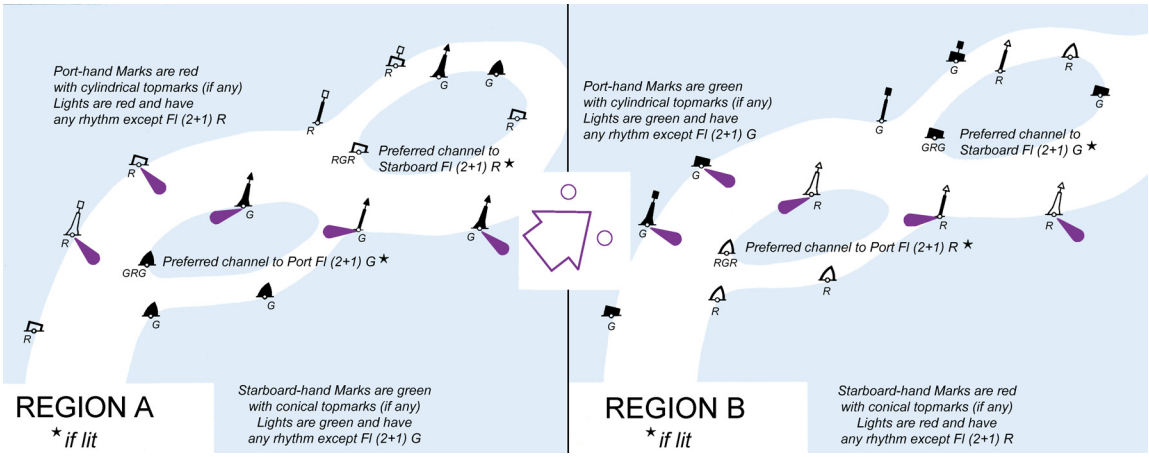
Where in force, the IALA System applies to all fixed and floating marks except landfall lights, leading lights and marks, sectored lights and major floating lights. The standard buoy shapes are cylindrical (can), conical, spherical, pillar, and spar, but variations may occur, for example: minor light floats. In the illustrations below, only the standar buoy shapes are used. In the case of fixed beacons (lit or unlit) only the shape of the topmark is of navigational significance.

IALA Buoyage Regions A and B



130.1

Lateral marks are generally for well-defined channels. There are two international Buoyage Regions – A and B – where Lateral marks differ.



Note: A preferred channel buoy may also be a pillar or a spar. All preferred channel marks have horizontal bands of color.

130.2

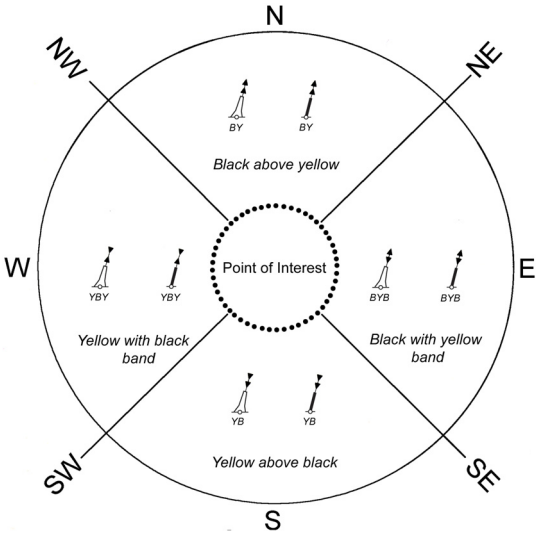
Direction of Buoyage: The direction of buoyage is that taken when approaching a harbor from seaward. Along coasts, the direction is determined by buoyage authorities, normally clockwise around land masses.

	Symbol showing direction of buoyage where not obvious
	Symbol showing direction of buoyage on multicolored charts

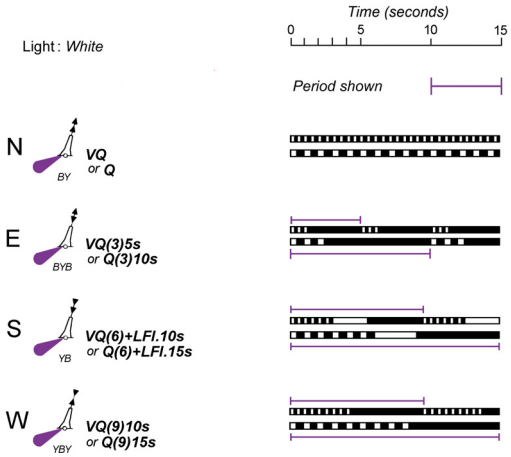
Q Buoys and Beacons

130.3 Cardinal Marks: indicating navigable water to the named side of the marks. In the illustration, all marks are the same in Regions A and B.

UNLIT MARKS



LIGHTED MARKS



130.4 Isolated Danger Marks stationed over dangers with navigable water around them.

Body: *black with red horizontal band(s)*
Topmark: *2 black spheres*

Light: *White*

130.5 Safe Water Marks such as mid-channel and landfall marks.

Body: *red and white vertical stripes*
Topmark (if any): *red sphere*

Light: *White*

130.6 Special Marks not primarily to assist navigation but to indicate special features.

Body *(shape optional)*: *yellow*
Topmark (if any): *yellow X*

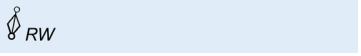
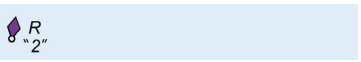
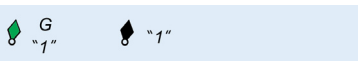
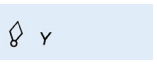
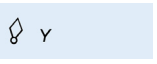
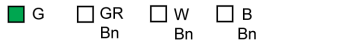
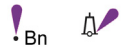
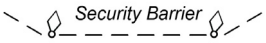
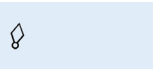
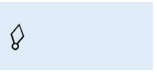
Light: *yellow, rhythm optional*

In special cases yellow can be in conjunction with another color.

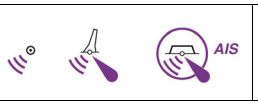
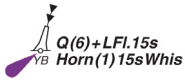
Supplementary National Symbols

a		Bell buoy	BELL BELL	
b		Gong buoy	GONG GONG	
c		Whistle buoy	WHIS WHIS	
d		Fairway buoy (red and white vertical stripe)	RW	

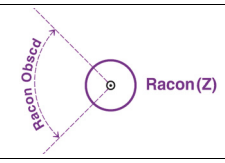
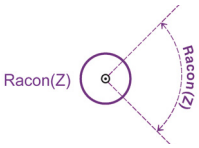
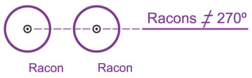
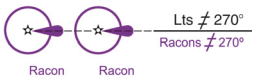
Q Buoys and Beacons

e		Mid-channel buoy (red and white vertical stripe)			
f		Starboard-hand buoy (entering from seaward - US waters)			
g		Port-hand buoy (entering from seaward - US waters)			
h		Bifurcation, Junction, Isolated danger, Wreck and Obstruction buoys			
i		Fish trap (area) buoy			
j		Anchorage buoy (marks limits)			
l		Triangular shaped beacons			
		Square shaped beacons			
		Beacon, color unknown			
m		Mooring buoy with telegraphic communications			
n		Mooring buoy with telephonic communications			
o		Lighted beacon			
q		Security barrier			
r		Scientific mooring buoy			
s		FLOAT			
t		White and Blue buoy			

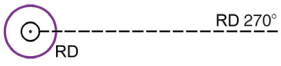
R Fog Signals

General					
Fog Detector Light → **P**			Fog Light → **P**		
1		Position of fog signal, type of fog signal not stated.	Fog Sig 		
Types of Fog Signals, with Abbreviations				Supplementary national symbol: a	
10	Explos	Explosive	*GUN*		
11	Dia	Diaphone	*DIA*		
12	Siren	Siren	*SIREN*		
13	Horn	Horn (nautophone, reed, tyfon)	*HORN*		
14	Bell	Bell	*BELL*		
15	Whis	Whistle	*WHIS*		
16	Gong	Gong	*GONG*		
Examples of Fog Signal Descriptions					
Note: The fog signal symbol is usually omitted when a description of the signal is given					
20		Siren at a lighthouse, giving a long blast followed by a short one (N), repeated every 60 seconds	Fl 3s 70m 29M SIREN Mo(N) 60s	 Fl 3s 70m 29M SIREN	
21		Wave-actuated bell buoy	 *BELL*	 *BELL*	
22		Light buoy, with horn giving a single blast every 15 seconds, in conjunction with a wave-actuated whistle	 *Q(6)+LFl 15s* *HORN(1) 15s* *WHIS*	 *Q(6)+LFl 15s* *HORN WHIS*	
Supplementary National Symbol					
a		Morse Code fog signal	*Mo*		

S Radar, Radio and Satellite Navigation Systems

Radar				
Radar Structures Forming Landmarks → **E**			Radar Surveillance Systems → **M**	
1		Coast radar station, providing range and bearing service on request		
2		Ramark, radar beacon transmitting continuously		
3.1		Radar transponder beacon, with morse identification, responding within the 3 cm (X) band		
3.2		Radar transponder beacon, with morse identification, responding within the 10 cm (S) band		
3.3		Radar transponder beacon, with morse identification		
3.4		Radar transponder beacon, with sector of obscured reception		
		Radar transponder beacon with sector of reception		
3.5		Leading radar transponder beacons (≠: objects in line)		
		Leading radar transponder beacons coincident with leading lights		
3.6		Radar transponder beacons on floating marks		
4		Radar reflector		
5		Radar conspicuous feature		
Radio				
Radio Structures Forming Landmarks → **E**			Radio Reporting (Calling-in or Way) points → **M**	
10		Circular (non-directional) marine or aeromarine radiobeacon		

S Radar, Radio and Satellite Navigation Systems

11		Directional radiobeacon with bearing line		
		Directional radiobeacon coincident with leading lights		
12		Rotating pattern radiobeacon		
13		Consol beacon	 	
14		Radio direction-finding station		
15		Coast radio station providing QTG service		
16		Aeronautical radiobeacon		
17.1		Automatic Identification System (AIS) transmitter		
17.2		Automatic Identification System (AIS) transmitter on floating marks (examples)		
Satellite Navigation Systems				
50	WGS WGS72 WGS84	World Geodetic System, 1972 or 1984		
	Note: A note may be shown to indicate the shifts of latitude and longitude, to one, two or three decimal of places of a minute, depending on the chart scale, which should be made to satellite-derived positions (which are referred to WGS 84) to relate them to the chart to relate them to the chart.			
51		Station providing DGPS corrections		

T Services

Pilotage					
1.1		Boarding place, position of a pilot cruising vessel	Pilots		
1.2	Name	Boarding place, position of a pilot cruising vessel, with name (e.g. District, Port)		Name	
1.3	Note	Boarding place, position of a pilot cruising vessel, with note (e.g. Tanker, Disembarkation)		(see note)	
1.4	H	Pilots transferred by helicopter			
2	Pilot Lookout	Pilot office with pilot lookout, pilot lookout			
3	Pilots	Pilot office	PIL STA	Pilots	
4	Port name (Pilots)	Port with pilotage service (boarding place not shown)			
Coast Guard, Rescue					
10	CG CG CG	Coast Guard station	C G R TR C G WALLIS SANDS		
11	CG CG CG	Coast Guard station with Rescue station			
12		Rescue station, Lifeboat station, Rocket station	LS S		
13		Lifeboat lying at a mooring			
14	Ref	Refuge for shipwrecked mariners			
Signal Stations					
20	SS	Signal station in general	SS	Sig Sta	
21	SS (INT)	Signal station, showing international port traffic signals			
22	SS (Traffic)	Traffic signal station, Port entry and departure signals			
23	SS (Port Control)	Port control signal station	HECP		
24	SS (Lock)	Lock signal station			
25.1	SS (Bridge)	Bridge passage signal station			

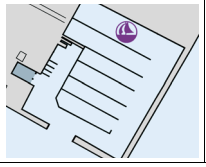
T Services

25.2	F Traffic-Sig	Bridge lights including traffic signals		
26	SS	Distress signal station		
27	SS	Telegraph station		
28	SS (Storm)	Storm signal station	S Sig Sta	
29	SS (Weather)	Weather signal station, Wind signal station, National Weather Service (NWS) signal station	NWS SIG STA	
30	SS (Ice)	Ice signal station		
31	SS (Time)	Time signal station		
32.1		Tide scale or gauge	Tide Gauge	
32.2	Tide Gauge	Automatically recording tide gauge		
33	SS (Tide)	Tide signal station		
34	SS (Stream)	Tidal stream signal station		
35	SS (Danger)	Danger signal station		
36	SS (Firing)	Firing practice signal station		
Supplementary National Symbols				
a		Bell (on land)	BELL	
b		Marine police station	MARINE POLICE	
c		Fireboat station	FIREBOAT STATION	
d		Notice board		
e		Lookout station; Watch tower	LOOK TR	
f		Semaphore	Sem	
g		Park Ranger station		

U Small Craft (Leisure) Facilities

Small Craft (Leisure) Facilities

Traffic Features, Bridges → **D** Public Buildings, Cranes → **F** Pilots, Coastguard, Rescue, Signal Stations → **T**

1.1		Boat harbor, Marina			

32 Marina facilities

NO	LOCATION	TIDES: APPROACH-FEET(REPORTED)	TIDES: ALONGSIDE-FEET(REPORTED)	DEPTH: ELECTRICITY-MOORINGS-BERTHS (TRANSIENTS)	DEPTH: RAMP SURFACED-NATURAL	SERVICES: REPAIRS HULL-MOTOR-RADIO	SERVICES: MARINE RAILWAY-FEET	SERVICES: LIFT CAPACITY-TONS	SERVICES: BOAT RENTAL: CANOE-ROW-MOTOR	SERVICES: BOAT RENTAL: CHARTER-HOUSE-SAIL	SERVICES: FOOD-LODGING-CAMPING	SERVICES: PUMP-OUT STATION TOILETS-SHOWERS LAUNDRY	SERVICES: WINTER STORAGE WET-DRY	SUPPLIES: WATER-ICE	SUPPLIES: NAUTICAL CHART SALES	SUPPLIES: GROCERIS-HARDWARE	SUPPLIES: BAIT-TACKLE	SUPPLIES: DIESEL OIL-GASOLINE
1	LAS VEGAS BOAT			80	20		S	HM			M		F C	T P	WD	C	WI	GH	BT	G
2	LAKE MEAD MAR			80	15	B E	S	HM			M		FL	T P	WD	C	WI			DG
3	HEMENWAY HARBOR			80			S													
4	TEMPLE BAR HAR			80	15		SN				M	H	FLC	TSL P	WD	C	WI	GH	BT	G
5	ECHO BAY RESORT			35	35	BM	S	M			M	H	FLC	TSL P	WD	C	WI	GH	BT	G
6	OVERTON BEACH			100			S				M		F C	TSL	WD		WI	G	BT	G
7	CALLVILLE BAY M			100	40		S				M	H	F C	TS P	WD		WI	G	B	G

(+) DENOTES HOURS LATER (-) DENOTES HOURS EARLIER
THE LOCATIONS OF THE ABOVE PUBLIC MARINE FACILITIES ARE SHOWN ON THE CHART BY LARGE PURPLE NUMBERS.
THE TABULATED "APPROACH-FEET(REPORTED)" IS THE DEPTH AVAILABLE FROM THE NEAREST NATURAL OR DREDGED CHANNEL TO THE FACILITY.
THE TABULATED "PUMPING STATION" IS DEFINED AS FACILITIES AVAILABLE FOR PUMPING OUT BOAT HOLDING TANKS.
(H) APPROACH DEPTH FLUCTUATES WITH LAKE LEVELS.

V Index of Abbreviations

A		
abt	About	D i
AERO, Aero	Aeronautical light	P 60
Aero RBn	Aeronautical radiobeacon	S 16
Aero RC	Aeronautical radiobeacon	S 16
AIS	Automatic Indentification System	S 17.1, 17.2
Al	Alternating	P 10.11
ALC	Articulated Loading Column	L 12
Am	Amber	P 11.8
anc	Ancient	O 84
ANCH, Anch	Anchorage	N 20, O 21
Ant, ANT	Antenna	E 31
approx	Approximate	O 89
Apprs	Approaches	O 22
Apr	April	
Apt	Apartment	E s
Arch	Archipelago	G 5
ASL	Archipelagic Sea Lane	M 17
ATBA	Area to be Avoided	M 29.1
Aug	August	
auth	Authorized	K 46.2
Ave	Avenue	G 111

B		
B	Bay, bayou	O 4
B	Black	Q 2
Bdy Mon	Boundary mark	B 24
Bk	Bank	O 23
bk	Broken	J 33
bk	Black	J as
Bkw	Breakwater	F 4.1
Bl	Blue	P 11.4
bl	Black	J as
BM	Bench mark	B 23
Bn, Bns	Beacon(s)	M 1-2, P 4-5, Q 80-81
Bn Tr	Beacon Tower	P 3
Bo	Boulder(s)	J 9.2
Bol	Bollard	G 181
Br	Breakers	K 17
br	Brown	J az
brg	Bearing	B 62
brk	Broken	J 33
Bu	Blue	P 11.4

C		
c	Coarse	J 32
C	Can, cylindrical	Q 21
C	Cove	O 9
C.	Cape	G 7
ca, Ca	Calcareous	J 38
CALM	Centenary Anchor Leg Mooring	L 16
Cap	Capitol	E t
Cas	Castle	E 34.2
Cb	Cobbles	J 8
cbl	Cable	B 46
cd	Candela	B 54
CD	Chart Datum	H 1
Cem	Cemetery	E 19
CG	Coast Guard station	T 10
Chem	Chemical	L 40.1, 40.2
Chan	Channel	O 14
Ch	Church	E 10.1
Ch	Chocolate	J ba
Chy, CHY	Chimney	E 22
Cir	Cirripedia	J ae
Ck	Chalk	J f
Cl	Clay	J 3
CL	Clearance	D 20, 21, 26, 28
cm	Centimeter(s)	B 43
Cn	Cinders	J p
Co	Coralline algae	J 10
Co	Company	E u
Co Hd	Coral head	J i
constr	Construction	F 32
COLREGS	International Regulations for Preventing Collisions at Sea	N a
Co rf	Coral reef	O 26
cov	Covers	L 21.2

V Index of Abbreviations

C (cont'd)		
cps	Cycles per second	B j
Corp	Corporation	E v
Cr	Creek	O 7
CRD	Columbia River Datum	H j
crs	Coarse	J 32
c/s	Cycles per second	B j
Cswy	Causeway	F 3
Ct Ho	Courthouse	E o
Cup	Cupola	E 10.4
Cus Ho	Customs house	F 61
Cy	Clay	J 3

D		
D	Destroyed	O 94
Dec	December	
dec	Decayed	J an
Deg	Degree(s)	B n
Destr	Destroyed	O 93
dev	Deviation	B 67
DG	Degaussing Range	Q 54
DF	Direction Finder	
DGPS	Differential Global Positioning System	S 51
Di	Diatoms	J aa
DIA, Dia	Diaphone	R 11
Dir	Direction light	P 30, 31
dist	Distant	O 85
Discol	Discolored	K e
dk	Dark	J bd
dm	Decimeter(s)	B 42
Dol	Dolphin(s)	F 20
Dn, Dns	Dolphin(s)	F 20
DW	Deep Water Track	M 27.1, N 12.4
DZ	Danger Zone	Q 50

E		
E	East	B 10
ED	Existence doubtful	I 1
EEZ	Exclusive Economic Zone	N 47
Entr	Entrance	O 16
ESSA	Environmentally Sensitive Sea Areas	N 22
Est	Estuary	O 17
exper	Experimental	O 92
Explos	Explosive	R 10
Exting, exting	Extinguished	P 55

F		
f	Fine	J 30
F	Fixed	P 10.1
Facty	Factory	E d
Fd	Fjord	O 5
Feb	February	
F Fl	Fixed and flashing	P 10.10
FISH	Fishing	N 21
F Gp Fl	Fixed and group flashing	P f
Fl	Flashing	P 10.4
fl	Flood	H q
Fla	Flare stack	L 11
fly	Flinty	J ao
fm, fms	Fathom(s)	B 48
fne	Fine	J 30
Fog Det Lt	Fog detector light	P 62
Fog Sig	Fog signal	R 1
FP	Flagpole	E 27
Fr	Foraminifera	J y
Fs, FS	Flagstaff	E 27
Fsh stks	Fishing stakes	K 44.1
ft, FT	Foot, Feet	B 47, D 20
Fu	Fucus	J af

G		
G	Gravel	J 6
G	Green	P 11.3
G	Gulf	O 3
GAB, Gab	Gable	E i
GCLWD	Gulf Coast Low Water Datum	H k
Gl	Globigerina	J z
glac	Glacial	J ap
gn	Green	J av
Govt Ho	Government House	E m
Gp Fl	Group flashing	P 10.4

V Index of Abbreviations

G (cont'd)		
Gp Oc	Group occulting	P 10.2
GPS	Global Positioning System	
Grd	Ground	J a
Grs	Grass	J v
GT	Gross Tonnage	
gty	Gritty	J am
gy	Gray	J bb

H		
h	Hard	J 39
h	Hour	B 49
H	Helicopter	T 1.4
HAT	Highest Astronomical Tide	H 3
Hbr Mr	Harbormaster	F 60
HHW	Higher High Water	H b
Hk	Hulk	F 34, K 21, 22
Ho	House	G 61
hor	Horizontal disposed	P 15
Hor CL	Horizontal clearance	D 21
Hosp	Hospital	E g, F 62.2
hr	Hour	B 49
hrd	Hard	J 39
ht	Height	H p
HW	High Water	H a
HWF&C	High Water Full & Change	H h
Hz	Hertz	B g

I		
IALA	International Association of Lighthouse Authorities	Q 130
IHO	International Hydrographic Organization	
illum	Illuminated	P 63
IMO	International Maritime Organization	
In	Inlet	O 10
in, ins	Inch(es)	B c
Inst	Institute	E n
INT	International	A 2, T 21
Intens	Intensified	P 46
IQ	Interrupted quick	P 10.6
ISLW	Indian Spring Low Water	H g
Iso	Isophase	P 10.3
ITZ	Inshore Traffic Zone	M 25.1
IUQ	Interrupted ultra quick	P 10.8
IVQ	Interrupted very quick	P 10.7

J		
Jan	January	
Jul	July	

K		
K	Kelp	J u
kc	Kilocycle	B k
kHz	Kilohertz	B h
km	Kilometer(s)	B 40
kn	Knot(s)	B 52

L		
L	Loch, lough, lake	O 6
La	Lava	J l
Lag	Lagoon	O 8
LANBY	Large Automatic Navigational Buoy	P 6
Lat	Latitude	B 1
LASH	Lighter Aboard Ship	G 184
LAT	Lowest Astronomical Tide	H 2
Ldg	Landing	F 17
Ldg	Leading	P 20.3
Le	Ledge	O 28
L Fl	Long flashing	P 10.5
LLW	Lower Low Water	H e
Lndg	Landing	F 17
LNG	Liquified Natural Gas	G 185
LoLo	Load-on, Load-off	
Long	Longitude	B 2
LPG	Liquified Petroleum Gas	G 186
LS S	Life saving station	T 12
lrg	Large	J ai
Lt, Lts	Light(s)	P 1
lt	Light	J bc
Ltd	Limited	E r
Lt Ho	Light house	P 1

V Index of Abbreviations

L (cont'd)		
LW	Low Water	H c
LWD	Low water datum	H d
LWF&C	Low Water Full and Change	H i

M		
m	Meter(s)	B 41
m	Minute(s) of time	B 50
m	Medium (in relation to sound)	J 31
M	Mud, muddy	J 2
M	Nautical mile(s)	B 45
Ma	Mattes	J ag
mag	Magnetic	B 61
Magz	Magazine	E l
Mar	March	
Mc	Megacycles	B l
Mds	Madrepores	J j
MHHW	Mean Higher High Water	H 13
MHLW	Mean Higher Low Water	H 14
MHW	Mean High Water	H 5
MHWN	Mean High Water Neaps	H 11
MHWS	Mean High Water Springs	H 9
Mi	Nautical mile(s)	B 45
min	Minute of time	B 50
min	Minimum	K 46.2
Mk	Mark	Q 101
Ml	Marl	J c
MLHW	Mean Lower High Water	H 15
MLLW	Mean Lower Low Water	H 12
MLW	Mean Low Water	H 4
MLWN	Mean Low Water Neaps	H 10
MLWS	Mean Low Water Springs	H 8
mm	Millimeter(s)	B 44
Mn	Manganese	J q
Mo	Morse	P 10.9
MON, Mon	Monument	E 24
Ms	Mussels	J s
MSL	Mean Sea Level	H 6
Mt	Mountain, Mount	O 32
Mth	Mouth	O 19
MTL	Mean Tide Level	H f
Maintd	Maintained	P 65
MR	Marine Reserves	N 22

N		
N	North	B 9
N	Nun	Q 20
NE	Northeast	B 13
NGA	National Geospatial-Intelligence Agency	
NM, NMi	Nautical mile(s)	B 45
No	Number	N 12.2
NOAA	National Oceanic and Atmospheric Administration	
NOS	National Ocean Service	
Nov	November	
Np	Neap tide	H 17
NTM	Notice to Mariners	
NW	Northwest	B 15
NWS SIG STA	National weather service signal station	T 29

O		
OBSC, Obscd	Obsured	P 43
Obs Spot	Observation spot	B 21
Obstn	Obstruction	K 41
Oc	Occulting	P 10.2
Occas	Occasional	P 50
Oct	October	
ODAS	Ocean Data Acquisition System	Q 58
Or	Orange	P 11.7
OVHD	Overhead	D 28
Oys	Oysters	J r

P		
P	Pebbles	J 7
P	Pillar	Q 23
(P)	Preliminary (NTM)	
PA	Position approximate	B 7
Pass	Passage, Pass	O 13
Pav	Pavillion	E p
PD	Position doubtful	B 8
Pk	Peak	O 35
PLT STA	Pilot station	T 3
Pm	Pumice	J m

V Index of Abbreviations

P (cont'd)		
Po	Polyzoa	J ad
PO	Post office	F 63
pos, posn	Position	
Post Off	Post office	F 63
Priv, priv	Private	P 65, Q 70
Prod well	Production well	L 20
PROHIB	Prohibited	N 2.2
PSSA	Particularly Sensitive Sea Area	N 22
Pt	Pteropods	J ac
Pyl	Pylon	D 26

Q		
Q	Quick	P 10.6
QTG	Service providing DF signals	S 15
Quar	Quarantine	F e
Qz	Quartz	J g

R		
R	Radio Station	S 15
R	Red	P 11.2
R, r	Rock, Rocky	J 9.1, K b
Ra	Radar reference line	M 32.1
Ra Dome	Radar dome	E 30.4
Ra (conspic)	Radar conspicuous object	S 5
Ra Antenna	Dish aerial	E 31
Racon	Radar transponder beacon	S 3
Radar Sc	Radar scanner	E 30.3
Radar Tr, RADAR TR	Radar tower	E 30.2
Radome,	Radar dome	E 30.4
Ramark	Radar marker beacon	S 2
Ra Ref	Radar reflector	S 4
RBn	Circular radiobeacon	S 10
RC	Circular radiobeacon	S 10
Rd	Roads, roadstead	G 110
Rd	Radiolaria	J ab
rd	Red	J ay
RD	Directional radiobeacon	S 11
RDF	Radio direction finding station	S 14
Ref	Refuge	Q 124
Rep	Reported	I 3
Rf	Reef	O 26
RG	Radio direction finding station	S 14
Rk	Rocks	J 9.1, K b
Rky	Rocky	J 9.1
R Lts	Air obstruction lights	P 61.2
R Mast	Radio mast	E 28
RoRo	Roll on Roll off	F 50
R Sta	Radio Station	S 15
rt	Rotten	J aj
R TR, R Tr	Radio tower	E 29
R Tower	Radio tower	E 29
Ru, ru	Ruins	D 8, F 33.1
RW	Rotating pattern radiobeacon	S 12
RWVS	Red and white vertical stripe	Q d, e

S		
S	Sand	J 1
S	South	B 11
S	Spar, spindle	Q 24
s	Second of time	B 51
SALM	Single Anchor Leg Mooring	L 12
SBM	Single Buoy Mooring	L 16
Sc	Scanner	E 30.3
Sc	Scoriae	J o
Sch	School	E f
Sch	Schist	J h
Sd	Sound	O 12
SD	Sounding doubtful	I 2
SD	Sailing Directions	
SE	Southeast	B 14
sec	Second of time	B 51
Sep	September	
sf	Stiff	J 36
sft	Soft	J 35
Sh	Shells	J 11
Shl	Shoal	O 25
Si	Silt	J 4
Sig	Signal	R 1
Sig Sta	Signal station	T 20
S-L Fl	Short-Long Flashing	P d
S/M	Sand over mud	J 12.1
sml	Small	J ah
Sn	Shingle	J d

V Index of Abbreviations

S (cont'd)		
so	Soft	J 35
Sp	Spring tide	H 16
SP	Spherical	Q 22
Sp	spire	E 10.3
Spi	Spicules	J x
Spipe, S'pipe	Standpipe	E 21
Spg	Sponge	J t
spk	Speckled	J al
SPM	Single Point Mooring	L 12
SS	Signal station	T 20
St	Stones	J 5
stf	Stiff	J 36
stk	Sticky	J 34
Sta, STA	Station	F 41.1, S 15, T 3
Stg	Sea-tangle	J w
Str	Strait	O 11
Str	Stream	H l
str	Streaky	J ak
St M, St Mi	Statute mile(s)	B e
sub	Submarine	K d
Subm	Submerged	K 43.1
SW	Southwest	B 16
sy	Sticky	J 34

T		
T	True	B 63
t	Ton(s), Tonnage (weight)	B 53
T	Telephone	E q
T	Short ton(s)	B m
T	Tufa	J n
Tel	Telegraph	D 27
Tel off	Telegraph office	E k
Temp, temp	Temporary	P 54
ten	Tenacious	J aq
Tk	Tank	E 32
Tr, TR	Tower	E 10.2, E 20
TSS	Traffic Separation Scheme	M 20.1
TT	Tree tops	C 14
TV Mast	Television mast	E 28
TV Tower	Television tower	E 29

U		
ULCC	Ultra Large Crude Carrier	G 188
Uncov	Uncovers	K 11
unev	Uneven	J bf
Univ	University	E h
UQ	Ultra quick	P 10.8
us	Microsecond(s)	B f
usec	Microsecond(s)	B f

V		
v	Volcanic	J 37
var, VAR	Variation	B 60
vard	Varied	J be
vert	Vertically disposed	P 15
vel	Velocity	H n
Vert CL	Vertical clearance	D 20, 28
Vi	Violet	P 11.5
Vil	Village	D 4
VLCC	Very Large Crude Carrier	G 187
vol	Volcanic, Volcano	J 37
Vol Ash	Volcanic ash	J k
VQ	Very quick	P 10.7
VTS	Vessel Traffic Service	

W		
W	West	B 12
W	White	P 11.1
Wd	Weed	J 13.1
Well	Wellhead	L 21
WGS	World Geodetic System	S 50
Wh	White	J ar
Whf	Wharf	F 13
WHIS, Whis	Whistle	R 15
Wk	Wreck	K 20
Wtr Tr, WTR TR	Water tower	E 21

Y		
Y	Yellow, Orange, Amber	P 11.6, P 11.7, P 11.8
yd, yds	Yard(s)	B d
yl	Yellow	J aw

W International Abbreviations

A		
Aero	Aeronautical light	P 60, 61.1
Aero RC	Aeronautical radiobeacon	S 16
AIS	Automatic Indentification System	S 17.1, 17.2
Al	Alternating	P 10.11
ALC	Articulated Loading Column	L 12
Am	Amber	P 11.8
ASL	Archipelagic Sea Lane	M 17

B		
B	Black	Q 2
bk	Broken	J 33
Bn	Beacon(s)	P 4-5, Q 80
BnTr	Beacon tower	P 3, Q 110
Bo	Boulder(s)	J 9.2
Br	Breakers	K 17
Bu	Blue	P 11.4

C		
c	Coarse	J 32
ca	Calcareous	J 38
CALM	Cantenary Anchor Leg Mooring	L 16
Cb	Cobbles	J 8
cd	Candela	B 54
CG	Coast Guard station	T 10
Ch	Church	E 10.1
Chy	Chimney	E 22
cm	Centimeter(s)	B 43
Co	Coraline Algae	J 10, K 16
Consol	Consol Beacon	S 13
Cy	Clay	J 3

D		
DG	Degaussing Range	N 25, Q 54
DGPS	Differential Global Positioning System	S 51
Dia	Diaphone	R 11
Dir	Direction light	P 30-31
dm	Decimeter(s)	B 42
Dn, Dns	Dolphin(s)	F 20
DW	Deep Water track	M 27.1, N 12.4
DZ	Danger Zone	Q 50

E		
E	East	B 10
ED	Existence doubtful	I 1
EEZ	Exclusive Economic Zone	N 47
Explos	Explosive	R 10
exting	Extinguished	P 55

F		
f	Fine	J 30
F	Fixed	P 10.1
FAD	Fish Aggregating Device(s)	
FFl	Fixed and flashing	P 10.10
Fl	Flashing	P 10.4
Fla	Flare stack	L 11
Fog Det Lt	Fog detector light	P 62
FS	Flagstaff, flagpole	E 27
ft	Foot, Feet	B 47

G		
G	Gravel	J 6
G	Green	P 11.3, Q 2
GPS	Global Positioning System	
grt	Gross Register Tonnage	
GT	Gross Tonnage	

H		
h	Hard	J 39
h	Hour	B 49
H	Helicopter	T 1.4
hor	Horizontal disposed	P 15

I		
INT	International	A 2, T 21
Intens	Intensified	P 46
IQ	Interrupted quick	P 10.6
Iso	Isophase	P 10.3
IUQ	Interrupted ultra quick	P 10.8
IVQ	Interrupted very quick	P 10.7

W International Abbreviations

J		
Jan	January	
Jun	June	
Jul	July	

K		
km	Kilometer(s)	B 40
kn	Knot(s)	B 52

L		
LANBY	Large Automatic Navigational	P 6
LASH	Lighter Aboard Ship	G 184
Lat	Lattitude	B 1
LAT	Lowest Astronomical Tide	H 2
Ldg	Leading	P 20.3
LFl	Long-flashing	P 10.5
Lndg	Landing for boats	F 17
LNG	Liquified Natural Gas	G 185
Long	Longitude	B 2
LPG	Liquefied Petroleum Gas	G 186
Lt(s)	Light(s)	P 1

M		
M	Mud, muddy	J 2
M	Nautical mile(s)	B 45
m	Meter(s)	B 41
m	Minute(s) of time	B 50
m	Medium (in relation to sand)	J 31
min	Minute(s) of time	B 50
Mk	Mark	Q 101
mm	Millimeter(s)	B 44
Mo	Morse Code	P 10.9, R 20
Mon	Monument	E 24
MR	Marine Reserves	N 22
MRCC	Maritime Rescue Coordination Center	

N		
N	North	B 9
NE	Northeast	B 13
No	Number	N 12.2
NT	Net Tonnage	
NW	Northwest	B 15

O		
Obscd	Obscured	P 43
Obstn	Obstruction	K 40-43, L 43
Oc	Occulting	P 10.2
occas	Occasional	P 50
ODAS	Ocean(ographic) Data Acquisition System	Q 58
Or	Orange	P 11.7, Q 3

P		
P	Pebbles	J 7
PA	Position approximate	B 7
PD	Position doubtful	B 8
priv	Private	P 65, Q 70
Prod Well	Submerged production well	L 20
PSSA	Particularly Sensitive Sea Area	N 22
Pyl	Pylon	D 26

Q		
Q	Quick	P 10.6

R		
R	Coast radio station providing QTG service	S 15
R	Red	P 11.2, Q 3
R	Rock, Rocky	J9.1, K 15
Ra	Radar	M 31-32, S 1
Racon	Radar transponder beacon	S 3.1-3.6
RC	Circular marine radiobeacon	S 10
RD	Directional radiobeacon	S 11
Ref	Refuge	Q 124, T 14
Rep	Reported, but not confirmed	I 3.1-3.2
RG	Radio direction finding station	S 14
RoRo	Roll-on Roll-off, Ro-Ro Terminal	F 50
Ru	Ruins	D 8, E 25.2, F 33
RW	Rotating pattern radiobeacon	S 12

W International Abbreviations

S		
S	Sand	J 1
s	Second(s) of time	B 51, P 12
S	South	B 11
SALM	Single Anchor Leg Mooring	L 12
SBM	Single Buoy Mooring	L 16
SD	Sounding doubtful	I 2
SE	Southeast	B 14
sec	Seconds of time	B 51
sf	Stiff	J 36
Sh	Shells	J 11
Si	Silt	J 4
Sig	Signal	T 25.2
SMt	Seamount	O 33
so	Soft	J 35
Sp	Church spire	E 10.3
SPM	Single Point Mooring	L 12
SS	Signal station	T 20-36
St	Stones	J 5
SW	Southwest	B 16
sy	Sticky	J 34

T		
t	Ton(s), Tonnage (weight)	B 53, F 53
temp	Temporary	P 54
Tr	Tower	E 10.2, E 20

U		
ULCC	Ultra Large Crude Carrier	G 188
UQ	Ultra quick	P 10.8
UTC	Coordinated Universal Time	
UTM	Universal Transverse Mercator	

V		
v	Volcanic	J 37
vert	Vertically disposed	P 15
Vi	Violet	P 11.5
VLCC	Very Large Crude Carrier	G 187
VQ	Very quick	P 10.7
VTS	Vessel Traffic Service	

W		
W	West	B 12
W	White	P 11.1, Q 130.5
Wd	Weed	J 13.1
Well	Wellhead	L 21
WGS	World Geodetic System	S 50
Whis	Whistle	R 15
Wk, Wks	Wreck(s)	K 20-30

Y		
Y	Yellow, Orange, Amber	P 11.6, P 11.7, P 11.8

X Index

X Index

X Index

X Index

X Index

X Index

X Index

X Index

X Index

X Index

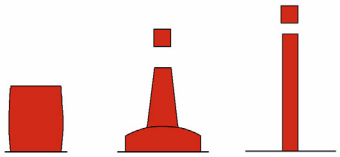
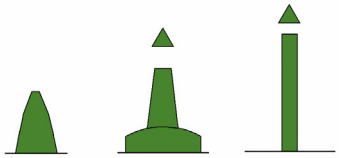
X Index

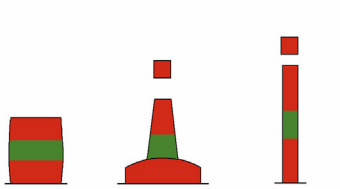
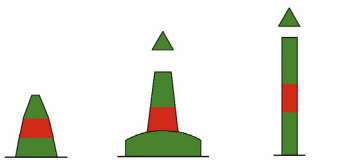
X Index

Appendix 1

IALA Maritime Buoyage System

Lateral Marks - Region A

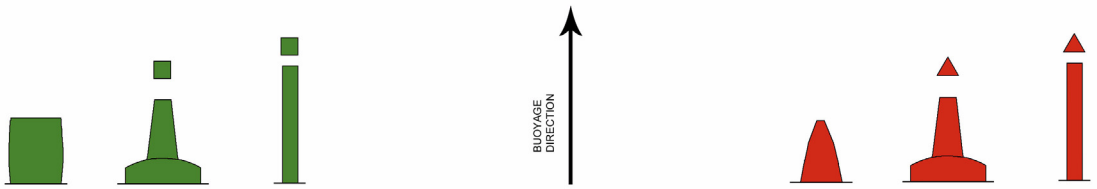
Port Hand		Starboard Hand
		
Color: Red.		Color: Green.
Buoy: Cylindrical (can), pillar, spar.		Buoy: Conical (nun), pillar, spar.
Topmark (if any): Single red cylinder (can).		Topmark (if any): Single green cone, point upward.
Lights (if any): may have any phase characteristic other than that used for preferred channels.		
	Q Fl	
	Fl	
	L Fl	
	G Fl	

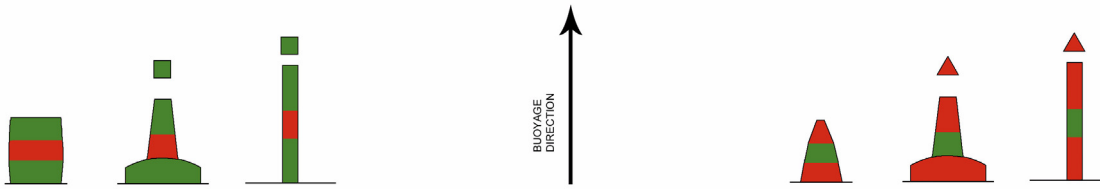
Preferred Channel to Starboard		Preferred Channel to Port
		
Color: Red with one green horizontal band.		Color: Green with one red horizontal band.
Buoy: Cylindrical (can), pillar, spar.		Buoy: Conical (nun), pillar, spar.
Topmark (if any): Single red cylinder (can).		Topmark (if any): Single green cone, point upward.
Lights (if any): are composite group flashing.		
	Fl (2+1)	

Appendix 1

IALA Maritime Buoyage System

Lateral Marks - Region B

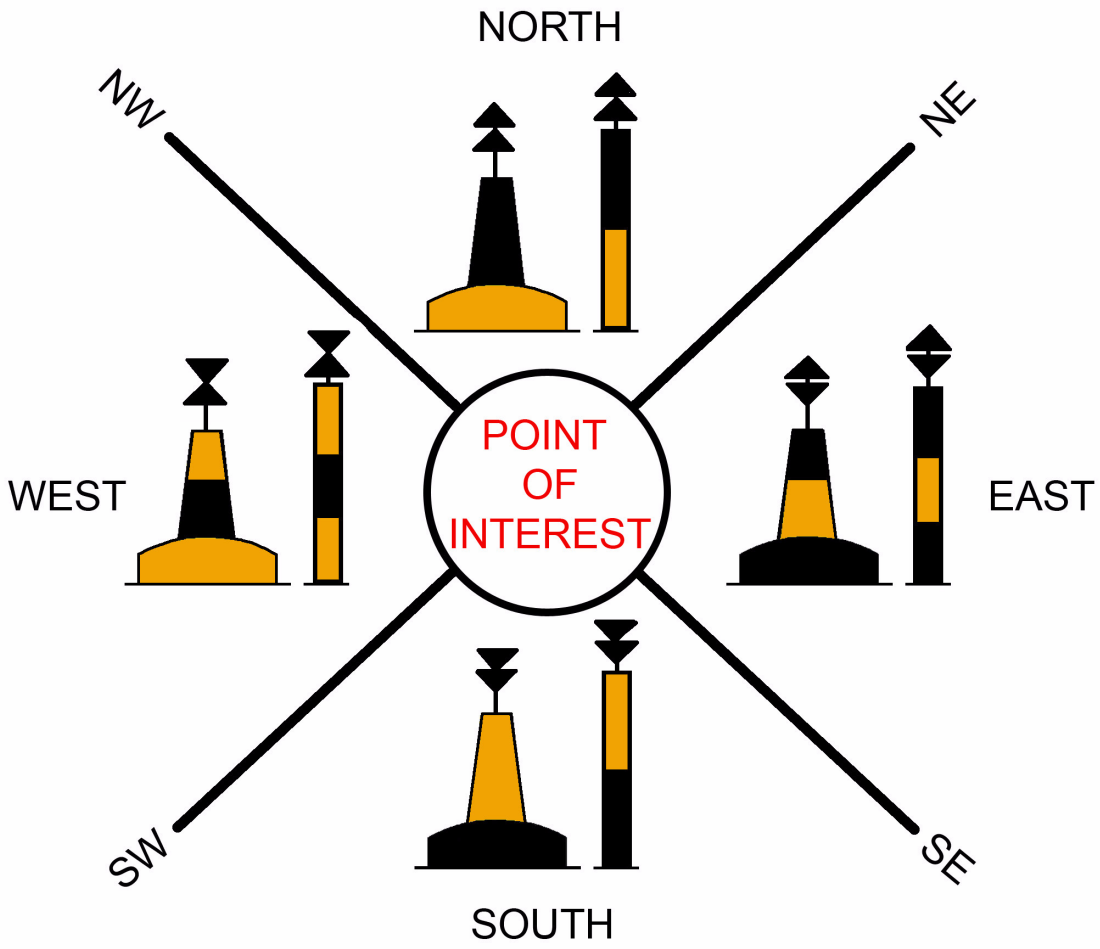
Port Hand		Starboard Hand
		
Color: Green.		Color: Red.
Buoy: Cylindrical (can), pillar, spar.		Buoy: Conical (nun), pillar, spar.
Topmark (if any): Single green cylinder (can).		Topmark (if any): Single red cone, point upward.
Lights (if any): may have any phase characteristic other than that used for preferred channels.		
	Q Fl	
	Fl	
	L Fl	
	G Fl	

Preferred Channel to Starboard		Preferred Channel to Port
		
Color: Green with one red horizontal band.		Color: Red with one green horizontal band.
Buoy: Cylindrical (can), pillar, spar.		Buoy: Conical (nun), pillar, spar.
Topmark (if any): Single green cylinder (can).		Topmark (if any): Single red cone, point upward.
Lights (if any): are composite group flashing.		
	Fl (2+1)	

Appendix 1

IALA Maritime Buoyage System

Cardinal Marks - Regions A & B



Buoy: Pillar or spar.

Topmark (when practicable): always fitted.

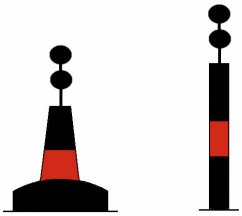
Lights (if any): may have any phase characteristic other than that used for preferred channels.

▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲	Q	North	VQ	▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲
▲▲▲ ▲▲▲	Q (3) 10s	East	VQ (3) 5s	▲▲▲ ▲▲▲
▲▲▲▲▲▲ ▲▲▲▲▲▲	Q (6) + L Fl 15s	South	VQ (6) + L Fl 10s	▲▲▲▲▲▲▲ ▲▲▲▲▲▲▲
▲▲▲▲▲▲▲▲▲ ▲▲▲▲▲▲▲▲▲	Q (9) 15s	West	VQ (9) 10s	▲▲▲▲▲▲▲▲▲ ▲▲▲▲▲▲▲▲▲

Appendix 1

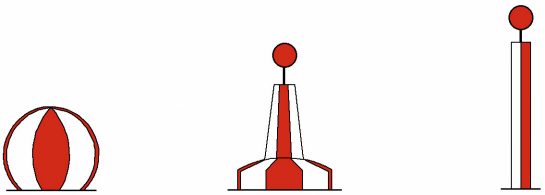
IALA Maritime Buoyage System

Isolated Danger Marks



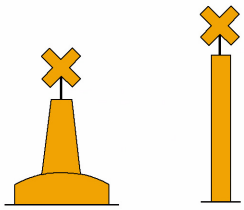
Color: Black with one or more red horizontal band(s).		
Buoy: Optional, but not conflicting with latteral marks; pillar, spar preferred.		
Topmark (if practical): always fitted with double spheres.		
Lights (if any) white, group flasing	Fl (2)	

Safe Water Marks



Color: Red and white vertical strpes.		
Buoy: Spherical; pillar or spar with spherical topmark.		
Topmark (if any): Single red sphere.		
Lights (if any) white	Iso	
	Occ	
	L Fl 10s	
	Morse “A”	

Special Marks



Color: Yellow.		
Buoy: Optional, but not conflicting with latteral marks.		
Topmark (if any): Single yellow “X” shape.		
Lights (if any) yellow, but not conflicting with white lightsl	Fl Y	
	Fl (4) Y	

Contents Key