

# U.S. Chart No. 1

## Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts



13<sup>th</sup> Edition

April 15, 2019

Prepared Jointly by

Department of Commerce  
National Oceanic and Atmospheric Administration

Department of Defense  
National Geospatial-Intelligence Agency



## ECDIS Symbols and Other ECDIS Information

Symbology for displaying Electronic Navigational Charts (ENCs) on Electronic Chart Display and Information Systems (ECDIS) has been added to U.S. Chart No. 1. In addition to the ECDIS symbols shown in the traditional lettered sections of U.S. Chart No. 1, there are now several special pages devoted exclusively to providing important details about ECDIS. These pages are distinguished by the ECDIS icon, as shown in the top left corner of this page. The ECDIS pages are also listed in the table of contents in *italic type*.



One major difference in the use of paper charts and ENCs is the ability of ECDIS to display the same feature differently depending on user settings and other conditions, such as a ship's draft. An important example is that ECDIS displays wrecks, rocks and other obstructions with their traditional "paper chart" symbols if they are at or deeper than the depth of the safety contour set for the ship. Dangers that are shoaler are portrayed with the unique ECDIS "isolated danger" symbol shown at left. (See the ECDIS Portrayal of Depths page for more information about the ECDIS safety contour.)



Another advantage that ECDIS provides over paper charts is enabling users to obtain more information about a feature through a "cursor pick." Some feature attribute values that can be obtained by cursor pick are noted throughout U.S. Chart No. 1. This is especially true if a particular value, such as height, vertical clearance or the like is included in the INT symbol description. The cursor pick icon, shown at left, is used to indicate when a reference to a cursor pick is made.

There are many other attribute values that users may obtain through a cursor pick that are not specifically noted. These include, but are not limited to, the purpose, seasonality, periodicity, status, color, height, type of structure and the visual or radar conspicuousness of features; shape, color or color pattern of buoys; characteristics of lights; category of obstructions and wrecks; radar wave length, radio frequency, communication channel and call signs; the presence of AIS transmitted signals; information regarding pilotage services and many more.

U.S. Chart No. 1 is a handy guide for ECDIS users, but it is no substitute for mandated ECDIS training.

The ECDIS user and developer communities are invited to help improve the presentation of ECDIS symbology and information in U.S. Chart No. 1. Please let us know what additional information you would like to see in the next edition.

Corrections, comments, or questions regarding U.S. Chart No. 1 may be submitted through ASSIST, the NOAA Coast Survey stakeholder engagement and feedback website at [www.nauticalcharts.noaa.gov/customerservice/assist](http://www.nauticalcharts.noaa.gov/customerservice/assist),

or mailed to:

National Ocean Service, NOAA (N/CS2)  
Attention: U.S. Chart No. 1  
1315 East West Highway  
Silver Spring, MD 20912-3282



# SYMBOLS, ABBREVIATIONS AND TERMS

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### Symbol Sections

#### GENERAL

- A Chart Number, Title, Marginal Notes
- B Positions, Distances, Directions, Compass

#### TOPOGRAPHY

- C Natural Features
- D Cultural Features
- E Landmarks
- F Ports
- G (Not currently used)

#### HYDROGRAPHY

- H Tides, Currents
- I Depths
- J Nature of the Seabed
- K Rocks, Wrecks, Obstructions, Aquaculture
- L Offshore Installations
- M Tracks, Routes
- N Areas, Limits
- O (Not currently used)

#### NAVIGATION AIDS AND SERVICES

- P Lights
- Q Buoys, Beacons
- R Fog Signals
- S Radar, Radio, Satellite Navigation Systems
- T Services
- U Small Craft (Leisure) Facilities



## INTRODUCTION

### Two Symbology Types Comprising Four Symbology Sets

U.S. Chart No. 1 presents two types of symbology used for marine navigation – the symbols used on paper nautical charts (and their digital raster image equivalents) and the corresponding symbols used to portray Electronic Navigational Chart (ENC) data on Electronic Chart Display and Information Systems (ECDIS).

Within these two types, four separate symbology sets are shown. These are described below:

#### *Paper Chart Symbols*

INT — The international or “INT” symbols specified in the *Regulations for International (INT) Charts and Chart Specifications of the IHO* (International Hydrographic Organization). These symbols are used by many countries around the world, including the United States.

NOAA — Symbols used on charts produced by the National Oceanic and Atmospheric Administration (NOAA) when an INT symbol is not used. NOAA produces nautical charts for all U.S. waters, including the Great Lakes and U.S. Territories.

NGA — Symbols used on charts produced by the National Geospatial-Intelligence Agency (NGA) when an INT symbol is not used. NGA produces nautical charts for the U.S. military and for areas outside of U.S. waters.

#### *ECDIS Symbols*

ECDIS — Symbols used to portray ENCs on ECDIS navigation systems. Use of ECDIS is required for large commercial ships on international voyages. These symbols are specified in *IHO Specifications for Chart Content and Display Aspects of ECDIS*.

### Other Non-ECDIS Digital Displays May Portray Data Differently

Navigation systems certified to meet the exacting performance standards established by the International Maritime Organization (IMO) are said to be ECDIS “type approved.” The symbology used to display ENCs or other non-ENC navigational data on non-ECDIS systems, such as geographic information systems, recreational GPS and other chart display systems can differ significantly from the symbology specified for ECDIS type approved systems. U.S. Chart No. 1 only shows the symbology used on ECDIS.

### U.S. Chart No. 1 and Typical Chart Layouts

A brief description of the columns on each symbol description page is provided here. A detailed schematic layout of U.S. Chart No. 1 is on page 8. Section A, on pages 10 and 11 presents schematics showing typical layouts of the major elements of NOAA and NGA charts.

Col 1 — Symbol number. The number together with the section letter which appears at the top of each page constitutes a unique identifier for each symbol, such as C1 for the “Coastline, surveyed” symbol.

Col 2 — INT symbol example.

Col 3 — Description of the feature or real world phenomenon being portrayed.

Col 4 — NOAA symbol example. This column will be blank if NOAA uses the INT symbol shown in column 2.

Col 5 — NGA symbol example. This column will be blank if NGA uses the INT symbol shown in column 2.

If columns 4 and 5 are combined, then NOAA and NGA both use the same symbol, which is different from the INT symbol.

Col 6 — Other NGA symbol examples. NGA produces facsimiles of some foreign charts. If the depiction on the chart is different than the INT or NGA symbols (shown in Cols 2 and 5, respectively) then the additional foreign symbols are shown here.

Col 7 — ECDIS symbol example in the day color palettes.  
(See page 9 for a description of ECDIS color palettes.)

Col 8 — The ECDIS description usually provides the generic symbol name given in the *IHO Specifications for Chart Content and Display Aspects of ECDIS*, although sometimes other clarifying terms are also provided.

The schematic layout on page 7 shows a typical symbol table page and provides more details about the table headers and the types of information presented in each of the columns.

## INFORMATION ON SELECTED CHART FEATURES

### 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 b in Section A). For ECDIS, the sounding datum is part of the ENC metadata, which can be retrieved through a cursor inquiry.

### 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. For ECDIS, the unit of height is meters.

### 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 (or in the ENC metadata). 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 C 1). Apparent shoreline is used on charts to show the outer edge of marine vegetation where the limit would be expected to appear as the shoreline to the mariner or where it prevents the shoreline from being clearly defined. Apparent shoreline is symbolized by a light line (symbols C 32, C 33, C p, C q and C r).

### 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 mariner may be shown by actual shape as viewed from above (see Sections D and E).

On NGA charts, landmark legends shown in capital letters indicate that a 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 a landmark has been positioned accurately; legends using both upper and lower case letters indicate an approximate position.

ECDIS portrays conspicuous features with black symbols and non-conspicuous features with brown symbols. Only the conspicuous version is shown in the lettered sections of U.S. Chart No. 1. See the ECDIS “Conspicuous and Non-Conspicuous Features” page in front of Section E for more information.

## 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 rules.

The major difference between the two buoyage regions is the color of the lateral marks. Region A uses red to port and Region B uses red to starboard (red-right-returning). The shapes of the lateral marks are the same in both regions, can to port and cone (nun) to starboard, when entering from seaward. Cardinal and other marks, such as those for isolated dangers, safe water 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 are in 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, FI WG 12/8M means 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 and the middle range is indicated by a dash. For example, FI WRG 12-8M means 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 between 8 to 12 nautical miles. The dash can appear in any of the three positions.

### Aids to Navigation Positioning

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.

## Traffic Separation Schemes

Traffic separation schemes show recommended 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 also show the date of the latest U.S. Coast Guard Local Notice to Mariners applied to the chart.

## ADDITIONAL RESOURCES

Information on the use of nautical charts, aids to navigation, sounding datums and the practice of navigation in general is in *The American Practical Navigator* (Bowditch), available through the “Publications” link on the NGA Maritime Safety Information portal at <https://msi.nga.mil/NGAPortal/MSI.portal>.

Tide and current data over U.S. waters is available from the NOAA Center for Operational Oceanographic Products and Services at <https://tidesandcurrents.noaa.gov>.

Detailed information about specific lights, buoys, and beacons and general information about the U.S. Aids to Navigation System and the Uniform State Waterway Marking Systems is in the U.S. Coast Guard *Light List*, at <https://www.navcen.uscg.gov/?pageName=lightLists>.

Information about aids to navigation in foreign waters is in the NGA *List of Lights*, available through the “Publications” link on the NGA Maritime Safety Information portal at <https://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*®, at <https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html> and NGA *Sailing Directions*, available through the “Publications” link on the NGA Maritime Safety Information portal at <https://msi.nga.mil/NGAPortal/MSI.portal>.

U.S. Nautical Chart Catalogs and Indexes

NGA catalogs are available through the “Product Catalog” link on the NGA Maritime Safety Information portal at <https://msi.nga.mil/NGAPortal/MSI.portal>.

NOAA catalogs are available at the NOAA Chart Locator at [www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml](http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml) and the NOAA Nautical Chart Catalog and Chart Viewer at [www.charts.noaa.gov/ChartCatalog/MapSelect.html](http://www.charts.noaa.gov/ChartCatalog/MapSelect.html).

A list of the dates of the latest editions of NOAA charts is at <https://nauticalcharts.noaa.gov/charts/list-of-latest-editions.html>.

## CORRECTIONS AND COMMENTS

Corrections to U.S. Chart No. 1 will appear in the weekly U.S. Notice to Mariners, available through the “Notice to Mariners” link on the NGA Maritime Safety Information portal at <https://msi.nga.mil/NGAPortal/MSI.portal>.

Corrections, comments, or questions regarding U.S. Chart No. 1 may be submitted through ASSIST, the NOAA Coast Survey stakeholder engagement and feedback website at [www.nauticalcharts.noaa.gov/customer-service/assist](http://www.nauticalcharts.noaa.gov/customer-service/assist).

or to:

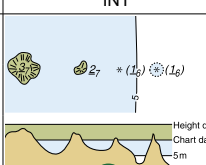




National Ocean Service, NOAA (N/CS2)  
Attention: U.S. Chart No. 1  
1315 East West Highway  
Silver Spring, MD 20910-3282

## Schematic Layout of U.S. Chart No. 1:

**(A) K Rocks, Wrecks, Obstructions (B)**

**(C) Rocks** **(D) Supplementary national symbol: a**

**(E) Plane of Reference for Heights → H Plane of Reference for Depths → H**


No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
11		Rock which covers and uncovers, height above chart datum					rock which covers and uncovers or is awash at low water
(1)	(2)	(3)	(4a)	(4b)	(5)	(6)	(7)

(A)	Section designation
(B)	Section
(C)	Sub-section
(D)	Reference to "Supplementary national symbols" at the end of each section
(E)	Cross-reference to terms in other sections
(1)	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.
(2)	Column 2: Representation that follows the "Chart Specifications of the IHO" (INT 1 symbol)
(3)	Column 3: Description of symbol, term, or abbreviation
(4a)*	Column 4a: Representation used on charts produced by the National Oceanic and Atmospheric Administration (NOAA)
(4b)*	Column 4b: Representation used on charts produced by the National Geospatial-Intelligence Agency (NGA)
(5)	Column 5: Representation of symbols that may appear on NGA reproductions of foreign charts
(6)**	Column 6: Representation used to portray ENC data on ECDIS
(7)**	Column 7: Description of ECDIS symbols

\* When columns 4a and 4b are combined then NOAA and NGA both use the same symbol. When either column 4a or 4b is blank then the respective agency uses the INT 1 symbol shown in column 2.

\*\* When columns 6 and 7 have several rows for the same symbol number, then ECDIS portrays this feature differently depending on the ship's draft and other conditions as defined in ECDIS by the mariner (as is the case for K 11). When columns 6 and 7 combine rows to span across several symbol numbers then ECDIS portrays all of the grouped symbol numbers the same way (see C 5–C 7).

† Signifies that this representation is obsolete, but it may appear on older charts.

 Signifies that a feature attribute value, such as a height, distance or name, may be obtained through an ECDIS cursor pick report. There are many attribute values that may be obtained in this manner, but the cursor pick icon is only used to note values that are specifically referred to in the description of symbols column and that ECDIS does not display next to the symbol. Height of trees in C 14 is an example.

## Day, Dusk and Night Color Palettes



ECDIS allows the mariner to change the color palette that is used to display an ENC. Three different color tables have been designed to provide the maximum clarity and contrast between features on the display under three different lighting conditions on the bridge, namely Day, Dusk and Night.

Each symbol is rendered in a different color appropriate for the lighting condition that the color table is meant for. This design provides maximum contrast for the display on a sunny day, as well as preserving night vision on a dimly lit bridge in the evening. This allows the mariner to look back and forth between the chart on the ECDIS display and out to sea through the bridge window without the mariner's eyes needing to readjust to a difference in light intensity.

- The Day Color Table, meant to be used in bright sunlight, uses a white background for deep water and looks the most like a traditional paper chart.
- The Dusk Color Table uses a black background for deep water and colors are subdued, but slightly brighter than those used in the Night Color Table.
- The Night Color Table, meant to be used in the darkest conditions, uses a black background for deep water and muted color shades for other features.

The images on the right show each of the three color palettes.

The symbols shown in the remainder of this document use the day color palette.

DAY



DUSK



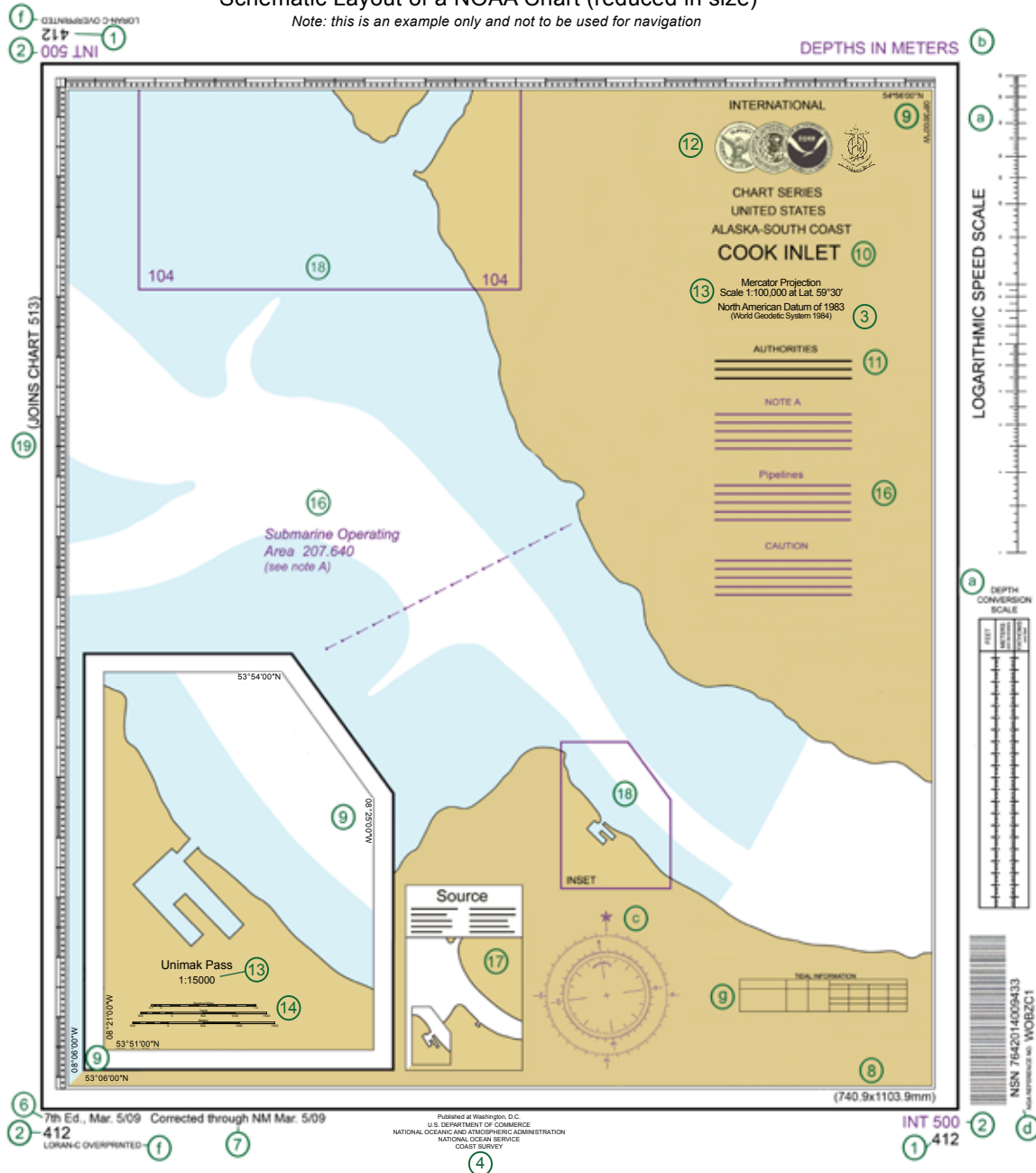
NIGHT



**A** Chart Number, Title, Marginal Notes

### Schematic Layout of a NOAA Chart (reduced in size)

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



Magnetic Features → B	
Tidal Data → H	
①	Chart number in national chart series
②	Chart number in international (INT) series (if any)
③	Reference ellipsoid of the chart
④	Publication note (imprint)
⑤	Copyright note
⑥	Date of current edition
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

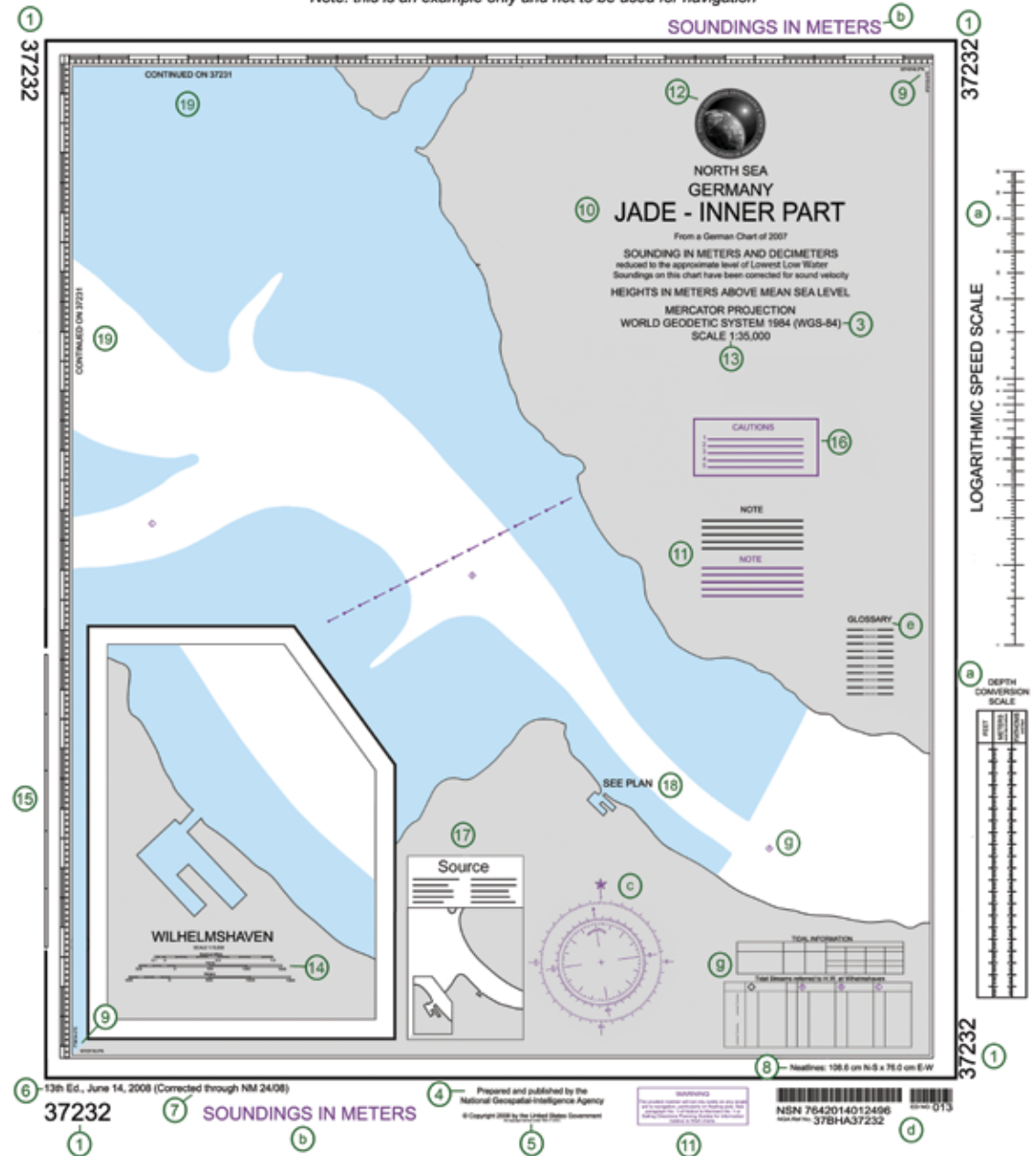


# Chart Number, Title, Marginal Notes A

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). Navigators should be cautious where surveys are inadequate.
18	Reference to a larger scale chart
19	Reference to an adjoining chart of similar scale
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
g	Tidal and Tidal Stream information within the chart coverage

## Schematic Layout of an NGA Chart (reduced in size)

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





# B Positions, Distances, Directions, Compass

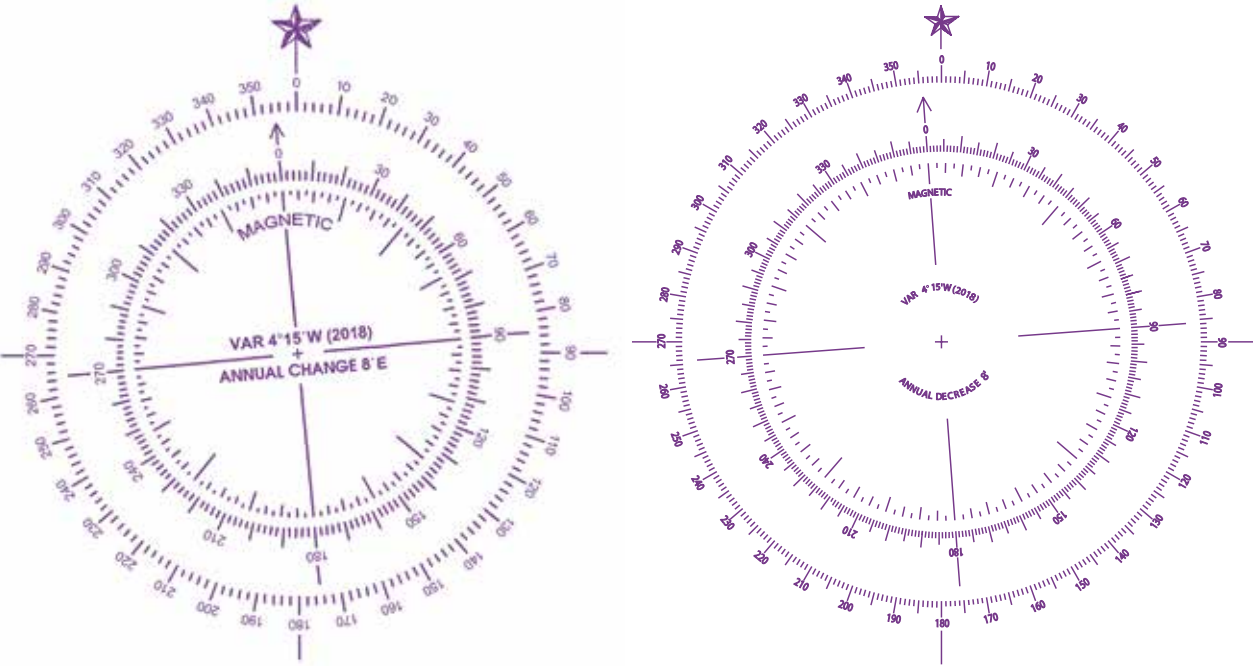

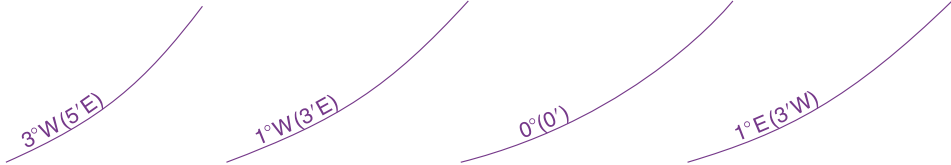

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Geographical Positions						
1	Lat	Latitude				
2	Long	Longitude				
4		Degree(s)		deg		
5		Minute(s) of arc				
6		Second(s) of arc				
7	PA	Position approximate (not accurately determined or does not remain fixed)	PA	(PA)		PA Position approximate
						? Point feature or area of low accuracy
						(21) Sounding of low accuracy
8	PD	Position doubtful (reported in various positions)	PD	(PD)		? Point feature or area of low accuracy
						(21) Sounding of low accuracy
9	N	North				
10	E	East				
11	S	South				
12	W	West				
13	NE	Northeast				
14	SE	Southeast				
15	NW	Northwest				
16	SW	Southwest				

# Positions, Distances, Directions, Compass B




No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
Control Points							
20		Triangulation Point					Position of an elevation or control point
21		Observation spot					
22		Fixed point					
25.1		Distance along waterway, no visible marker					Canal and distance point with no mark
25.2		Distance along waterway with visible marker					Canal and distance point
	Note: ECDIS uses a magenta “km” symbol to represent distance marks. However, the distances shown along waterways on NOAA-produced ENCs are displayed in statute miles.						
Symbolized Positions (Examples)							
30		Symbols in plan—position is center of primary symbol				ECDIS follows the paper chart convention for the position of symbols, except for simplified symbols for buoys and beacons (see Q 1).	
31		Symbols in plan—position is at bottom of symbol					
32		Point symbols					Position of a point feature
33		Point symbols—approximate positions				ECDIS indicates approximate position only for wrecks, obstructions, islets and shoreline features.	
Units						Supplementary national symbols <i>a–m</i>	
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) (1852m), sea mile(s)	Mi NMi NM				
47	ft	Foot / Feet					
48	fm, fms	Fathom(s)					

## B Positions, Distances, Directions, Compass

No.	INT		Description	NOAA	NGA	Other NGA	ECDIS
49	h		Hour(s)	hr			
50	m	min	Minute(s) of time				
51	s	sec	Second(s) of time				
52	kn		Knot(s)				
53	t		Ton(s), Tonnage (weight)				
54	cd		Candela(s)				
Magnetic Compass							Supplementary national symbols <i>n</i>
68.1	<div>Magnetic Variation 4°30'W 2011 (8°E)</div>		Note of magnetic variation, in position				 Cursor pick site for magnetic variation at a point
							 Cursor pick site for magnetic variation over an area
68.2	Magnetic Variation at 55°N 8°W 4°30'W 2011 (8°E)		Note of magnetic variation, out of position				

No.	NOAA / NGA	ECDIS
70	<p>Compass rose, normal pattern (smaller patterns of compass rose may be used)</p> <p>Magnetic variation (example):            VAR 4°15'W (2018) means magnetic variation was 4°15'W in 2018            ANNUAL DECREASE 8' means annual change is 8'E or decreasing 8' annually            For 2019 the magnetic variation is 4°7'W</p> 	 <p>Cursor pick site for magnetic variation at a point</p>
71	<p>Isogonic lines, Isogonals</p> <p>MAGNETIC VARIATION LINES ARE FOR 2018            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.</p> 	 <p>Cursor pick site for magnetic variation along a line</p>




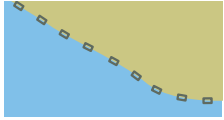
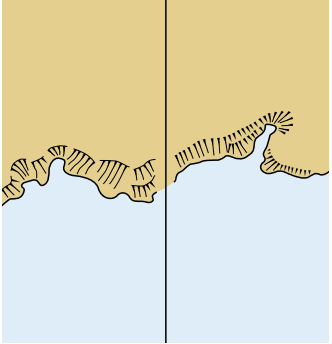




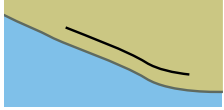
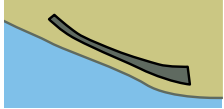



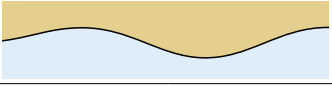
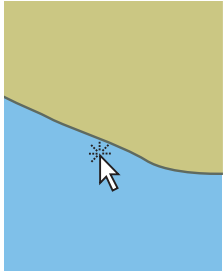

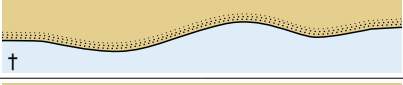
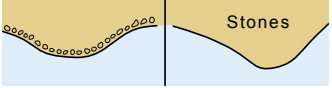




# B Positions, Distances, Directions, Compass

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
82.1		Local magnetic anomaly Within the enclosed area the magnetic variation may deviate from the normal by the value shown					Cursor pick site for magnetic anomaly along a line or over an area
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 DISTURBANCE (see note)	LOCAL MAGNETIC ANOMALY (see note)	LOCAL MAGNETIC DISTURBANCE (see note)		Cursor pick site for magnetic anomaly at a point
Supplementary National Symbols							
a		Square meter(s)	m <sup>2</sup>				
b		Cubic meter(s)	m <sup>3</sup>				
c		Inch(es)	in				
d		Yard(s)	yd				
e		Statute mile(s)	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(s)	kc				
l		Megacycle(s)	Mc				
m		Ton(s) (U.S. short ton) (2,000lbs)	T				
o		Benchmark	BM				
p		Variation	var	VAR		Varn	Magnetic variation

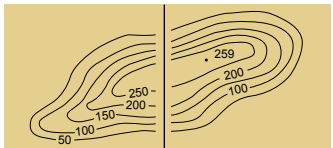
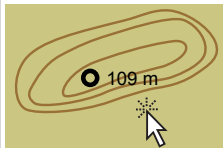
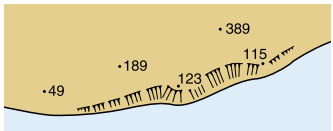
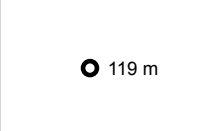
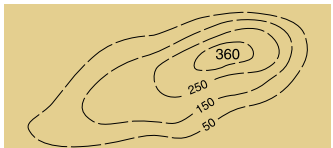
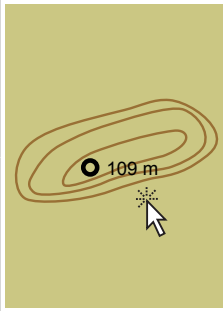
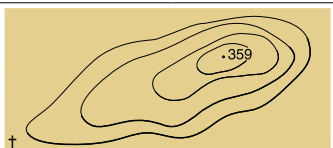

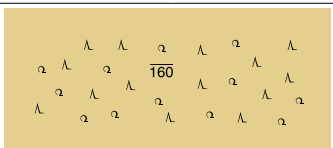
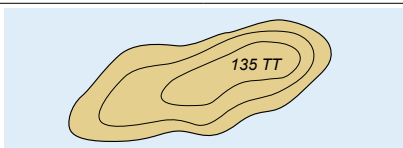
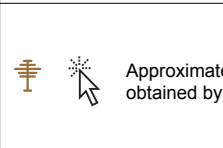

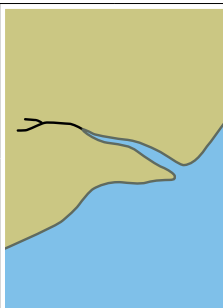
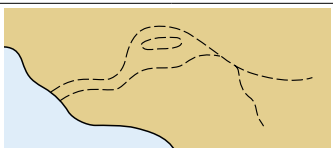
# Positions, Distances, Directions, Compass **B**

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
q		Magnetic	mag			
r		Bearing	brg			
s		True	T			

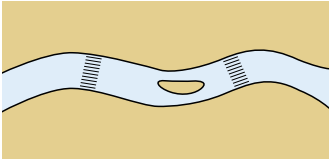
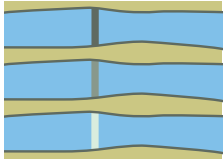
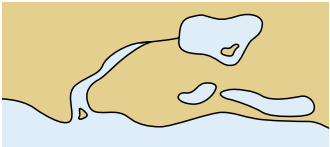

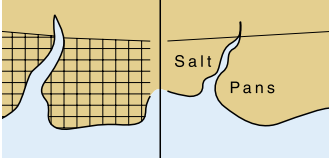
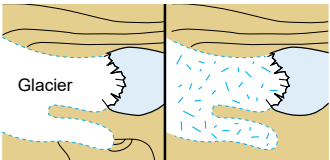
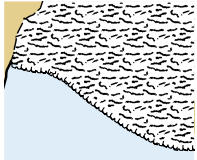

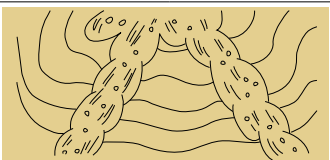
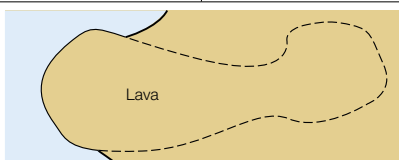
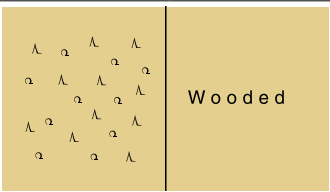
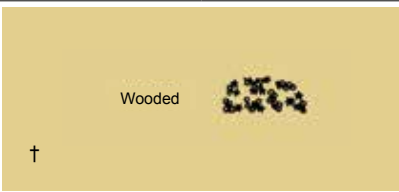
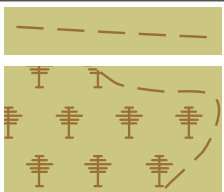
# C Natural Features








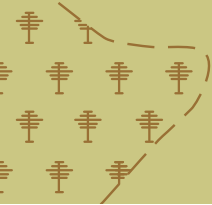






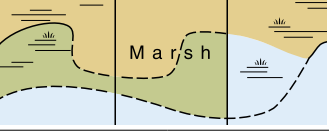



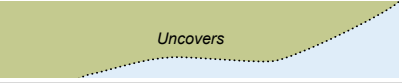

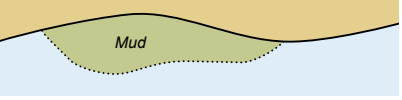
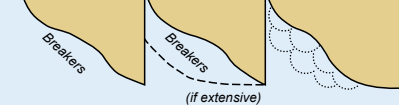
No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Coastline						Supplementary national symbols: a–e
Foreshore → I, J						
1		Coastline, surveyed				 Coastline
2		Coastline, unsurveyed				 Coastline or shoreline construction of low accuracy in position
3		Cliffs, Steep coast	 high low †  † 			 Presence of cliffs coincident with coastline is obtained by cursor pick  Sloping ground crest line distant from coastline, radar or visually conspicuous  Cliff as an area
4		Hillocks	 †			 Conspicuous hill or mountain top
5		Flat coast				 Nature of coastline is obtained by cursor pick
6		Sandy shore	 †			
7	 Stones	Stony shore, Shingly shore	 †			
8	 Dunes	Sandhills, Dunes	 †			 Conspicuous hill or mountain top



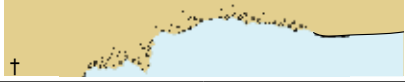













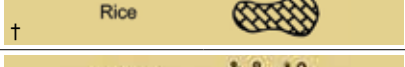
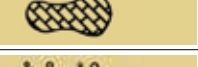
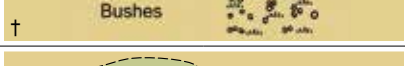





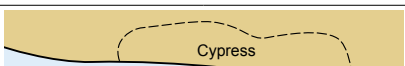
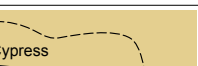




No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Relief						
Supplementary national symbols: e–g						
Plane of reference for heights → H						
10		Contour lines with values and spot height				 Elevation contour with spot height, contour value is obtained by cursor pick
11		Spot heights				 119 m Position of an elevation or control point
12		Approximate contour lines with values and approximate height				 Elevation contour with spot height, contour value is obtained by cursor pick
13		Form lines with spot height				
14		Approximate height of top of trees (above height datum)				 Approximate height of trees is obtained by cursor pick
Water Features, Lava						
20		River, Stream				 River
21		Intermittent river, intermittent lake				

# C Natural Features

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
22		Rapids, Waterfalls					Rapids Waterfall Waterfall, visually conspicuous
23		Lakes					Lake
24		Salt pans					
25		Glacier					Continuous pattern for an ice area (glacier, etc.)
26		Lava flow					
Vegetation							Supplementary national symbols: i-t
30		Woods in general					Line of trees Wooded area

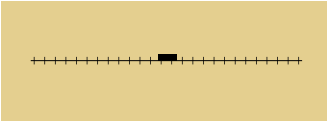
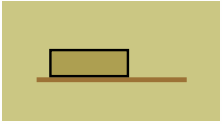
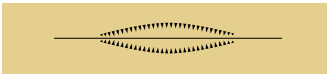

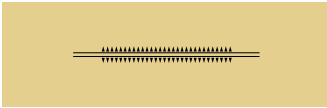
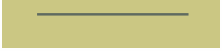

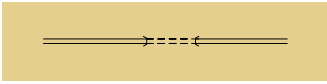
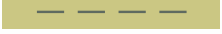

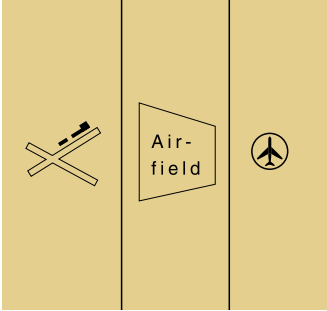
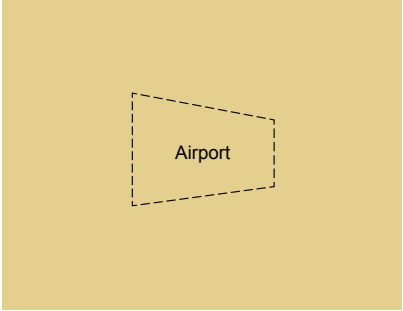


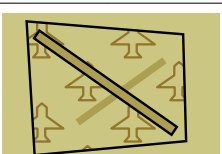

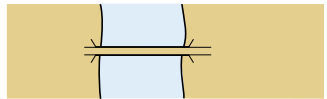

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
31	Prominent trees (isolated or in groups)					
31.1		Unspecified tree				 Tree
31.2		Evergreen (except conifer)				
31.3		Conifer, Casuarina				 Vegetation, line of trees
31.4		Palm				
31.5		Nipa Palm				 Wooded area
31.6		Casuarina				
31.7		Filao				
31.8		Eucalypt				
32		Mangrove, Nipa palm				 Mangrove with coastline or shoreline construction of low accuracy in position
33		Marsh, Swamp, Reed beds	 			 Marsh with coastline or shoreline construction of low accuracy in position
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				

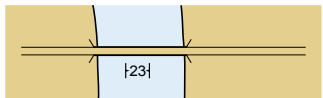

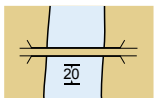
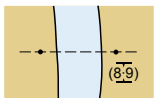
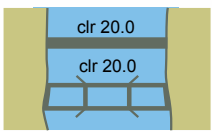
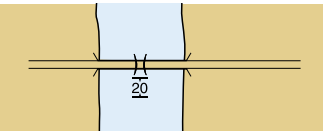
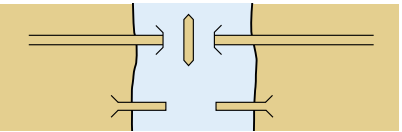
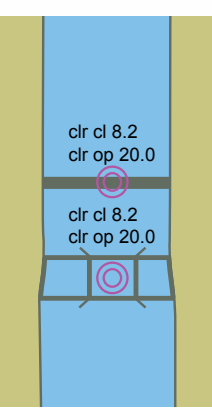
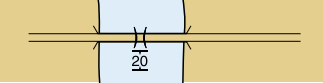
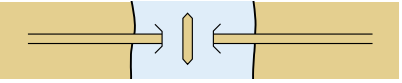
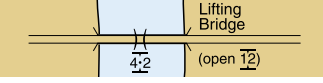
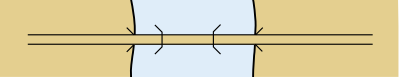
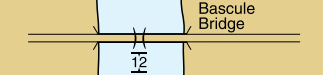
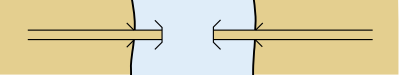
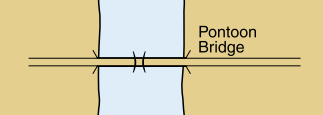
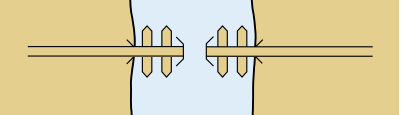

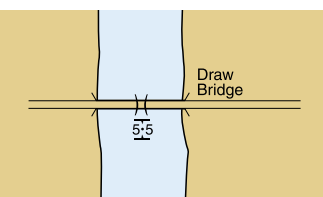
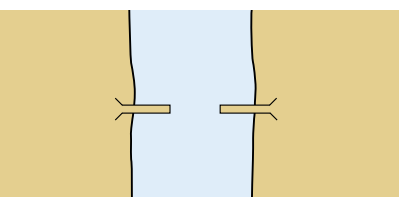
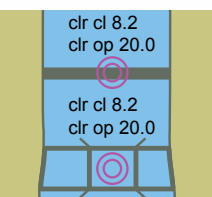
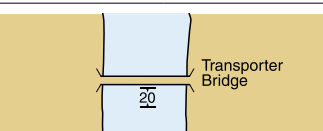
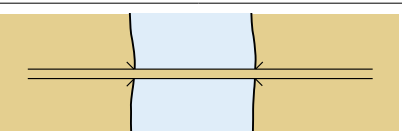
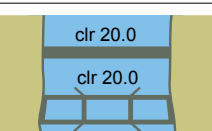
# C Natural Features

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
e		Rubble				
f		Hachures				
g		Shading				
i		Deciduous woodland				
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				

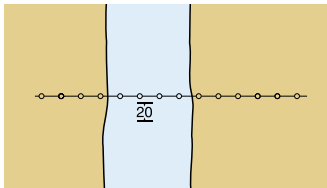

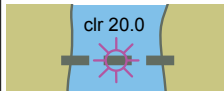
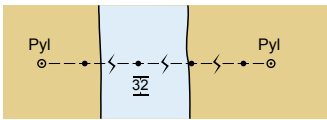
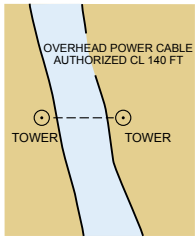
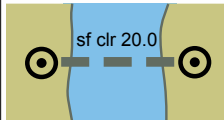
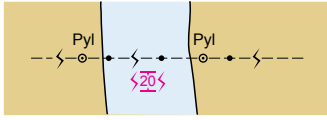
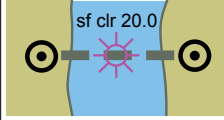
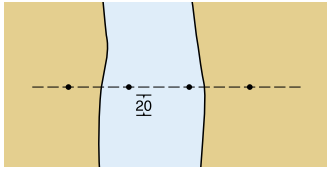
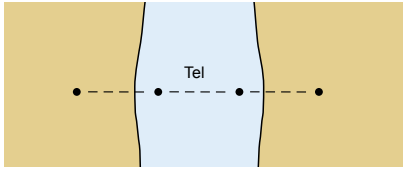
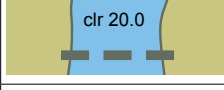
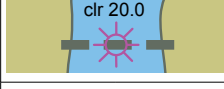
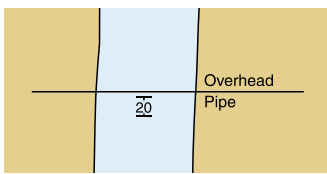
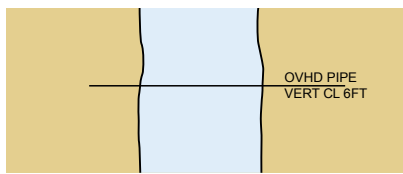

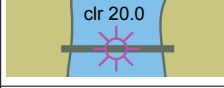

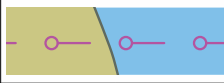

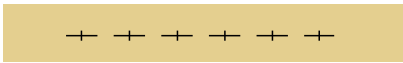
No.	INT		Description	NOAA	NGA	Other NGA	ECDIS	
Settlements, Buildings								
Height of objects → E			Landmarks → E					
1			Urban area					Built-up area
2			Settlement with scattered buildings					
3	○ Name	□ Name	Settlement (on medium and small scale charts)					Built-up area as a point
4	⛯ Name	■ Name HOTEL	Village					
5			Buildings					Conspicuous single building
6			Important building in built-up area					Conspicuous single building in built-up area
7			Street name, Road name					Street name is obtained by cursor pick
8			Ruin, Ruined landmark					Status of ruins is obtained by cursor pick
Roads, Railways, Airfields								
Supplementary National Symbols: a–c								
10			Motorway, highway					Road, track or path as a line
11			Road (hard surfaced)					
12			Track, Path (loose or unsurfaced)					Road as an area

# D Cultural Features

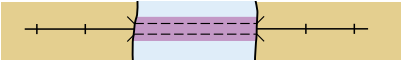
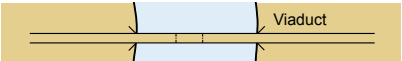
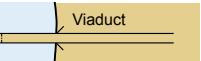

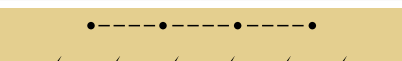
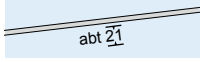
No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
13		Railway, with station					Railway, with station
14		Cutting					Cutting
15		Embankment					Embankment
							Embankment, visually or radar conspicuous
16		Tunnel					Tunnel
							Tunnel with depth below the seabed encoded
17		Airport, Airfield					Airport as a point
							Runway as a line
							Airport area, with runway area and visually conspicuous runway area
18		Heliport, Helipad					
Other Cultural Features						Supplementary National Symbols: d-i	
20.1		Fixed bridge					
20.2		Footbridge, fixed bridge on smaller scale charts					

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
21		Horizontal clearance	FIXED BRIDGE HOR CL 25 FT VERT CL 20 FT	HOR CL 8 M I-8-I		 Horizontal clearance is obtained by cursor pick	
22	 	Vertical clearance (see introduction)		VERT CL 6 M I-6-I			Bridge
23.1		Opening bridge (in general) with vertical clearance					Opening bridge
23.2		Swing bridge with vertical clearance					
23.3		Lifting bridge with vertical clearance (closed and open)					
23.4		Bascule bridge with vertical clearance					
23.5		Pontoon bridge					Bridge
23.6		Draw bridge with vertical clearance					Opening bridge
24		Transporter bridge with vertical clearance below fixed structure					Bridge

# D Cultural Features

































No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
25		Overhead transporter, Aerial cableway with vertical clearance					Aerial cableway
							Aerial cableway, radar conspicuous
26.1		Overhead power cable with pylons and physical vertical clearance					Transmission line
26.2		Overhead power cable with pylons and safe vertical clearance					Transmission line, radar conspicuous
Note D26.2: The safe vertical clearance defined by the responsible authority, to avoid risk of electrical discharge, has been obtained by applying a reduction to the physical vertical clearance of the cable. The reduction is variable and depends upon the transmission voltage. See H20.							
27		Overhead cable, Telephone line, with vertical clearance					Overhead cable
							Overhead cable, radar conspicuous
28		Overhead pipe with vertical clearance					Overhead pipeline
							Overhead pipeline, radar conspicuous
29		Pipeline on land					Oil, gas pipeline, submerged or on land
Supplementary National Symbols							
a		Highway markers					
c		Abandoned railroad					





















No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
d		Bridge under construction					
f		Viaduct					
g		Fence					
h		Power transmission line					
i		Approximate vertical clearance					








# Conspicuous and Non-conspicuous Features

















































There are 25 features for which ECDIS displays either a black symbol, if the feature is visually conspicuous, or a brown symbol if it is not. Only conspicuous landmarks are depicted on NOAA paper charts and ENC's. Therefore, only the conspicuous symbol versions are shown in the symbol tables of U.S. Chart No. 1. Both versions of the symbols for these features are shown on this page.

Cairn		
Chimney		
Dish aerial		
Dome		
Flare stack		
Fortified structure		
Hill or mountain top		
Mast		
Monument		
Mosque or minaret		
Position of a point feature		
Radar scanner		
Radio, television tower		
Refinery		
Religious building, Christian		
Religious building, non-Christian		












































































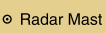









Silo		
Single building		
Tank		
Tank farm		
Tower		
Water tower		
Windmill		
Windmotor		
Wind generator farm		

















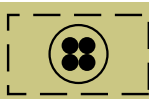






























The seven symbols shown below represent features that only have a brown symbol. There is no corresponding black, conspicuous symbol. The brown symbol is displayed regardless of the conspicuousness of the feature.

Cranes	
Flagstaff, flagpole	
Mangrove	
Mine, quarry	
Quarry	
Timber yard	
Tree	











No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
Plane of Reference for Height → H		Lighthouses → P	Beacons → Q				
General							
1	<div> Factory</div> <div> Hotel</div>	Examples of landmarks	<div> TANK</div> <div> Tr</div> <div> MONUMENT</div>			<div></div> <div></div> <div></div>	Non-conspicuous point feature Non-conspicuous building Non-conspicuous water tower
2	<div> FACTORY</div> <div> HOTEL</div> <div> WATER TR</div>	Examples of conspicuous landmarks (On NOAA charts, a large circle with dot and capitals indicates that position is accurate; a small circle with lowercase indicates that position is approximate.)	<div> EMPIRE STATE BUILDING</div> <div> SPIRE</div> <div> RADAR MAST</div> <div> CHIMNEY</div>			<div></div> <div></div> <div></div>	Conspicuous point feature Conspicuous building Conspicuous water tower
3.1	<div></div>	Pictorial sketches (in true position)				<div></div>	The information symbol is displayed if a supplemental image is available, which may be accessed by cursor pick
3.2	<div></div>	Pictorial sketches (out of position)					
4	<div> (30)</div>	Height of top of a structure above height datum				<div></div> <div>Height is obtained by cursor pick</div>	
5	<div> (30)</div>	Height of structure above ground level					
Landmarks							
10.1	<div></div> <div></div> <div>Ch</div>	Church			<div></div> <div></div>	<div></div> <div></div>	Church as a point Church as an area
	10.2	<div> Tr</div> <div> Tr</div>	Church tower				<div></div>
10.3	<div> Sp</div> <div> Sp</div>	Church spire	<div> SPIRE</div> <div> Spire</div>		<div></div> <div></div> <div></div>		
10.4	<div> Cup</div> <div> Cup</div>	Church cupola (dome)	<div> CUPOLA</div> <div> Cup</div>		<div></div>		
13	<div></div>	Temple, Pagoda, Shrine, Marabout, Joss house			<div></div>	<div></div>	Religious building, non-Christian

# E Landmarks

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
17		Mosque, Minaret				 Mosque or minaret
19		Cemetery				 Landmark area, type is obtained by cursor pick
20	 Tr	Tower	 TOWER  Tr	 Tr 		 Tower
21		Water tower, Water tank on a tower	 STANDPIPE  S'pipe	 WTR TR  Wtr Tr		 Water tower
22	 Chy	Chimney	 CHIMNEY  Chy	 CHY 		 Chimney
23		Flare stack (on land)	 FLARE  Flare			 Flare stack
24	 Mon	Monument (including column, pillar, obelisk, statue, calvary cross)	 MONUMENT  Mon		 	 Monument
25.1		Windmill	 WINDMILL  Windmill 	 	 	 Windmill, status of ruins is obtained by cursor pick
25.2	 Ru	Windmill (without sails)				
26.1	 	Wind turbine, Windmotor	 WINDMOTOR  Windmotor			 Wind motor
26.2	 	Onshore wind farm	 WIND FARM  Wind Farm			 Wind generator farm
27	 FS	Flagstaff, Flagpole	 FS  FP  FS  FP			 Flagstaff, flagpole
28		Radio mast, Television mast	 R MAST  TV MAST  R Mast  TV Mast			 Mast
29		Radio tower, Television tower	 R TR  TV TR  R Tr  TV Tr			 Radio, television tower
30.1	 	Radar mast	 RADAR MAST  Radar Mast			 Mast
30.2	 	Radar tower	 RADAR TR  Radar Tr			 Radar tower

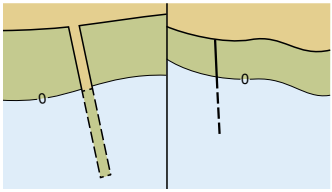








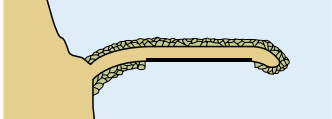
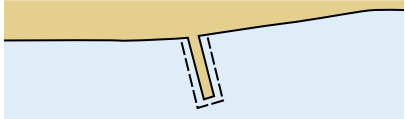


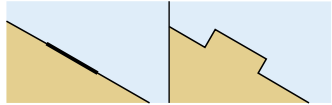




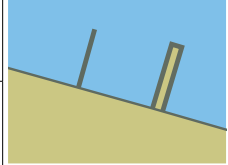
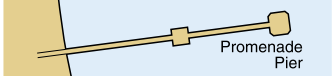
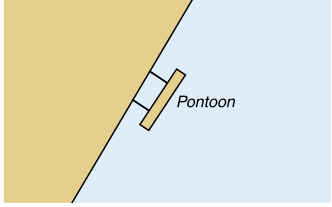



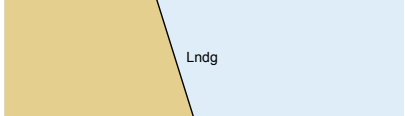

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
30.3	◉ Radar Sc	Radar scanner					Radar scanner
30.4	◉ Radome	Radome	 DOME (RADAR)  Dome (Radar)	 RADOME  Radome			Dome
31		Dish aerial	 ANT (RADAR)  Ant (Radar)				Dish aerial
32	  Tanks	Tanks	 TANK   Tk				Tank
							Tank farm
33	 Silo  Silo	Silo	 SILO  ELEVATOR	 Silo  Elevator			Silo
34.1		Fortified structure (on large scale charts)	 				Fortified structure
34.2		Castle, Fort, Blockhouse (on small scale charts)					Fortified structure
34.3		Battery, Small fort (on small scale charts)					
35.1		Quarry (on large scale charts)					Quarry area
35.2		Quarry (on small scale charts)					Quarry
36		Mine					
37.1		Recreational vehicle site					
37.2		Camping site (including recreational vehicles)					
Supplementary National Symbols							
a		Muslim shrine	 				
b		Tomb	 				
c		Watermill	 				

# E Landmarks

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
d		Factory	  Facty				
e		Well	 Well				
f		School	 Sch	 Sch			
g		Hospital	 Hosp				
h		University	 Univ	 Univ			
i		Gable	 GAB  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				

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Protective Structures						Supplementary national symbols: a–c
1		Dike, Levee, Berm				 Dike as a line  Dike as a line, conspicuous  Dike as an area
2.1		Seawall (on large scale charts)				 Seawall
2.2		Seawall (on small scale charts)				
3		Causeway				 Causeway as a line  Causeway, covers and uncovers as a line  Causeway as an area  Causeway, covers and uncovers as an area
4.1		Breakwater (in general)				 Breakwater as a line   Breakwater as an area
4.2		Breakwater (loose boulders, tetrapods, etc.)				
4.3		Breakwater (slope of concrete or masonry)				
5		Training wall (partly submerged at high water)				 Training wall


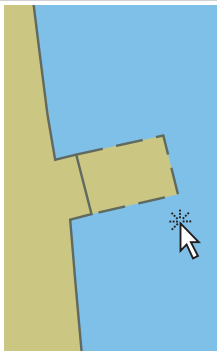
# F Ports

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
6		Groin (partly submerged at high water)				 Groin (intertidal)
Harbor Installations						
Depths → I      Anchorages, Limits → N      Beacons and other fixed marks → Q      Marina → U						
10		Fishing harbor				 Fishing harbor
11.1		Boat harbor, Marina				 Yacht harbor, marina
11.2		Yacht berths without facilities				
11.3		Yacht club, Sailing club				
12		Mole (with berthing facility)				 Mole as a line  Mole as an area
13		Quay, Wharf	 Whf			 Wharf (quay)
14		Pier, Jetty	 Pier			 Pier (jetty), promenade pier
15		Promenade pier				
16		Pontoon				 Pontoon as a line  Pontoon as an area
17		Landing for boats	 Lndg			 Landing



No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
18		Steps, Landing stairs				Landing steps
19.1		Designation of berth	3 A 3			Nr 3
19.2		Visitors' berth				Yacht harbor, marina
19.3		Dangerous cargo berth				
20		Dolphin				Mooring dolphin
21		Deviation dolphin				Deviation mooring dolphin
22		Minor post or pile				Pile or bollard
23		Slipway, Patent slip, Ramp				Slipway, ramp
24		Gridiron, Scrubbing grid, Careening grid				Gridiron
25		Dry dock, Graving dock				Dry dock
26		Floating dock				Floating dock as a line Floating dock as an area
27		Non-tidal basin, Wet dock				Wet dock and gate


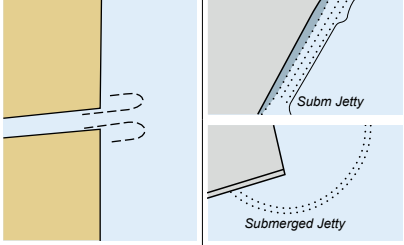
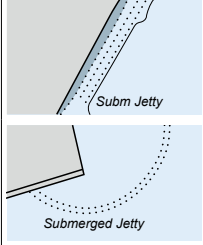


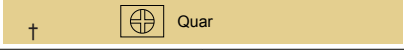
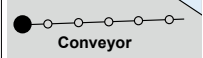
# F Ports

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
28		Tidal basin, Tidal harbor				 Dock
						 Dock, under construction or ruined
29.1	 Log Pond	Floating barrier, e.g. security, containment booms (ice, logs, oil), shark nets: - with supports - without supports				 Floating hazard
	 Floating Barrier					 Boom  Floating oil barrier, oil retention (high pressure pipe) Boom, floating obstruction
29.2	 Bubble Curtain	Bubble curtain (bubbler, pneumatic pipe)				 Floating oil barrier, oil retention (high pressure pipe)
30	 Dock under construction (2011)	Works on land, with year date				
31	 Area under reclamation (2011)	Works at sea, Area under reclamation, with year date	 Under construction (2011)	 Under constr		
32	Under construction (2011) Works in progress (2011)	Works under construction, with year date	 Under constr (2011)			
33.1	 Ru	Ruin	 Ruins			
33.2	 Pier (ru)	Ruined pier, partly submerged at high water	 Pier			 Pier, ruined and partly submerged
34	 Hulk	Hulk	 Hk			 Hulk

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
Canals, Barrages						Supplementary national symbol: d	
Cultural Features → B		Clearances → D	Signal Stations → T				
40		Canal					Canal
41.1		Lock (on large scale charts)					Lock gate as a line
							Lock gate as an area
41.2		Lock (on small scale charts)					Navigable lock gate
42		Gate, Caisson					Non-navigable lock gate
							Caisson as a line
							Caisson as an area
43		Flood barrage					Non-navigable lock gate
							Flood barrage as a line
							Flood barrage as an area
44		Dam, Weir (direction of flow shown is left to right)					Dam as a line
							Dam as an area

# F Ports

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Transshipment Facilities						Supplementary national symbols: e–f
Roads → D		Railways → D	Tanks → E			
50		Roll-on, Roll-off Ferry Terminal (RoRo Terminal)				RoRo RoRo terminal
51		Transit shed, Warehouse (with designation)				 Conspicuous single building, designation is obtained by cursor pick
52		Timber yard				  Timber yard as a point Timber yard as an area
53.1		Crane with lifting capacity, Traveling crane (on railway)				 Lifting capacity is obtained by cursor pick  Crane as a point
53.2		Container crane (with lifting capacity)				 Crane as an area  Crane, visually conspicuous as an area
Public Buildings						Supplementary national symbol: g
60		Harbormaster's office				 Conspicuous single building
61		Custom office				 Conspicuous single building  Customs
62.1		Health office, Quarantine building				 Conspicuous single building
62.2		Hospital				
63		Post office				

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Supplementary National Symbols						
a		Jetty (partly below MHW)				
b		Submerged jetty				
c		Jetty (on small scale charts)				
d		Pump-out facilities				
e		Quarantine office				
g		Conveyor				

# H Tides, Currents

## Terms Relating to Tide Levels

INT Terms		
No.	Term	Description
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
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

Supplementary National Terms (see I-t for other terms and symbols)		
No.	Term	Description
a	HW	High Water
b	HHW	Higher High Water
c	LW	Low Water
d	LWD	Low Water Datum
e	LLW	Lower Low Water
f	MTL	Mean Tide Level
g	ISLW	Indian Spring Low Water
h	HWF&C	High Water Full and Change (Vulgar establishment of the port)
i	LWF&C	Low Water Full and Change
j	CRD	Columbia River Datum
k	GCLWD	Gulf Coast Low Water Datum

No.	
Tidal Levels and Charted Data	
Tide Gauge → T	
20	<div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div>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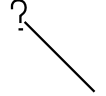
# H Tides, Currents

No.	INT					ECDIS																																																																													
31	Tidal stream table	<div>Tidal streams referred to . . .</div> <table><tr><td>Hours</td><td></td><td colspan="2">Geographical Position</td><td colspan="2"></td></tr><tr><td rowspan="6">Before High Water 6 5 4 3 2 1</td><td rowspan="6"></td><td rowspan="6">Directions of streams (degrees)</td><td rowspan="6">Rates at spring tides (knots)</td><td rowspan="6">Rates at neap tides (knots)</td><td></td><td>53°51.2' N 7° 17.8' E</td></tr><tr><td>-6</td><td>261</td><td>0.8</td><td>0.7</td></tr><tr><td>-5</td><td>170</td><td>0.2</td><td>0.1</td></tr><tr><td>-4</td><td>097</td><td>1.1</td><td>0.8</td></tr><tr><td>-3</td><td>095</td><td>1.5</td><td>1.2</td></tr><tr><td>-2</td><td>094</td><td>1.3</td><td>1.1</td></tr><tr><td rowspan="6">High Water 1 2 3 4 5 6</td><td rowspan="6"></td><td rowspan="6">Directions of streams (degrees)</td><td rowspan="6">Rates at spring tides (knots)</td><td rowspan="6">Rates at neap tides (knots)</td><td>-1</td><td>092</td><td>1.0</td><td>0.9</td></tr><tr><td>0</td><td>081</td><td>0.7</td><td>0.6</td></tr><tr><td>+1</td><td>038</td><td>0.3</td><td>0.2</td></tr><tr><td>+2</td><td>291</td><td>0.6</td><td>0.4</td></tr><tr><td>+3</td><td>277</td><td>1.0</td><td>0.8</td></tr><tr><td>+4</td><td>270</td><td>1.2</td><td>1.0</td></tr><tr><td rowspan="2">After High Water 5 6</td><td rowspan="2"></td><td rowspan="2">Directions of streams (degrees)</td><td rowspan="2">Rates at spring tides (knots)</td><td rowspan="2">Rates at neap tides (knots)</td><td>+5</td><td>267</td><td>1.1</td><td>1.0</td></tr><tr><td>+6</td><td>264</td><td>1.0</td><td>0.9</td></tr></table>					Hours		Geographical Position				Before High Water 6 5 4 3 2 1		Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)		53°51.2' N 7° 17.8' E	-6	261	0.8	0.7	-5	170	0.2	0.1	-4	097	1.1	0.8	-3	095	1.5	1.2	-2	094	1.3	1.1	High Water 1 2 3 4 5 6		Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	-1	092	1.0	0.9	0	081	0.7	0.6	+1	038	0.3	0.2	+2	291	0.6	0.4	+3	277	1.0	0.8	+4	270	1.2	1.0	After High Water 5 6		Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	+5	267	1.1	1.0	+6	264	1.0	0.9	 	Point or area for which a tidal stream table is available  Boundary of an area for which there is tidal information
Hours		Geographical Position																																																																																	
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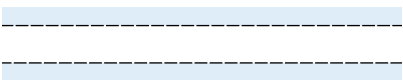
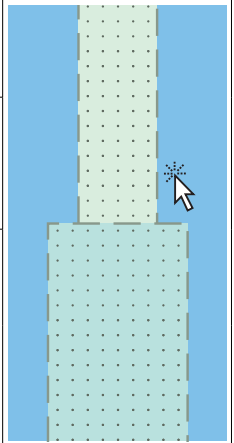
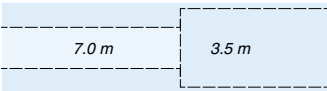
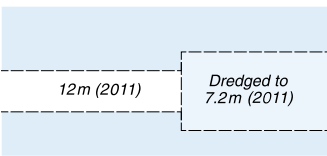
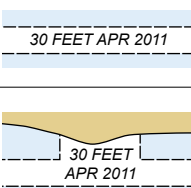
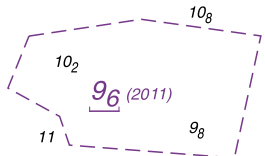

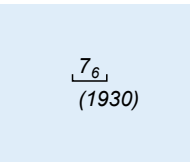

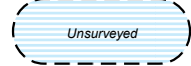
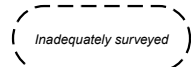
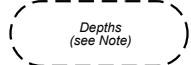

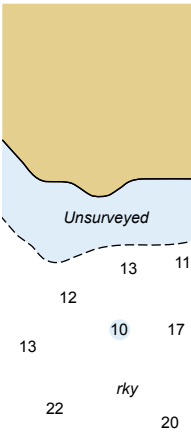
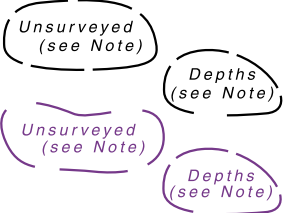
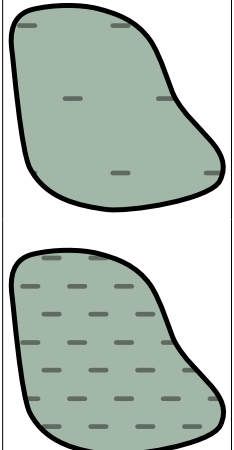
No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
42		Current in restricted waters					Non-tidal current
43	<i>2.5 – 4.5 kn</i> <i>Jan – Mar</i> <i>(see Note)</i>	Ocean current with rates and seasons			 <i>(see Note)</i>		
44		Overfalls, tide rips, races	<i>Tide rips</i>  symbol used only in small areas				Overfalls, tide rips; eddies; breakers as point, line, and area
45		Eddies	 <i>Eddies</i> symbol used only in small areas				
46		Position of tabulated tidal stream data with designation					Point for which a tidal stream table is available
47		Offshore position for which tidal levels are tabulated					
Supplementary National Symbols (Supplementary national terms relating to tidal levels are listed after H 17)							
l		Stream		Str			
m		Current, general, with rate					
n		Velocity, Rate		vel			
o		Knots		kn			
p		Height		ht			
q		Flood		fl			
u		Gulf Stream Limits		 <i>Approximate location of Axis of Gulf Stream</i>			

# I Depths

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
General						
1	ED	Existence doubtful				 Sounding of low accuracy
2	SD	Sounding of doubtful depth				  Underwater hazard with depth greater than 20 meters  Isolated danger of depth less than the safety contour
3.1	Rep	Reported, but not confirmed				  Point feature or area of low accuracy
3.2	Rep (2011)	Reported (with year of report), but not confirmed				 Low accuracy line demarking area wreck or obstruction  Low accuracy line demarking foul area
4	 	Reported, but not confirmed sounding or danger (on small scale charts only)				 Obstruction, depth not stated  Sounding of low accuracy  Underwater hazard with depth of 20 meters or less  Underwater hazard with depth greater than 20 meters  Isolated danger of depth less than the safety contour  Point feature or area of low accuracy

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Soundings						Supplementary national symbols: a–c
Plane of Reference for Depths → H			Plane of Reference for Heights → H			
10	12      9 <sub>7</sub>	Sounding in true position (NOAA shows fathoms and feet with vertical numbers and meters with sloping numbers)	12    3 <sub>2</sub> 2 <sub>2</sub> <sup>1</sup>			9 <sub>7</sub> 30 Sounding shoaler than or equal to safety depth Sounding deeper than safety depth
11		Sounding out of position	(23)      3375			Depths are always shown in their true position in ECDIS
12		Least depth in narrow channel				
13		No bottom found at depth shown				Status of no bottom found is obtained by cursor pick
14	12      9 <sub>7</sub>	Soundings which are unreliable or taken from a smaller scale source (NOAA shows unreliable soundings in fathoms and feet with sloping numbers and in meters with vertical numbers)				Sounding of low accuracy
15		Drying heights and contours above chart datum				<u>4</u> Drying height, less than or equal to safety depth
16		Natural watercourse (in intertidal area)				Tideway

# I Depths

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Depths in Fairways and Areas						Supplementary national symbols: a, b
Plane of Reference for Depths → H						
20		Limit of dredged area				 <div>Dredged area</div> <div>Depth, date of latest survey and other information is obtained by cursor pick</div>
21		Dredged channel or area with minimum depth regularly maintained				
22		Dredged channel or area with depth and year of the latest control survey				
24		Area swept by wire drag. The depth is shown at chart datum. (The latest date of sweeping is shown in parentheses.)				 <div>Swept area</div>
25	<div></div>	Unsurveyed or inadequately surveyed area; area with inadequate depth information			<div></div>	<div><div>Incompletely surveyed area</div><div>Unsurveyed area</div></div>

ECDIS depth related symbols closely resemble their paper chart counterparts; however, ECDIS provides valuable additional information to mariners that paper charts cannot.

## Soundings

ECDIS enables mariners to set their own-ship “safety depth.” If no depth is set, ECDIS sets the value to 30m. Soundings equal to or shoaler than the safety depth are shown in black; deeper soundings are displayed in a less conspicuous gray. Fractional values are shown with subscript numbers of the same size.

## Depth Contours & Depth Areas

Depth contours in ECDIS are portrayed with a thin gray line. Each pair of adjacent depth contours is used to create depth area features. These are used by ECDIS to tint different depth levels and to initiate alarms when a ship is headed into unsafe water.

## Depth Contour Labels



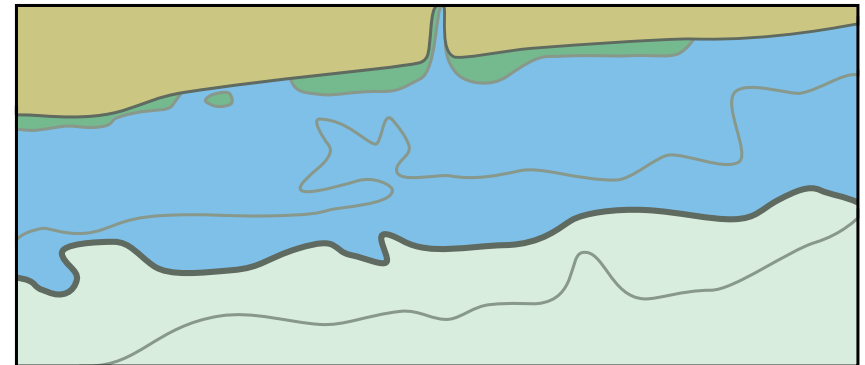
ECDIS depth contour labels are not centered and oriented along isolines as they appear on paper charts. They are displayed upright and may appear either on or next to the contour lines that they describe. The labels are black and the same size as soundings, but the labels have a light “halo” to set them apart. The graphic to the left shows depth labels and soundings both deeper and shoaler than the safety depth. Note that depths on NOAA paper charts and ENCs are usually compiled in fathoms and feet. Because ECDIS displays depths in meters, soundings and contour lines often show fractional meter values. The “own-ship safety contour” (described below) is always displayed, but mariners may choose to have all other depth contours turned off.

## Safety Contour

ECDIS uses a “safety contour” value to show an extra thick line for the depth contour that separates “safe water” from shoaler areas. If the mariner does not set an own-ship safety contour value, ECDIS sets the value to 30m. If the ENC being displayed does not have a contour line equal to the safety contour depth value set by the mariner, then ECDIS sets the next deeper contour as the safety contour. Depending on the contour intervals used on individual ENCs, ECDIS may set different safety contours as a ship transits from one ENC to another. ECDIS will initiate an alarm if the ship’s future track will cross the safety contour within a specified time set by the mariner.

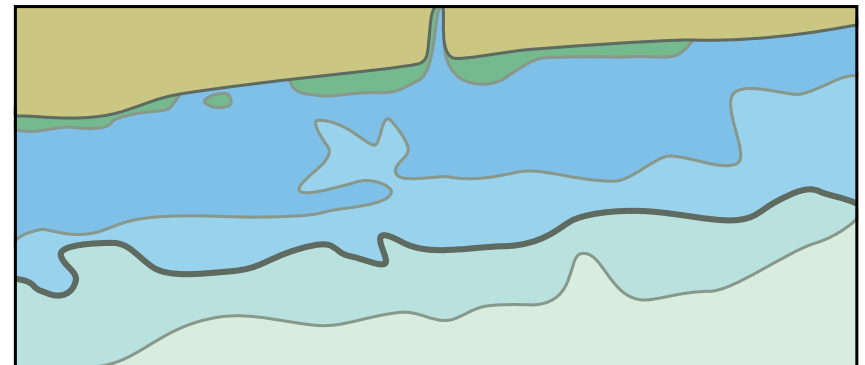
## Two or Four Tints for Shading Depth Areas

ECDIS tints all depth areas beyond the (green tinted) foreshore in either one of two or one of four shades of blue. This is similar to the convention used for paper charts, but the depths used to change from one tint to another are based on the safety contour and thus “customized” for each ship. If the mariner chooses two shades to be displayed, water deeper than the safety contour is shown in an off-white color, water shoaler than the safety contour is tinted blue.

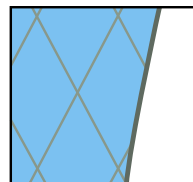


Portrayal of Depth Areas with 2 Color Settings

Some ECDIS enable mariners to define two additional depth areas for medium-deep water and medium-shallow water by setting a “deep contour” value and a “shallow contour” value. If this option is used, the safety contour is displayed between the medium deep and medium shallow contours.



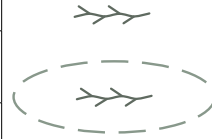

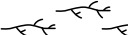
Portrayal of Depth Areas with 4 Color Setting











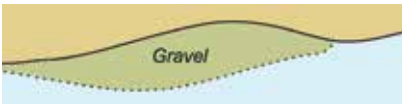
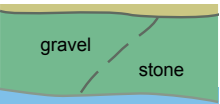



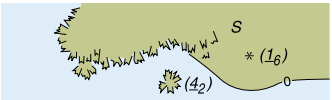
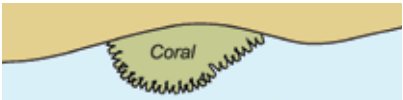

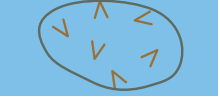
Some ECDIS also provide the mariner with the option of displaying a cross-hatch “shallow water” pattern over all depth areas shoaler than the safety contour.

# I Depths

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Depth Contours						
30		<p>Drying contour Low water line</p> <p>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 the nature of the bathymetry.</p> <p>On some charts, contours and values are printed in blue.</p>				
31		Approximate depth contours				
Supplementary National Symbols						
a		Swept channel				
b		Swept area, not adequately sounded (shown by purple or green tint)				
c		Stream				

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
Types of Seabed						Supplementary national abbreviations: a–ag	
Rocks → K							
1	S	Sand				S	Sand
2	M	Mud				M	Mud
3	Cy	Clay				Cy	Clay
4	Si	Silt				Si	Silt
5	St	Stones				St	Stones
6	G	Gravel				G	Gravel
7	P	Pebbles				P	Pebbles
8	Cb	Cobbles				Cb	Cobbles
9.1	R	Rock; Rocky	Rk; rky			R	Rock
9.2	Bo	Boulder(s)	Blds			R	Boulder
						R	Lava
10	Co	Coral, Coralline algae				Co	Coral
11	Sh	Shells (skeletal remains)				Sh	Shells
12.1	S/M	Two layers, e.g. sand over mud					
12.2	fS M Sh 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)					Weed, kelp
13.2		Kelp, Weed	 Kelp				Weed, kelp as an area
13.3	Sg	Seagrass					

# J Nature of the Seabed

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
14		Sandwaves	 Sandwaves			Sand waves as a point	Sand waves as a line
15		Spring in seabed	 Spring			Spring	
Types of Seabed, Intertidal Areas							
20		Area with stones and gravel				Areas of gravel and stone	
21		Rocky area, which covers and uncovers				Rocky ledges or coral reef	
22		Coral reef, which covers and uncovers					
Qualifying Terms						Supplementary national symbols: ah–bf	
30	<i>f</i>	Fine	} only used in relation to sand				
31	<i>m</i>	Medium					
32	<i>c</i>	Coarse					
33	<i>bk</i>	Broken					
34	<i>sy</i>	Sticky					
35	<i>so</i>	Soft					
36	<i>sf</i>	Stiff					
37	<i>v</i>	Volcanic		<i>vol</i>			
38	<i>ca</i>	Calcareous		<i>Ca</i>			Rocky ledges or coral reef
39	<i>h</i>	Hard					

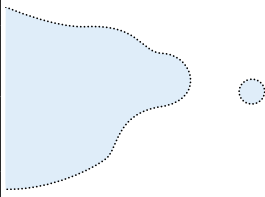


















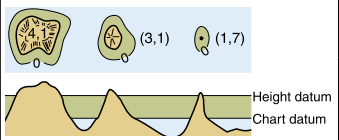





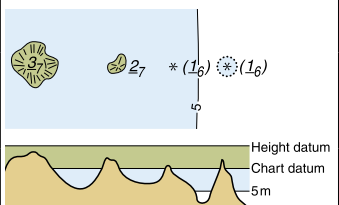










No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Supplementary National Abbreviations						
a		Ground		<i>Grd</i>		
b		Ooze		<i>Oz</i>		
c		Marl		<i>Ml</i>		
d		Shingle		<i>Sn</i>		
f		Chalk		<i>Ck</i>		
g		Quartz		<i>Qz</i>		
h		Schist		<i>Sch</i>		
i		Coral head		<i>Co Hd</i>		
j		Madrepores		<i>Mds</i>		
k		Volcanic ash		<i>Vol Ash</i>		
l		Lava		<i>La</i>		
m		Pumice		<i>Pm</i>		
n		Tufa		<i>T</i>		
o		Scoriae		<i>Sc</i>		
p		Cinders		<i>Cn</i>		
q		Manganese		<i>Mn</i>		
r		Oysters		<i>Oys</i>		
s		Mussels		<i>Ms</i>		
t		Sponge		<i>Spg</i>		
u		Kelp		<i>K</i>		
v		Grass		<i>Grs</i>		
w		Sea-tangle		<i>Stg</i>		
x		Spicules		<i>Spi</i>		
y		Foraminifera		<i>Fr</i>		
z		Globigerina		<i>Gl</i>		
aa		Diatoms		<i>Di</i>		
ab		Radiolaria		<i>Rd</i>		
ac		Pteropods		<i>Pt</i>		
ad		Polyzoa		<i>Po</i>		
ae		Cirripedia		<i>Cir</i>		
af		Fucus		<i>Fu</i>		

# J Nature of the Seabed

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
ag		Mattes		<i>Ma</i>		
ah		Small		<i>sml</i>		
ai		Large		<i>lrg</i>		
aj		Rotten		<i>rt</i>		
ak		Streaky		<i>str</i>		
al		Speckled		<i>spk</i>		
am		Gritty		<i>gty</i>		
an		Decayed		<i>dec</i>		
ao		Flinty		<i>fly</i>		
ap		Glacial		<i>glac</i>		
aq		Tenacious		<i>ten</i>		
ar		White		<i>wh</i>		
as		Black		<i>bl; bk</i>		
at		Violet		<i>vi</i>		
au		Blue		<i>bu</i>		
av		Green		<i>gn</i>		
aw		Yellow		<i>yl</i>		
ax		Orange		<i>or</i>		
ay		Red		<i>rd</i>		
az		Brown		<i>br</i>		
ba		Chocolate		<i>ch</i>		
bb		Gray		<i>gy</i>		
bc		Light		<i>lt</i>		
bd		Dark		<i>dk</i>		
be		Varied		<i>vard</i>		
bf		Uneven		<i>unev</i>		

# Rocks, Wrecks, Obstructions and Aquaculture K

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
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		Depth swept by wire drag or confirmed by diver (This symbol may be combined with other symbols, e.g. wrecks, obstructions, wells.)	    			 
3		Safe clearance depth. The exact depth is unknown, but is estimated to have a safe clearance at the depth shown	  			ECDIS displays safe clearance depths in the same manner as known depths.
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	  	 		  




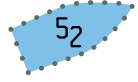



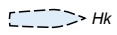


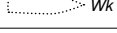






















# K Rocks, Wrecks Obstructions and Aquaculture

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
12		Rock awash at the level of chart datum					Rock which covers and uncovers or is awash at low water
13		Underwater rock of unknown depth, dangerous to surface navigation					Dangerous underwater rock of uncertain depth
14		Underwater rock of known depth					
14.1		inside the corresponding depth area	12 Rk	27 Rk 21 R			Underwater hazard with a depth of 20 meters or less
14.2		outside the corresponding depth area, dangerous to surface navigation					Underwater hazard with depth greater than 20 meters
15	35 R	Underwater rock of known depth, not dangerous to surface navigation	35Rk		35 R.    +(35)		Underwater hazard with a depth of 20 meters or less
							Underwater hazard with depth greater than 20 meters













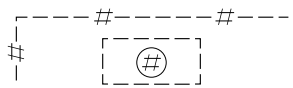







# Rocks, Wrecks, Obstructions and Aquaculture K

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
16		Coral Reef which is always covered				     	Dangerous underwater rock of uncertain depth  Obstruction, depth not stated  Isolated danger of depth less than the safety contour  Safe clearance shoaler than safety contour  Safe clearance deeper than safety contour  Safe clearance deeper than 20 meters
17	 	Breakers				  	Overfalls, tide rips; eddies; breakwaters as point, line, and area
Wrecks and Fouls							
Plane of Reference for Depths → H							
20		Wreck, hull never covers, on large scale charts, height above height datum					Wreck, always dry, with height shown
21		Wreck, covers and uncovers, on large scale charts, height above chart datum			   	 	Wreck, covers and uncovers  Distributed remains of wreck




























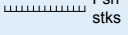

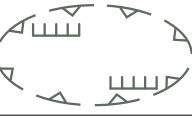


# K Rocks, Wrecks Obstructions and Aquaculture

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
22	 	Submerged wreck, depth known, on large scale charts				  	Submerged wreck with depth of 20 meters or less  Submerged wreck with depth greater than 20 meters  Distributed remains of wreck
23		Submerged wreck, depth unknown, on large scale charts			  		Submerged wreck with depth less than the safety contour or depth unknown
24		Wreck showing any portion of hull or superstructure at level of chart datum			   		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				  	Underwater hazard with depth of 20 meters or less  Underwater hazard with depth greater than 20 meters  Isolated danger of depth less than the safety contour
27	 	Wreck, depth swept by wire drag or confirmed by diver				  	Swept sounding for underwater hazard less than safety depth  Swept sounding for underwater hazard greater than or equal to safety depth  Isolated danger of depth less than the safety contour

# Rocks, Wrecks, Obstructions and Aquaculture K

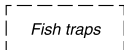
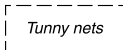

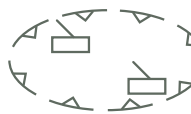
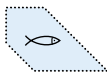

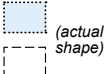



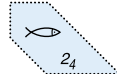
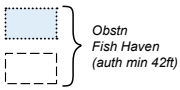





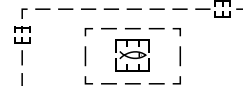
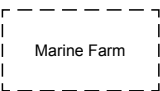
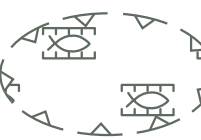

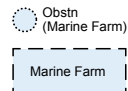
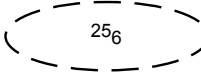

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS			
28		Dangerous wreck, depth unknown				 	Dangerous wreck, depth unknown  Isolated danger of depth less than the safety contour		
29		Sunken wreck, not dangerous to surface navigation					Non-dangerous wreck, depth unknown		
30		Wreck over which the exact depth is unknown, but which is estimated to have a safe clearance at the depth shown.				  	Underwater hazard with safe clearance of 20 meters or less  Underwater hazard with safe clearance greater than 20 meters  Isolated danger of depth less than the safety contour		
31.1		Foul ground, not dangerous to surface navigation, but to be avoided by vessels anchoring, trawling, etc. (e.g. remains of wreck, cleared platform)					Foul area of seabed safe for navigation but not for anchoring		
31.2						 	Foul ground  Distributed remains of wreck		
Obstructions and Aquaculture									
Plane of Reference for Depths → H		Kelp, Seaweed → J		Underwater Installations → L					
40	 	Obstruction, depth unknown				  	Obstruction, depth not stated  Isolated danger of depth less than the safety contour  Safe clearance shoaler than safety contour		

# K Rocks, Wrecks Obstructions and Aquaculture

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
41	 <i>Obstn</i>  <i>Obstn</i>	Obstruction, least depth known by sounding only				 5  25 	Underwater hazard with depth of 20 meters or less  Underwater hazard with depth greater than 20 meters  Isolated danger of depth less than the safety contour
42	 <i>Obstn</i>  <i>Obstn</i>	Obstruction, depth swept by wire drag or confirmed by diver				 4  21 } swept depth  Method of depth measurement is obtained by cursor pick   5  25 } known by diver or other means  	Less than or equal to safety depth  Greater than safety depth  Underwater hazard with depth of 20 meters or less  Underwater hazard with depth greater than 20 meters  Isolated danger of depth less than the safety contour
43.1	 <i>Obstn</i>	Stumps of posts or piles, wholly submerged	 <i>Subm piles</i>	 <i>Piles</i>	 <i>γ</i>	 5  	Obstruction, depth not stated  Underwater hazard with depth of 20 meters or less  Isolated danger of depth less than the safety contour
43.2	 <i>γ</i>	Submerged pile, stake, snag, or stump (with exact position)	 <i>Subm piles</i>  <i>Well</i>  <i>Stakes</i>  <i>Deadhead</i>  <i>Snags</i>  <i>Stump</i>		 <i>γ γ γ</i>		
44.1		Fishing stakes	 <i>Fsh stks</i>			 	Fish stakes as a point  Fish stakes as an area
44.2		Fish trap, Fish weir, Tunny nets	Fish trap 				



# Rocks, Wrecks, Obstructions and Aquaculture K





































No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
45	 	Fish trap area, Tunny nets area					Fish trap, fish weir, tunny net as an area
46.1		Fish haven					Isolated danger of depth less than the safety contour
							Safe clearance shoaler than safety contour
46.2		Fish haven with minimum depth					Underwater hazard with depth of 20 meters or less
							Underwater hazard with depth greater than 20 meters
47		Shellfish beds					Isolated danger of depth less than the safety contour
48.1		Marine farm (on large scale charts), area of marine farms					Safe clearance shoaler than safety contour
48.2		Marine farm (on small scale charts)					Safe clearance deeper than safety contour
Supplementary National Symbols							
a		Rock which covers and uncovers, (height unknown)					

















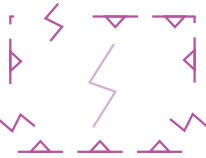



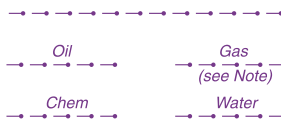
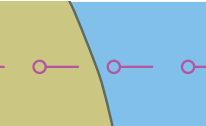
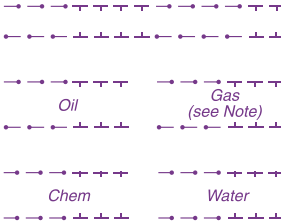

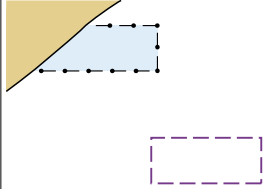

# K Rocks, Wrecks Obstructions and Aquaculture

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
b		Shoal sounding on isolated rock or rocks			 		
c		Sunken wreck covered 20 to 30 meters	++				
d		Submarine volcano		Sub vol			
e		Discolored water		Discol water			
f		Sunken danger, least depth cleared by wire drag					
g		Reef of unknown extent	Reef				
h		Coral reef, detached (uncovers at sounding datum)		 			
i		Submerged crib					
j		Crib, duck blind (above water)	■ Duck Blind   ■ Crib				
k		Submerged duck blind					
l		Submerged platform					
m		Coral reef which covers and uncovers					
n		Sinkers					
o		Foul area, foul with rocks or wreckage, dangerous to navigation	  				
p		Unexploded ordnance					
q		Float					
r		Stumps of posts or piles, which cover and uncover					

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
General							
Areas, Limits → N							
1	<i>Ekofisk Oilfield</i>	Name of oilfield or gasfield					Area to be navigated with caution, name is obtained by cursor pick
2	Z-44	Platform with designation/name		"Name"			Offshore platform, name is obtained by cursor pick
3		Limit of safety zone around offshore installation					Area where entry is prohibited or restricted or to be avoided, with other cautions
4		Limit of development area					Cautionary area, navigate with caution
5.1		Wind turbine, floating wind turbine, vertical clearance under blade					Wind motor visually conspicuous
5.2		Offshore wind farm					Wind farm (offshore)
		Offshore wind farm (floating)					
6		Wave farm, Renewable energy device					Wave farm
Platforms and Moorings							
Mooring Buoys → Q							
10		Production platform, Platform, Oil derrick					Offshore platform
11	Fla	Flare stack (at sea)					Conspicuous flare stack on offshore platform

# L Offshore Installations

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
12	 SPM	Single Point Mooring (SPM), including Single Anchor Leg Mooring (SALM), Articulated Loading Column (ALC)		 "Name"		 	Offshore platform, name and status of disused is obtained by cursor pick
14	 Ru  Z-44 (ru)	Disused platform with superstructure removed			 (disused)		
16		Single Buoy Mooring (SBM), Oil or gas installation buoy including Catenary Anchor Leg Mooring (CALM)				 	Installation buoy and mooring buoy, simplified Installation buoy, paper chart
17		Moored storage tanker, Accommodation vessel		 Tanker			Offshore platform
18		Mooring ground tackle					Ground tackle
Underwater Installations						Supplementary national symbol: a	
Plane of Reference for Depths → H		Obstructions → K					
20	 Well	Submerged production well	 Well (cov 21ft)  Well (cov 83ft) 	 Well	 15: Prod Well  Prod Well	 5  25 	Underwater hazard with depth of 20 meters or less Underwater hazard with depth greater than 20 meters Isolated danger of depth less than the safety contour
21.1	 Well	Suspended well, depth over wellhead unknown	 Pipe				Isolated danger of depth less than the safety contour
21.2	 4: Well  15: Well	Suspended well, with depth over wellhead	 Pipe (cov 24ft)  Pipe (cov 92ft)			 5  25 	Underwater hazard with depth of 20 meters or less Underwater hazard with depth greater than 20 meters Isolated danger of depth less than the safety contour



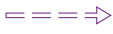










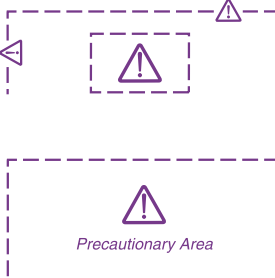

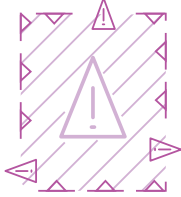
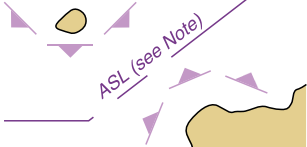
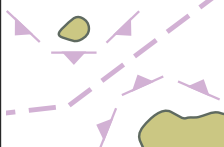




No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
22	#	Site of cleared platform				#	Foul area of seabed safe for navigation but not for anchoring
23	 Pipe  <i>Pipe (1g)</i>	Above-water wellhead (lit or unlit)	 Pipe		 <i>Pipe (2g)</i>		Obstruction in the water which is always above water level
24	 <i>Turbine</i>  <b>FI(2)</b> <i>Underwater Turbine</i>	Underwater turbine				  	Underwater turbine or subsurface ODAS
25	 ODAS	Subsurface Ocean(ographic) Data Acquisition System (ODAS)					
Submarine Cables							
30.1		Submarine cable					Submarine cable
30.2		Submarine cable area					
31.1		Submarine power cable					Submarine cable area
31.2		Submarine power cable area					
32		Disused submarine cable					Status of disused is obtained by cursor pick
Submarine Pipelines							
40.1	 <i>Oil</i> <i>Gas (see Note)</i> <i>Chem</i> <i>Water</i>	Supply pipeline: unspecified, oil, gas, chemicals, water					Oil, gas pipeline, submerged or on land
40.2	 <i>Oil</i> <i>Gas (see Note)</i> <i>Chem</i> <i>Water</i>	Supply pipeline area: unspecified, oil, gas, chemicals, water					Submarine pipeline area with potentially dangerous contents

# L Offshore Installations

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
41.1		Outfall and intake: unspecified, water, sewer, outfall, intake					Water pipeline, sewer, etc.
41.2		Outfall and intake area: unspecified, water, sewer, outfall, intake					Submarine pipeline area with generally non-dangerous contents
42.1		Buried pipeline/pipe (with nominal depth to which buried)					Nominal depth of buried pipeline is obtained by cursor pick
42.2		Pipeline tunnel					Pipeline tunnel
43		Diffuser, Crib					Underwater hazard with depth of 20 meters or less
44		Disused pipeline/pipe					Status of disused is obtained by cursor pick
Supplementary National Symbols							
a		Submerged well (buoyed)					
b		Potable water intake					

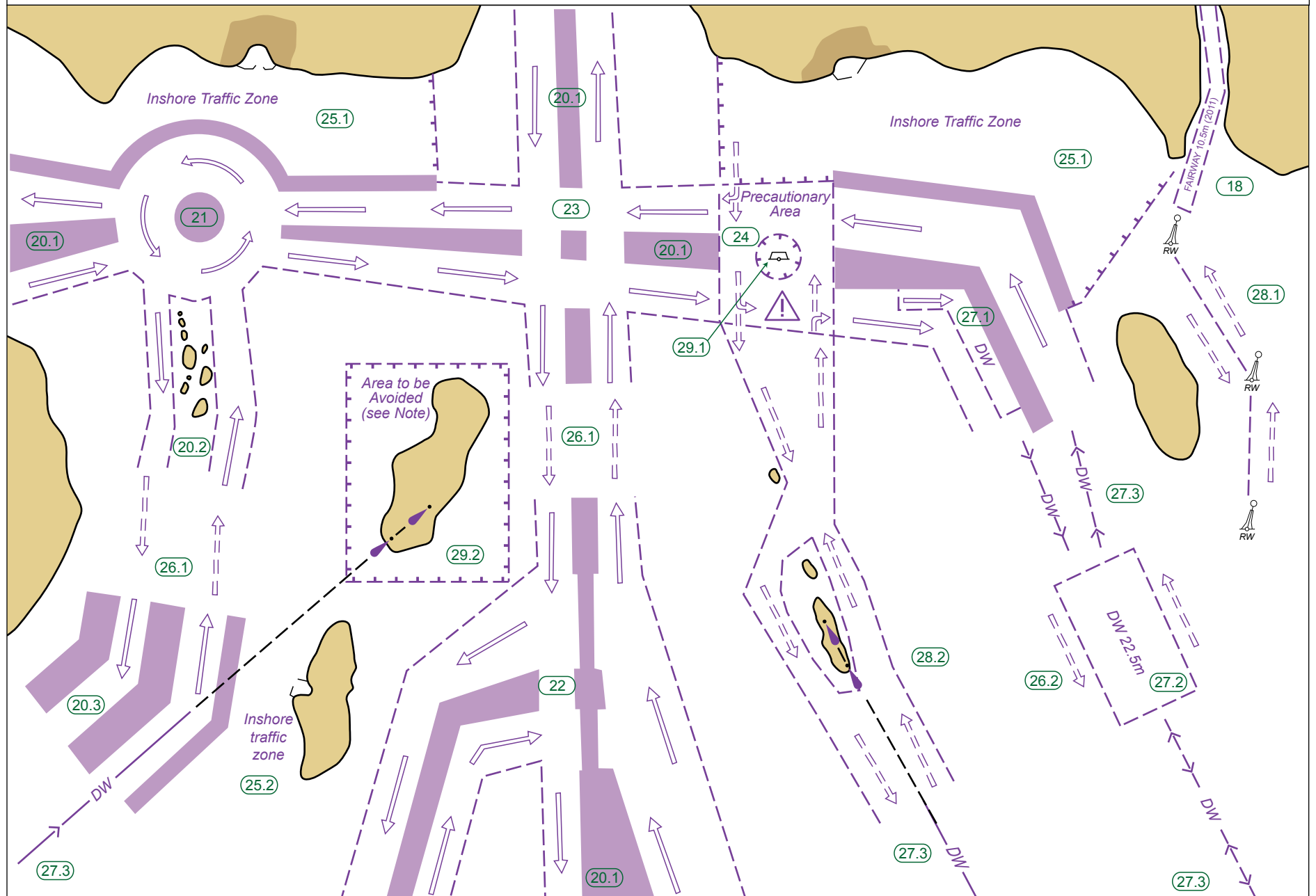
No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Tracks						Supplementary national symbols: a–c
Tracks Marked by Lights → P			Leading Beacons → Q			
1		Leading line (solid line is the track to be followed, $\nabla$ means "in line")				<p>Leading line bearing a non-regulated, recommended track</p> <p>- &lt; ? &gt; - - - - &lt; Direction not encoded</p> <p>- - - - &lt; 270 deg &lt; One-way</p> <p>- - - - &lt; 270 deg &lt; Two-way</p>
2		Transit (other than leading line), clearing line				<p>- - - - 270 deg - - - - Clearing line; transit line</p>
3		Recommended track based on a system of fixed marks				<p>Non-regulated, recommended track based on fixed marks</p> <p>- &lt; ? &gt; - - - - &lt; Direction not encoded</p> <p>- - - - 90 deg - - - - One-way</p> <p>- - - - 270 deg - - - - Two-way</p>
4		Recommended track not based on a system of fixed marks				<p>Non-regulated, recommended track not based on fixed marks</p> <p>- &lt; ? &gt; - - - - &lt; Direction not encoded</p> <p>- - - - 90 deg - - - - One-way</p> <p>- &lt; - - - - 270 deg - - - - Two-way</p>
5.1		One-way track and DW track based on a system of fixed marks				<p>Based on fixed marks, one-way</p> <p>- - - - 90 deg - - - - Non-regulated recommended track</p> <p>- - - - DW - - - - Deep water route</p>
5.2		One-way track and DW track not based on a system of fixed marks				<p>Not based on fixed marks, one-way</p> <p>- - - - 90 deg - - - - Non-regulated recommended track</p> <p>- - - - DW - - - - Deep water route centerline</p>
6		Recommended track with maximum authorized (or recommended) draft stated				<p> If encoded, the shoalest depth range value along the track is obtained by cursor pick</p>

# M Tracks, Routes

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Routing Measures						Supplementary national symbols: d–e
Basic Symbols						
10		Established (mandatory) direction of traffic flow				 Traffic direction in a one-way lane of a traffic separation scheme
11		Recommended direction of traffic flow				 Single traffic direction in a two-way route part of a traffic-separation scheme
12		Separation line (large scale, small scale)				 Traffic separation line
13		Separation zone				 Traffic separation zone
14		Limit of restricted routing measure (e.g. Inshore Traffic Zone (ITZ), Area to be Avoided (ATBA))				
15		Limit of routing measure				 Traffic separation scheme boundary
16		Precautionary area				 Traffic precautionary area as a point
						 Traffic precautionary area as an area
17		Archipelagic Sea Lane (ASL); axis line and limit beyond which vessels shall not navigate				 Axis and boundary of archipelagic sea lane
18	 	Fairway designated by regulatory authority:				 Fairway, depth is obtained by cursor pick
		with minimum depth				
		with maximum authorized draft (may be highlighted by gray tint)				

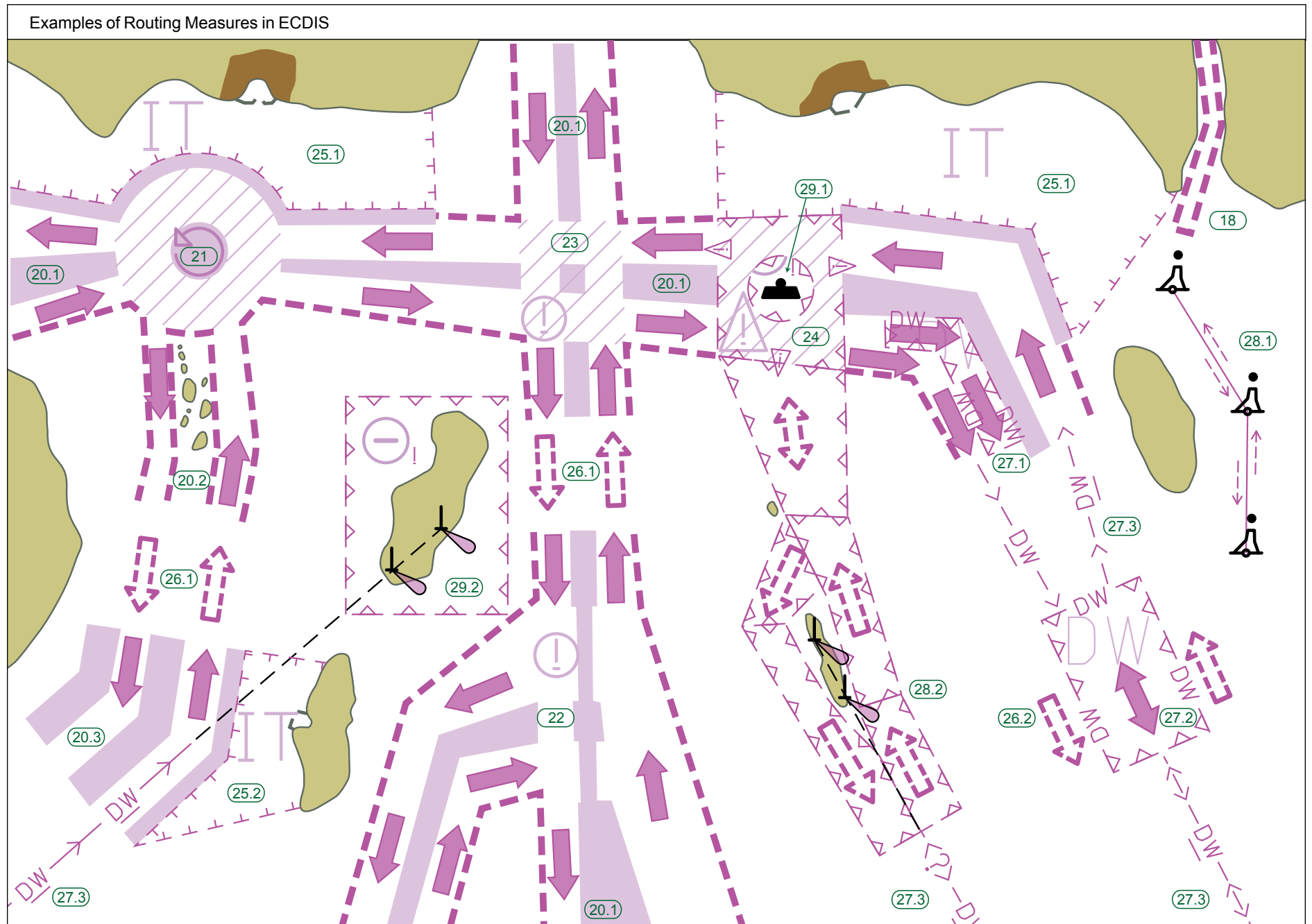


Examples of Routing Measures on Paper/Raster Charts





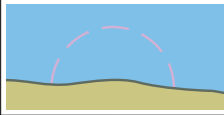


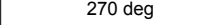

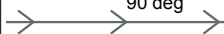
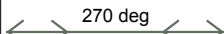











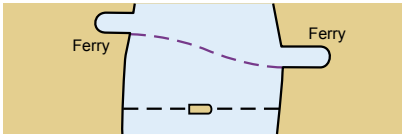

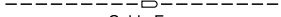





# M Tracks, Routes

No.	
Examples of Routing Measures	
18	Safety fairway
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, centerline 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



# M Tracks, Routes

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Radar Surveillance Systems						
30	 Radar Surveillance Station	Radar surveillance station	 Ra			 Radar station
31		Radar range				 Radar range
32.1	 Ra	Radar reference line			 —Ra — Ra —	 270 deg Radar line
32.2	 Ra 090°-270°	Radar reference line coinciding with a leading line				<p>Non-regulated recommended track based on fixed marks</p> <p>- &lt; ? &gt; - - - - &lt; Direction not encoded</p> <p> 90 deg One-way</p> <p> 270 deg Two-way</p>
Radio Reporting Points						
40.1		Radio reporting (calling-in or way) points showing direction(s) of vessel movement with designation (if any) and VHF-channel				<p> Nr 13 ch 74 Radio calling-in point for traffic in one direction only</p> <p> Nr 13 ch 74 Radio calling-in point for traffic in both directions</p> <p> Nr 13 ch 74 Radio calling-in point, direction not encoded</p>
40.2		Radio reporting line				<p> Nr 13 ch 74 Radio calling-in point for traffic in one direction only</p> <p> Nr 13 ch 74 Radio calling-in point for traffic in both directions</p> <p> Nr 13 ch 74 Radio calling-in point, direction not encoded</p>

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Ferries						
50		Ferry				 Ferry route
51	 Cable Ferry	Cable Ferry				 Cable ferry route
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				

# N Areas, Limits

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
General *							
Dredged and Swept Areas → I		Submarine Cables, Submarine Pipelines → L	Tracks, Routes → M				
On multi-colored charts, symbols in Section N may be in green when associated with environmental areas.							
1.1		Maritime limit in general  usually implying permanent physical obstructions (tint band for emphasis)					Caution area, a specific caution note applies
1.2		usually implying no permanent physical obstructions (tint band for emphasis)					
2.1		Limit of restricted area (tint band for emphasis)					Area where entry is prohibited or restricted or to be avoided
2.2		Limit of area into which entry is prohibited					Area where entry is prohibited or restricted or to be avoided, with other cautions
							Area where entry is prohibited or restricted or to be avoided, with other information
Anchorages, Anchorage Areas							
10		Reported anchorage (no defined limits)					Anchorage area as a point at small scale, or anchor points of mooring trot at large scale
11.1		Anchor berths					Anchor berth
11.2		Anchor berths with swinging circle					Radius of swing circle is obtained by cursor pick

\* ECDIS represents many types of area limits with just a few different symbols. Information about the type of area and its associated restrictions or prohibitions may be obtained by cursor pick.

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
12.1		Anchorage area in general					Type of anchorage area is obtained by cursor pick
12.2		Numbered anchorage area					
12.3		Named anchorage area					
12.4		Deep water anchorage area, Anchorage area for deep draft vessels					
12.5		Tanker anchorage area					
12.6		Anchorage area for periods up to 24 hours					
12.7		Dangerous cargo anchorage area					
12.8		Quarantine anchorage area					
12.9		Reserved anchorage area					
Note: Anchors as part of the limit symbol are not shown for small areas. Other types of anchorage areas may be shown.							
13		Seaplane operating area					Seaplane landing area
14		Anchorage for seaplanes					Type of anchorage area is obtained by cursor pick








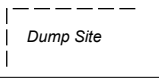








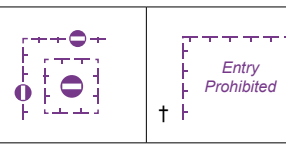












# N Areas, Limits

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Restricted Areas						Supplementary national symbols: d, e, g
On multi-colored charts, the magenta symbols may be in green when associated with environmental areas.						
20		Anchoring prohibited				 Area where anchoring is prohibited or restricted   Area where anchoring is prohibited or restricted, with other cautions   Area where anchoring is prohibited or restricted, with other information
21.1		Fishing prohibited				 Area where fishing or trawling is prohibited or restricted   Area where fishing or trawling is prohibited or restricted, with other cautions   Area where fishing or trawling is prohibited or restricted, with other information





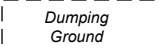
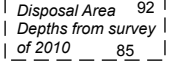

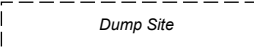


No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
21.2		Diving prohibited					Area where diving is prohibited
22		Environmentally Sensitive Sea Areas					Environmentally Sensitive Sea Area (ESSA)
		Bird sanctuary					
		Seal sanctuary					Area with minor restrictions or information notices
		Non-specific nature reserve, National parks, Marine Reserves (MR)					
		Particularly Sensitive Sea Area (PSSA)					PSSA
	Note: Other animal silhouettes (e.g. seahorses, penguin, petrel) may be used, as appropriate.						
	Tint band may vary in width between 1–5 mm						


























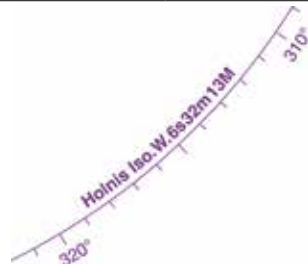
# N Areas, Limits

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
23.1		Explosives dumping ground, individual mine or explosive					Explosives or chemical dumping ground as a point
23.2		Explosives dumping ground (disused), Foul (explosives)					
24		Dumping ground for chemical waste					
25		Degaussing range (DG range)					Degaussing area
27	5kn	Maximum speed					If a speed restriction exists, the speed limit is obtained by cursor pick
Military Practice Areas							
30		Firing practice area					Restricted area
31		Military restricted area, entry prohibited					Area where entry is prohibited or restricted or to be avoided, with other cautions
32		Mine-laying (and counter-measures) practice area					Restricted area
33		Submarine transit lane and exercise area					
34		Minefield					Minefield
International Boundaries and National Limits						Supplementary national symbols: a, f, h	
40		International boundary on land					Jurisdiction boundary

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
41		International maritime boundary				Jurisdiction boundary
42		Straight territorial sea baseline with base point				Straight territorial sea baseline
43		Seaward limit of territorial sea			TERRITORIAL SEA	Territorial sea
44		Seaward limit of contiguous zone				Contiguous zone
45		Limits of fishery zones				Limits of fishery zone
46		Limit of continental shelf				Continental shelf area
47		Limit of Exclusive Economic Zone (EEZ)				Exclusive economic zone
48		Customs limit				Custom regulations zone
49		Harbor limit				Harbor area, symbolized
Various Limits			Supplementary national symbols: a, b			
60.1		Limit of fast ice, Ice front (with date)				Continuous pattern for an ice area (glacier, etc.)
60.2		Limit of sea ice (pack ice) seasonal (with date)				
62.1		Spoil ground				HO information note
62.2		Spoil ground (disused)				
63		Extraction (dredging) area				Dredging area
64		Cargo transshipment area				HO information note
65		Incineration area				

# N Areas, Limits

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Supplementary National Symbols						
a		COLREGS demarcation line				
b		Limit of fishing area (fish trap areas)				
c		Dumping ground				
d		Dumping area (Dump site)				
f		Reservation line (Options)				
g		Dump site				
h		Three Nautical Mile Line				
i		No Discharge Zone				










No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Light Structures and Major Floating Lights						
Minor Light Floats → Q30, 31						
1.1	☆ ☆ Lt LtHo	Position of navigation light (size and style of “star” may vary) light, lighthouse	•	☆ ✧ ● •	 	Light, lighthouse, paper chart
1.2		Light on standard charts				
1.3		Significant all-round light, generally for offshore navigation on multicolored charts				
2.1		Lighted offshore platform on standard charts	■ PLATFORM (lighted)			 Lighted offshore platform, paper chart
2.2	 	Lighted offshore platform on multicolored charts				
3	 BY  ☆ BnTr	Lighted beacon tower	○ Marker (lighted)			 Lighted beacon tower, paper chart
4	 R  BRB  ☆ Bn	Lighted beacon				 Lighted beacon, paper chart
5	 R  ☆ Bn	Articulated light, buoyant beacon, resilient beacon	 Art			
Note: Minor lights, fixed and floating, usually conform to IALA Maritime Buoyage System characteristics.						
7	  	Navigational lights on landmarks or other structures				
8		Important light off chart limits				

# P Lights






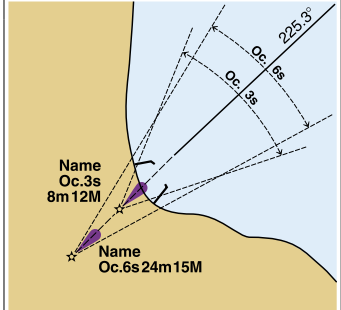
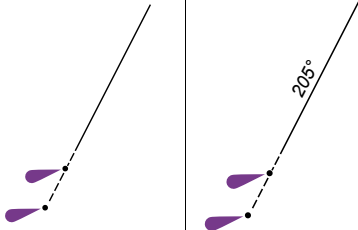
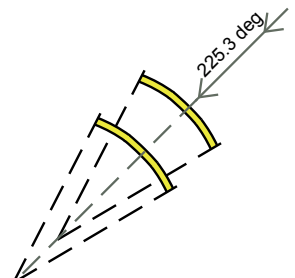
No.	Abbreviaton		Class of Light	Illustration	Period Shown		ECDIS
	INT	NOAA					
Light Characters							
Light Characters on Light Buoys → Q							
10.1	F	F	Fixed			F	When text for lights is displayed, ECDIS uses INT abbreviations.
Occulting (total duration of light longer than total duration of darkness)							
10.2	Oc	Oc	Single-occulting			Oc	
	Oc(2) Example	Oc (2)	Group-occulting			Oc (2)	
	Oc(2+3) Example	Oc (2+3)	Composite group-occulting			Oc (2+3)	
Isophase (duration of light and darkness equal)							
10.3	Iso	Iso	Isophase			Iso	
Flashing (total duration of light shorter than total duration of darkness)							
10.4	Fl	Fl	Single-flashing			Fl	
	Fl(3) Example	Fl (3)	Group-flashing			Fl (3)	
	Fl(2+1) Example	Fl (2+1)	Composite group-flashing			Fl (2+1)	
10.5	LFI	L FI	Long-flashing (flash 2s or longer)			L FL	
Quick (repetition rate of 50 to 79 - usually either 50 or 60 - flashes per minute)							
10.6	Q	Q	Continuous quick			Q	
	Q(3) Example	Q (3)	Group quick			Q(3)	
	IQ	IQ	Interrupted quick			IQ	

No.	Abbreviaton		Class of Light	Illustration	Period Shown		ECDIS
	INT	NOAA					
Very quick (repetition rate of 80 to 159 - usually either 100 or 120 - flashes per minute)							When text for lights is displayed, ECDIS uses INT abbreviations.
10.7	VQ	VQ	Continuous very quick			VQ	
	VQ(3) Example	VQ (3)	Group very quick			VQ(3)	
	IVQ	IVQ	Interrupted very quick				
Ultra quick (repetition rate of 160 or more - usually 240 to 300 - flashes per minute)							
10.8	UQ	UQ	Continuous ultra quick				
	IUQ	IUQ	Interrupted ultra quick				
10.9	Mo(K) Example	Mo (K)	Morse code			Mo (K)	
10.10	FFI	F FI	Fixed and flashing			F FI	
10.11	Al.WR	AIWR	Alternating			AI WR	

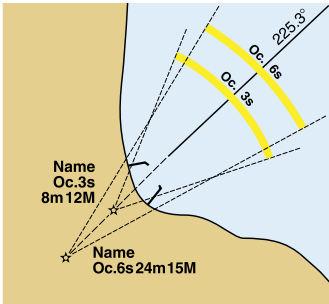
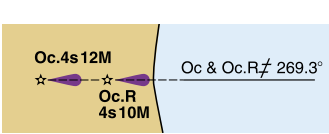
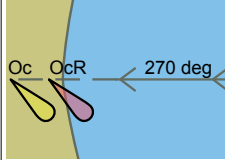

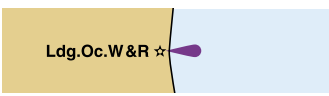

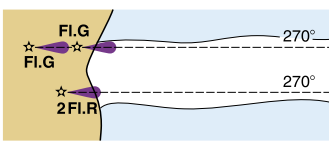
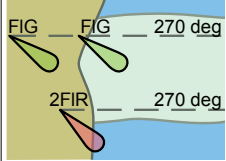
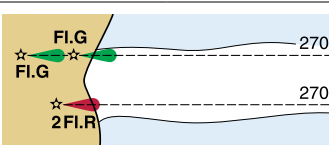
# P Lights

No.	INT		Description	NOAA	NGA	Other NGA	ECDIS	
Colors of Lights								
11.1	W		White (for lights, only on sector and alternating lights)	<div>Colors of lights shown</div> <div>on standard charts</div> <div></div> <div>on multicolored charts</div> <div></div> <div>on multicolored charts at sector lights</div> <div></div>	<div>Default light symbol if no color is encoded or color is other than red, green, white, yellow, amber, or orange</div> <div>Red</div> <div>Green</div> <div>White, yellow, amber or orange</div> <div>Sector lights</div>			
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							<div>When text for lights is displayed, ECDIS uses INT abbreviations.</div>	
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 <i>only lesser of two ranges is charted</i>		15/10M		
	15-7M		Light with three or more ranges	7M <i>only least of three ranges is charted</i>				
Note: Charted ranges are nominal ranges given in Nautical Miles.								
Disposition								
15	(hor)		Horizontally disposed					Disposition of light is obtained by cursor pick
	(vert)		Vertically disposed					
	(Δ)	(∇)	3 lights disposed in the shape of a triangle					



No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Example of a Full Light Description						
16	INT Example  Name ☆ FI(3)WRG.15s 21m 15-11M		NOAA Example  Name • FI (3) WRG 15s 21ft 11M		NGA Example  Name • FI (3) WRG 15s 21m 15-11M	 FIR15s21m11M
	FI(3)	Class of light: group flashing repeating a group of three flashes	FI(3)	Class of light: group flashing repeating a group of three flashes		<p>The descriptions of non-sector lights are shown in ECDIS when the display of text is turned on, as shown above. (The aid to navigation or other structure that is always shown attached to a light flare in ECDIS is not depicted here.)</p> <p>Sector lights (as described in the INT, NOAA and NGA examples at left) are depicted graphically in ECDIS, as shown below and in P40.</p>  The description of a sector light or any other type of light may always be obtained by cursor pick.
	WRG	Colors: white, red, green, exhibiting the different colors in defined sections	WRG	Colors: white, red, green, exhibiting the different colors in defined sections		
	15s	Period: the time taken to exhibit one full sequence of three flashes and eclipses: 15 seconds	15s	Period: the time taken to exhibit one full sequence of three flashes and eclipses: 15 seconds		
	21m	Elevation of focal plane above datum: 21 meters	21ft 21m	Elevation of light: 21 feet 21 meters		
	15-11M	Nominal range: white 15M, green 11M, red between 15 and 11M	11M 15-11M	Nominal range: shortest range of all the lights is 11M white 15M, green 11M, red between 15 and 11M		
Lights 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 on standard charts  Bearing given in degrees and tenths of a degree				Leading lights with sectors	

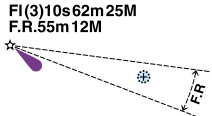

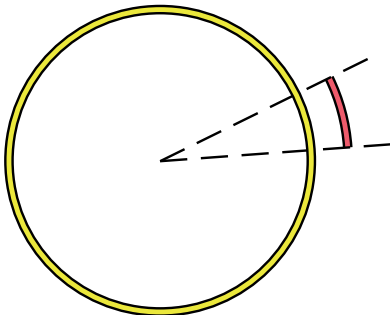
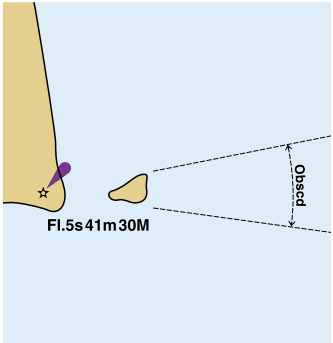

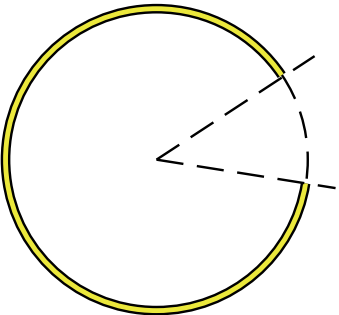
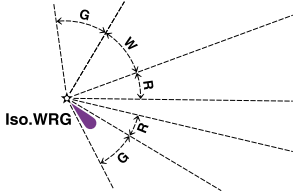
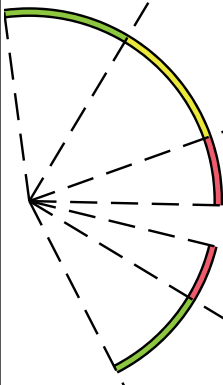
# P Lights

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
20.2		Leading lights with leading line (solid line is the track to be followed) and arcs of visibility on multi-colored charts  Bearing given in degrees and tenths of a degree				
20.3		Leading lights (≠ means lights in line) on standard charts  Bearing given in degrees and tenths of a degree				 Leading lights
20.4		Leading lights (≠ means lights in line) on multi-colored charts  Bearing given in degrees and tenths of a degree				
20.5		Leading lights on small scale standard charts				
20.6		Leading lights on small scale multi-colored charts				
21.1		Lights in line, marking the sides of a channel on standard charts				 Lights in line, marking the sides of a channel
21.2		Lights in line, marking the sides of a channel on multi-colored charts				
22	Rear Lt or Upper Lt	Rear or upper light				
23	Front Lt or Lower Lt	Front or lower light				

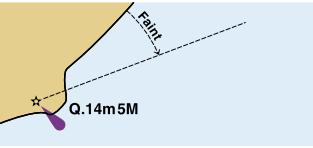
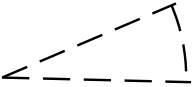
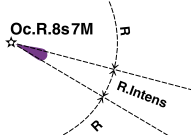
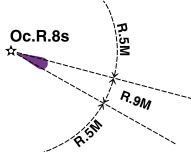

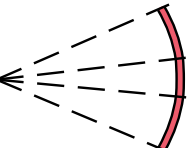












No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Direction Lights						
30.1		Direction light with narrow sector and course to be followed, flanked by darkness or unintensified light				Directional light with sector 
30.2		Direction light on standard charts with course to be followed, sector(s) uncharted				Directional light without sector 
30.3		Direction light with narrow fairway sector flanked by light sectors of different character on standard charts				Light, directional
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				Category of light as moiré effect is obtained by cursor pick
Quoted bearings are always from seaward.						




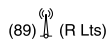
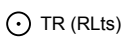



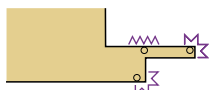


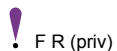




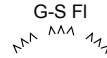


# P Lights

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
Sector Lights							
40.1		Sector light on standard charts					Light, sector
40.2		Sector light on multicolored charts					
40.3		Sector light on standard charts. Sectors not charted					
40.4		Sector lights on multicolored charts. Sectors not charted					
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					

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
42.1		Main light visible all-round with red subsidiary light seen over danger				Light, danger 
43.1		All-round light with obscured sector				Light, obscured 
44.1		Light with arc of visibility deliberately restricted				 Light, restricted

# P Lights



No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
45.1		Light with faint sector				 Light, faint
46.1	 	Light with intensified sector				 Intensified light visibility is obtained by cursor pick  Light, intensified
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)		 Status and condition of light is obtained by cursor pick
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.5m 10-3M (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				
56	(man)	Manually activated				
Special Lights						
Flare Stack (as 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	 AeroAIFIWG7.5s11M Light

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
61.1		Air obstruction light of high intensity (e.g. on radio mast)					Conspicuous mast with light
61.2		Air obstruction light of low intensity (e.g. on radio mast)					
62	Fog Det Lt	Fog detector light					Category of light is obtained by cursor pick
63	 (Illuminated)	Floodlit, floodlighting of a structure					Floodlight
64		Strip light					Strip light
On multicolored charts, P63 and P64 may be any appropriate color.							
65	(priv)	Private light other than one exhibited occasionally					Status of private is obtained by cursor pick
66	(sync)	Synchronized light					
Supplementary National Symbols							
a		Riprap surrounding light					
b		Short-Long Flashing					
c		Group-Short Flashing					
d		Fixed and Group Flashing					
e		Unmanned light-vessel; light float					
f		LANBY, superbuoy as navigational aid					














# Simplified and Traditional Paper Chart Symbols

ECDIS can be set to display aids to navigation with either traditional paper chart or simplified symbols. The two symbol sets are shown below. Some ECDIS color fill the paper chart buoy shapes, but this is not required by IHO ECDIS portrayal specifications.

## Floating Marks

Paper Chart	Simplified	Simplified Symbol Name
* ▲		Cardinal buoy, north
* ◆		Cardinal buoy, east
* ▼		Cardinal buoy, south
* ⬆		Cardinal buoy, west
⊙?		Default symbol for buoy (used when no defining attributes have been encoded in the ENC)
* ●		Isolated danger buoy
		Conical lateral buoy, green
		Conical lateral buoy, red
		Can shape lateral buoy, green
		Can shape lateral buoy, red
		Installation buoy and mooring buoy
		
		
**		Safe water buoy
		Special purpose buoy, spherical or barrel shaped, or default symbol for special purpose buoy
		Special purpose TSS buoy marking the starboard side of the traffic lane
		Special purpose TSS buoy marking the port side of the traffic lane
		Special purpose ice buoy or spar or pillar shaped buoy
		Super-buoy ODAS & LANBY
		Light float
		Light vessel









## Fixed Marks

Paper Chart	Simplified	Simplified Symbol Name
* ▲		Cardinal beacon, north
* ◆		Cardinal beacon, east
* ▼		Cardinal beacon, south
* ⬆		Cardinal beacon, west
⬇?		Default symbol for a beacon (used when no defining attributes have been encoded in the ENC)
⬇		Isolated danger beacon
⬇		Major lateral beacon, red
⬇		Major lateral beacon, green
⬇		Minor lateral beacon, green
⬇		Major safe water beacon
⬇		Minor safe water beacon
⬇		Major special purpose beacon
⬇		Minor special purpose beacon











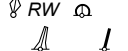



\* Paper chart symbols display various buoy or beacon shape symbols in conjunction with the topmark. Simplified portrayal only displays the topmark.

\*\* Several different paper chart symbols correspond to this simplified symbol.

## Day Marks





























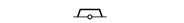














Paper Chart	Simplified	Simplified Symbol Name
		Square or rectangular daymark
		Triangular daymark, point up
		Triangular daymark, point down
		Retro reflector













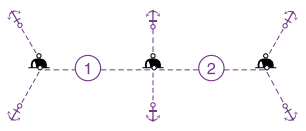
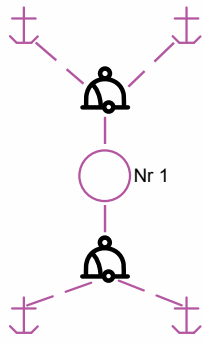











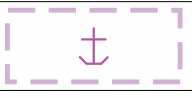


No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Buoys and Beacons						
IALA Maritime Buoyage System, which includes Beacons → Q 130						
		Default buoy symbol if no other defining attribution is provided				 Default symbol for buoy, paper chart
						 Default symbol for buoy, simplified
		Default beacon symbol if no other defining attribution is provided				 Default symbol for a beacon, paper chart
						 Default symbol for a beacon, simplified
1		Position of buoy or beacon				ECDIS shows the position of buoys and beacons with a circle at the bottom of paper chart symbols. For simplified symbols, the position of the aid corresponds with the center of the symbol.
Colors of Buoys and Beacon Topmarks						Supplementary national symbols: p
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 stripes, the darker color is given first				
6		Retroreflecting material				
Lighted Marks						Supplementary national symbols: p
Marks with Fog Signals → R						
7		Lighted marks on standard charts				
8		Lighted marks on multicolored charts				
Note: On standard charts, the light flares of buoys and beacons are shown in magenta. On multicolored charts, the light flares are shown in the colors of the appropriate light						














# Q Buoys, Beacons

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS		
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)				<p>Paper chart symbols for topmarks (on the left, below) are always displayed above a buoy or beacon shape symbol, as in Q 10 and Q 11.</p> <p>Simplified symbols (on the right, below) for cardinal marks, isolated dangers and safe water consist of only the topmark without the buoy shape symbol.</p> <p>Simplified symbology for marks with any other type of topmark will display only the simplified buoy or beacon shape symbol without a topmark.</p>		
								2 cones point upward
								2 cones point downward
								2 cones base to base
								2 cones point to point
								2 spheres
								Sphere
								Cone point up
								Cone point down
								Cylinder, square, vertical rectangle
								X-shape
								Flag or other shape
								Board, horizontal rectangle
								Cube point up
								Upright cross over a circle
		T-shape						
10		Beacon with topmark, color, radar reflector and designation				<p>bn No 2</p>		
































No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
11	 No 3	Buoy with topmark, color, radar reflector and designation	 G N "3"	 No 3		by No 3 	Conical buoy with topmark, paper chart
Note: Radar reflectors on floating marks usually are not charted. ECDIS does not display radar reflectors on fixed or floating aids; this information is obtained by cursor pick.							
Buoys							
Shapes of Buoys							
Features Common to Buoys and Beacons → Q 1–11							
						Paper Chart	Simplified
20		Conical buoy, nun buoy, ogival buoy					 Conical buoy
21		Can buoy or cylindrical buoy					 Can buoy
22		Spherical buoy					 Spherical buoy
23		Pillar buoy; Buoy with no distinctive shape					 Pillar buoy
24		Spar buoy, spindle buoy					 Spar buoy
25		Barrel buoy, tun buoy					 Barrel buoy
26		Superbuoy					 Super-buoy Lanby, super-buoy Super-buoy odas & lanby
Light Vessels and Minor Light Floats							
30.1	 Fl.G.3s Name	Light float on standard charts					 Light float
30.2	 Fl.G.3s Name	Light float on multi-colored charts					
31	 Fl.10s †	Light float not part of IALA System					Light float
32		Light vessel					Light vessel, paper chart



























# Q Buoys, Beacons

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Mooring Buoys						
Oil or Gas Installation Buoy → L						
40		Mooring buoys				 Mooring buoy, can shape, paper chart  Mooring buoy, barrel shape, paper chart  Installation buoy and mooring buoy, simplified
41.1	 <i>Fl. Y. 2.5s</i>	Lighted mooring buoy (example) on standard charts		 <i>Fl Y 2s</i>		 Mooring buoy with light flare, barrel shape, paper chart
41.2	 <i>Fl. Y. 2.5s</i>	Lighted mooring buoy (example) on multi-colored charts				
42		Trot, mooring buoys with ground tackle and berth numbers				 Trot, mooring buoys with ground tackle and berth numbers
43		Mooring buoy with telephonic communication		 <i>Tel</i>  <i>Tel</i> <i>Tel = telegraphic</i>  <i>T</i>  <i>T</i> <i>T = telephonic</i>		 ~ ~ ~ ~ Mooring buoy, can shape, paper chart  ~ ~ ~ ~ Mooring buoy, barrel shape, paper chart  ~ ~ ~ ~ Installation buoy and mooring buoy, simplified
44		Numerous moorings (example)	 <i>Numerous mooring buoys</i>	 <i>(5 buoys) Moorings</i>		 Small-craft mooring area
45		Visitors' mooring				 Availability of visitor mooring at marina is obtained by cursor pick


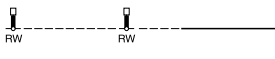
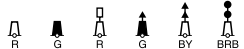


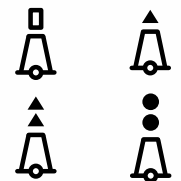





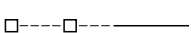


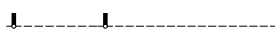


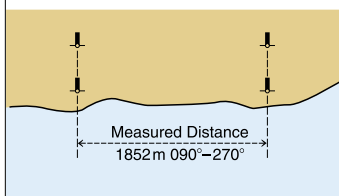
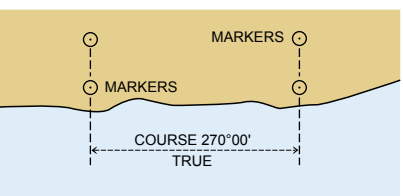
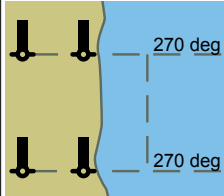



No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Special Purpose Buoys						
Note: Shapes of buoys are variable. Lateral or Cardinal buoys may be used in some situations.						
						 Purpose of buoy and other information is obtained by cursor pick
Purpose of buoy may be shown by label.						
50	 DZ	Firing danger area (Danger Zone) buoy				 Conical buoy with topmark, paper chart
54	 DG	Degaussing Range buoy				 Special purpose buoy, spherical or barrel shaped, or default symbol for special purpose buoy, simplified
58	 ODAS  ODAS	ODAS buoy (Ocean Data Acquisition System), data collecting buoy	 ODAS  ODAS			    Super-buoy, paper chart Super-buoy odas & lanby, simplified Spherical buoy, paper chart Spherical buoy, simplified

# Q Buoy, Beacons

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
70		Buoy privately maintained (example)			 ( <i>occas</i> )  ( <i>01.04.–31.10.</i> )		Status as private is obtained by cursor pick
71		Seasonal buoy (example)					Status as periodic and period start and stop dates are obtained by cursor pick
Beacons							
Lighted Beacons → P		Features Common to Beacons and Buoys → Q1–11					
80	 	Beacon in general, characteristics unknown or chart scale too small to show		 		 ?  ? 	Default symbol for a beacon, paper chart  Default symbol for a beacon, simplified  Beacon in general, paper chart
81		Beacon with color, no distinctive topmark	   				Beacon color is obtained by cursor pick
82	  	Beacons with colors and topmarks (examples)				  See note at Q 9 for information about topmarks and ECDIS simplified symbology            	Beacon in general with topmark, paper chart  Major red lateral beacon, simplified  Beacon in general with topmark, paper chart  Cardinal beacon, north, simplified  Beacon in general with topmark, paper chart  Isolated danger beacon, simplified

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS		
83		Beacon on submerged rock with colors (topmark as appropriate)				 	Beacon in general with topmark, paper chart  Isolated danger beacon, simplified	
Minor Impermanent Marks Usually in Drying Areas (Lateral Marks of Minor Channels)								
Minor Pile → F								
90		Stake, pole	† ○ Stake † ○ Pole	● Stake ● Pole	 R			Minor, stake or pole beacon, paper chart
91	Port Hand 	Starboard Hand 	Perch, withy		 R			Minor, stake or pole beacon, paper chart
								Minor red lateral beacon, simplified
92			Withy					Minor green lateral beacon, simplified
Minor Marks, Usually on Land								
Landmarks → E								
100		Cairn	○ Cairn	⊙ CAIRN			Conspicuous cairn	
101		Colored or white mark					Square or rectangular day mark, paper chart	
							Square or rectangular day mark, simplified	
							Triangular day mark, point up, paper chart	
							Triangular day mark, point up, simplified	
							Triangular day mark, point down, paper chart	
							Triangular day mark, point down, simplified	

# Q Buoys, Beacons







No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
102.1		Colored topmark (color known or unknown) with function of a beacon				
102.2		Painted boards with function of leading beacons				
Beacon Towers						
110		Beacon towers without and with topmarks and colors (examples)				   
111		Lattice beacon				
Special Purpose Beacons						
Leading Lines, Clearing Lines → M						
Note: Topmarks and colors shown where scale permits.						
120		Leading beacons				
121		Beacons marking a clearing line				
122		Beacons marking measured distance with quoted bearings				
123		Cable landing beacon (example)				



## IALA Maritime Buoyage System

### IALA International Association of Marine Aids to Navigation and Lighthouse Authorities

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 .

There are two international buoyage regions where lateral marks differ. Each region is primarily comprised of the waters surrounding the areas shown below.

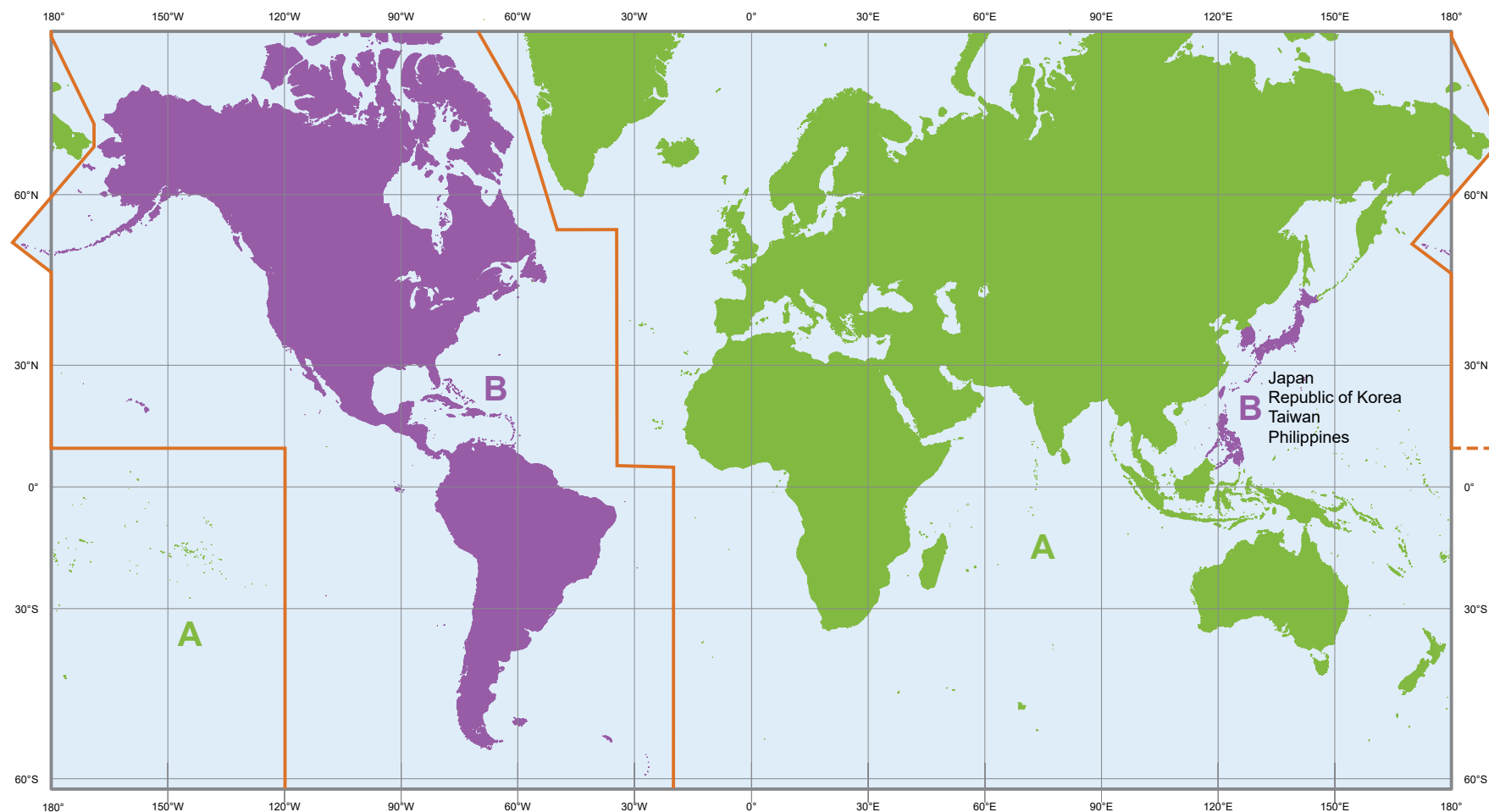
**Region A:** Greenland, Africa, Europe, Australia and Asia (except for Japan, the Republic of Korea, Taiwan and the Philippines).

**Region B:** North and South America, Japan, the Republic of Korea, Taiwan and the Philippines.

ECDIS marks the boundary between IALA regions A and B with this symbol:

— A — — B — — A — — B — — A — — B — — A — — B — — A — — B —

130.1



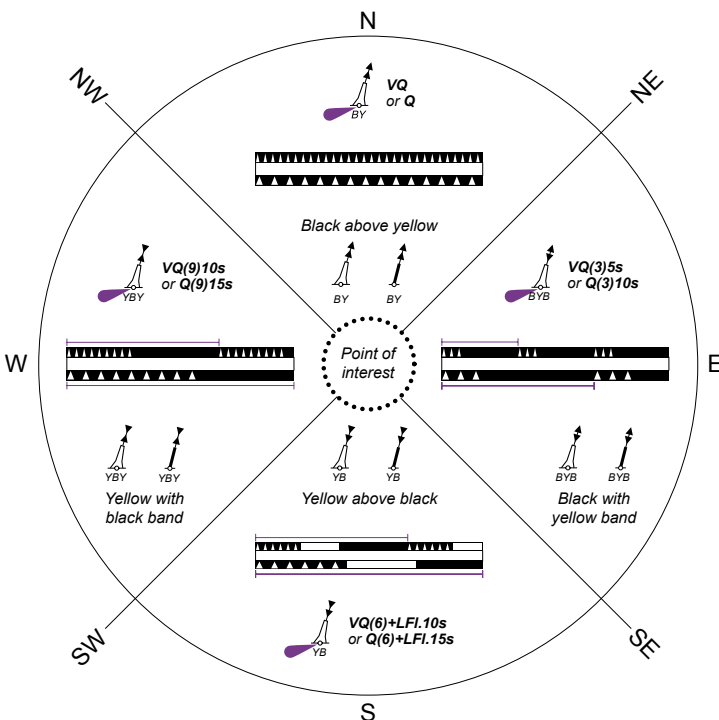
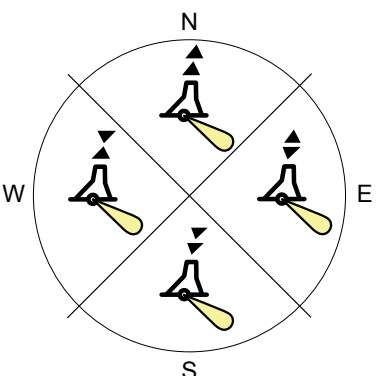
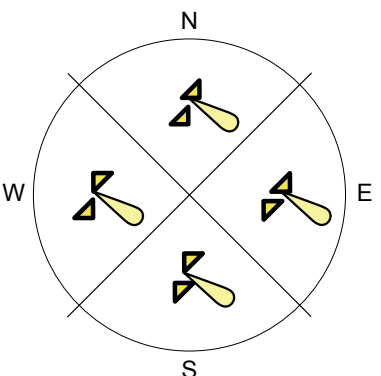
# Q Buoys, Beacons

**Lateral Marks** are generally for well-defined channels. There are two international buoyage regions—A and B—where lateral marks differ by color, but not by shape or topmark.













































130.1	INT	<p>Port-hand marks are red with cylindrical topmarks (if any). If lit, light is red.</p> <p>Starboard-hand marks are green with conical topmarks (if any). If lit, light is green.</p> <p>REGION A</p>	<p>Port-hand marks are green with cylindrical topmarks (if any). If lit, light is green.</p> <p>Starboard-hand marks are red with conical topmarks (if any). If lit, light is red.</p> <p>REGION B</p>	<p>Buoy shape may be cylindrical or conical (to indicate port or starboard) but may be another shape with appropriate topmark. Marks which indicate a junction with a side channel have three horizontal color bands and, if lit, the rhythm will be FI(2+1).</p> <p>Buoys in U.S. waters generally do not have topmarks.</p>
	NOAA	<p>Port-hand marks are red with cylindrical topmarks (if any). If lit, light is red.</p> <p>Starboard-hand marks are green with conical topmarks (if any). If lit, light is green.</p> <p>REGION A</p>	<p>Port-hand marks are green with cylindrical topmarks (if any). If lit, light is green.</p> <p>Starboard-hand marks are red with conical topmarks (if any). If lit, light is red.</p> <p>REGION B</p>	

































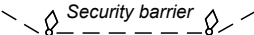



**Direction of Buoyage:** The direction of buoyage is that taken when approaching a harbor from seaward. Along coasts, the direction is determined by buoyage authorities, normally clockwise around land masses.

130.2	INT	Symbols showing direction of buoyage where it is not obvious		
		<p>General symbol for direction of buoyage</p>	<p>IALA Region A on multicolored charts</p>	<p>IALA Region B on multicolored charts</p>
	ECDIS	<p>General symbol for direction of buoyage</p>	<p>IALA Region A</p>	<p>IALA Region B</p>

















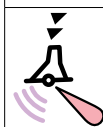

No.	INT	ECDIS
130.3	<p>Cardinal Marks: indicating navigable water to the named side of the marks. In the illustration below all marks are the same in Regions A and B.</p>  <p>Topmark: 2 black cones Light: White</p> <p>The same abbreviations are used for lights on spar buoys and beacons.</p> <p>The periods 5s, 10s, and 15s may not always be charted.</p> <p>Time (seconds) 0 5 10 15 Period shown</p> <p>Cardinal marks are seldom used in U.S. waters and do not appear on NOAA charts, except for charts that also depict Canadian waters.</p>	 <p>Paper chart symbology</p>  <p>Simplified symbology</p>












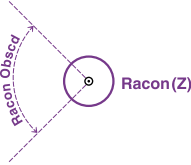
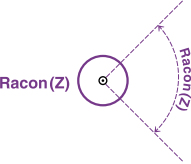
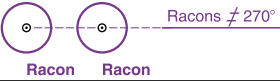










# Q Buoys, Beacons

No.	INT		Description	NOAA	NGA	Other NGA	ECDIS		
124			Refuge beacon					Purpose as refuge or firing danger area beacon is obtained by cursor pick	
126			Notice board					Notice board	
130.4	<b>Isolated Danger Marks</b> stationed over dangers with navigable water around them.      Body: black with red horizontal band(s)      Topmark: two black spheres      Light: white								
	     		Unlit Marks  Lighted Marks on standard charts  Unlit Marks on multicolored charts					  	Pillar buoy with 2 spheres topmark  Spar buoy with 2 spheres topmark  Isolated danger buoy, simplified
130.5	<b>Safe Water Marks</b> , including mid-channel and landfall marks.      Body: red and white vertical stripes      Topmark (if any): red sphere      Light: white								
	        		Unlit marks  Lighted Marks on standard charts  Lighted Marks on multicolored charts					   	Spherical buoy, paper chart  Pillar buoy with sphere topmark  Spar buoy with sphere topmark  Safe water buoy, simplified
130.6	<b>Special Marks</b> not primarily to assist navigation but to indicate special features.      Body (shape optional): yellow*      Topmark (if any): yellow X or upright cross      Light: yellow, rhythm optional*								
	        		Unlit Marks  Lighted Marks on standard charts  Lighted Marks on multicolored charts					    	Spherical buoy, paper chart  Can buoy  Conical buoy  Spar buoy with x-shape topmark  Special purpose buoy, simplified
* In special cases, yellow may be used in conjunction with another color									
























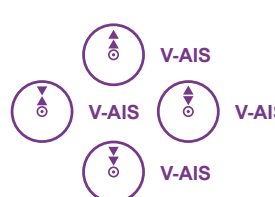




No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
130.7	<b>New Danger Marks.</b>	Body (shape optional): yellow and blue	Topmark: yellow cross			
	  	Unlit marks  Lighted Marks on standard charts  Lighted Marks on multicolored charts				  
Supplementary National Symbols						
a		Bell buoy	 BELL	 BELL		
b		Gong buoy	 GONG	 GONG		
c		Whistle buoy	 WHIS	 WHIS		
d		Fairway buoy (red and white vertical stripe)	 RW			
e		Mid-channel buoy (red and white vertical stripe)	 RW			
f		Starboard-hand buoy (entering from seaward - US waters)	 R "2"			
g		Port-hand buoy (entering from seaward - US waters)	 G "1"  "1"			
h		Bifurcation/Junction buoys	 RG  GR			
		Isolated danger, Wreck or Obstruction buoy	 BR			
i		Fish trap (area) buoy	 Y			
j		Anchorage buoy (marks limits)	 Y			
l		Triangular shaped beacons	 R  RG Bn			
		Square shaped beacons	 G  GR Bn  W Bn  B Bn			
		Beacon, color unknown	 Bn			
o		Lighted beacon	 !	 !	 ! Bn  !	
q		Security barrier	 Security barrier			
r		Scientific mooring buoy				
s		Float (unlighted)				
t		White and blue buoy		 WBW		

# R Fog Signals















No.	INT	Description	NOAA	NGA	Other NGA	ECDIS		
General								
Fog Detector Light → P		Fog Light → P						
1		Position of fog signal, type of fog signal not stated	Fog Sig 				Position of a conspicuous point feature with fog signal  Lighted pillar buoy, paper chart with fog signal  Lighted super-buoy, paper chart with fog signal	
2	(man)	Manually activated						
Types of Fog Signals, with Abbreviations						Supplementary national symbol: a		
10	Explos	Explosive	<i>GUN</i>				Type of fog signal and its characteristics are obtained by cursor pick	
11	Dia	Diaphone	<i>DIA</i>					
12	Siren	Siren	<i>SIREN</i>					
13	Horn	Horn (nautophone, reed, tyfon)	<i>HORN</i>					
14	Bell	Bell	<i>BELL</i>					
15	Whis	Whistle	<i>WHISTLE</i>					
16	Gong	Gong	<i>GONG</i>					
Examples of Fog Signal Descriptions								
Note: The fog signal symbol will usually be omitted when a description of the signal is given.								
20	 FI.3s70m29M Siren Mo(N)60s	Siren at a lighthouse, giving a long blast followed by a short one (N), repeated every 60 seconds	 FI 3s 70m 29M SIREN Mo(N) 60s	 FI 3s 70m 29M SIREN			Light with fog signal	
21	 Bell	Wave-actuated bell buoy	 BELL	 BELL			Pillar buoy, paper chart with fog signal	
22	 Q(6)+LFI.15s Horn(1)15sWhis	Light buoy, with horn giving a single blast every 15 seconds, in conjunction with a wave-actuated whistle	 Q(6)+LFI 15s HORN(1) 15s WHIS	 Q(6)+LFI 15s HORN WHIS		Paper Chart	Simplified	Lighted pillar buoy, paper chart with fog signal
								
Supplementary National Symbol								
a		Morse Code fog signal	<i>Mo</i>					

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS		
Radar								
Radar Structures Forming Landmarks → E		Radar Surveillance Systems → M						
1	 <b>Ra</b>	Coast radar station, providing range and bearing service on request		 <b>Ra</b>			Radio station	
2	 <b>Ramark</b>	Ramark, radar beacon transmitting continuously		 <b>Ramark</b>			Radar transponder beacon	
3.1	 <b>Racon(Z)(3cm)</b>	Radar transponder beacon, with morse identification, responding within the 3 cm (X) band	†	 <b>RACON</b>				
3.2	 <b>Racon(Z)(10cm)</b>	Radar transponder beacon, with morse identification, responding within the 10 cm (S) band						
3.3	 <b>Racon(Z)</b>	Radar transponder beacon, with morse identification			 <b>Racon(Z) (3 &amp; 10 cm)</b>			
3.4	 <b>Racon(Z)</b>	Radar transponder beacon with sector of obscured reception						
	 <b>Racon(Z)</b>	Radar transponder beacon with sector of reception						
3.5	 <b>Racon Racon</b>	Leading radar transponder beacons (±: objects in line)						
	 <b>Racon Racon</b>	Leading radar transponder beacons coincident with leading lights						
3.6	 <b>Racon Racon</b>	Radar transponder beacons on floating marks	 <b>RACON (-) R "2" FI R 4s</b>	 <b>Racon</b>				Radar transponder on floating mark
4		Radar reflector					Symbol indicating this object is radar conspicuous	
Radar reflectors are not charted on buoys in regions where they are fitted to nearly all buoys								
5		Radar conspicuous feature						

# S Radar, Radio, Satellite Navigation Systems























No.	INT	Description	NOAA	NGA	Other NGA	ECDIS
Radio						
Radio Structures Forming Landmarks → E			Radio Reporting (Calling-in or Way) points → M			
10	†	 <b>Name RC</b>	Circular (non-directional) marine or aeromarine radiobeacon	†  RC †  R Bn		 Radio station  Additional information regarding radio, such as category of radio station, signal frequency, communication channel, call sign, estimated signal range, periodicity and status may be included in the cursor pick.  The presence of an AIS transmitted signal intended for use as an aid to navigation associated with a physical aid, including the AIS MMSI Number, can be obtained by cursor pick on the physical aid.
11	†	 <b>RD</b> RD 269.5°	Directional radiobeacon with bearing line	†  RD RD 270°		
	†	 <b>RD</b> Lts ≠ 270° RD 270°	Directional radiobeacon coincident with leading lights			
12	†	 <b>RW</b>	Rotating pattern radiobeacon	†  RW		
13	†	 <b>Consol</b>	Consol beacon	†  CONSOL Bn 190 kHz MMF 7777 †  CONSOL		
14		 <b>RG</b>	Radio direction-finding station	 RDF		
15	†	 <b>R</b>	Coast radio station providing QTG service	†  R Sta †  R		
16	†	 <b>Aero RC</b>	Aeronautical radiobeacon	†  AERO R Bn		
17.1		 <b>AIS</b>	Automatic Identification System transmitter			
17.2		 <b>AIS</b>  <b>AIS</b>	Automatic Identification System transmitter on floating marks (examples)			
18.1		 <b>V-AIS</b>	Virtual AIS (with unknown IALA-defined function)			
18.2		 <b>V-AIS</b> <b>V-AIS</b> <b>V-AIS</b> <b>V-AIS</b>	Virtual AIS (with known IALA-defined function)			 <b>V-AIS</b> North cardinal virtual aid  <b>V-AIS</b> East cardinal virtual aid  <b>V-AIS</b> South cardinal virtual aid  <b>V-AIS</b> West cardinal virtual aid



No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
18.3	 <b>V-AIS</b>	Virtual AIS with lateral mark function				 <b>V-AIS</b>	Port Lateral (IALA B) virtual aid
	 <b>V-AIS</b>					 <b>V-AIS</b>	Starboard Lateral (IALA B) virtual aid
18.4	 <b>V-AIS</b>	Virtual AIS with isolated danger mark function				 <b>V-AIS</b>	Isolated Danger virtual aid
18.5	 <b>V-AIS</b>	Virtual AIS with safe water mark function				 <b>V-AIS</b>	Safe Water virtual aid
18.6	 <b>V-AIS</b>	Virtual AIS with special purpose mark function				 <b>V-AIS</b>	Special Purpose virtual aid
18.7	 <b>V-AIS</b>	Virtual AIS with new danger mark function				 <b>V-AIS</b>	Emergency Wreck virtual aid
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 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.						
51	 <b>DGPS</b>	Station providing DGPS corrections				 <b>DGPS</b>	DGPS reference station

# T Services

No.	INT		Description	NOAA	NGA	Other NGA	ECDIS	
Pilotage								
1.1			Boarding place, position of a pilot cruising vessel	<i>Pilots</i>				Pilot boarding place
1.2	<i>Name</i>		Boarding place, position of a pilot cruising vessel, with name (e.g. District, Port)		<i>Name</i>			Pilot boarding area
1.3	<i>Note</i>		Boarding place, position of a pilot cruising vessel, with note (e.g. Tanker, Disembarkation)		(see note)			
1.4	<i>H</i>		Pilots transferred by helicopter					
2	Pilot Lookout		Pilot office with pilot lookout, Pilot lookout station					
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	CG			CG	Coast guard station
				R TR CG WALLIS SANDS				
11	CG      CG      CG		Coast Guard station with Rescue station				CG	Coast guard station Rescue station
12			Rescue station, Lifeboat station, Rocket station	LS S				Rescue station
13			Lifeboat lying at a mooring					
14	Ref	<i>Ref</i>	Refuge for shipwrecked mariners					
Signal Stations								
20	SS		Signal station in general	SS		Sig Sta	SS	Signal station
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				

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS	
24	 SS (Lock)	Lock signal station					Signal station
25.1	 SS (Bridge)	Bridge passage signal station					
25.2	 <sup>F</sup> Traffic-Sig	Bridge lights including traffic signals					
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

No.	INT	Description	NOAA	NGA	Other NGA	ECDIS																																																																																																																																																																																																																																																														
Small Craft (Leisure) Facilities																																																																																																																																																																																																																																																																				
Traffic Features, Bridges → D						Public Buildings, Cranes → F						Pilots, Coast Guard, Rescue, Signal Stations → T																																																																																																																																																																																																																																																								
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	<table><tr><th colspan="2">TIDES</th><th>DEPTH</th><th colspan="8">SERVICES</th><th colspan="10">SUPPLIES</th></tr><tr><th colspan="2"></th><th></th><th>ALONGSIDE-Feet (Reported)</th><th>RAMP SURFACED-Feet (Reported)</th><th>ELECTRICITY-Mooring-Berths (Transients)</th><th>REPAIRS HULL-Motor-Radio</th><th>LIFT CAPACITY-Tons</th><th>BOAT RENTAL</th><th>CANOE-ROW-Motor</th><th>FOOD-LODGING-Camping</th><th>PUMP OUT Station</th><th>TOILETS-Shower-Laundry</th><th>WINTER STORAGE</th><th>NAUTICAL CHART SALES</th><th>WATER-ICE</th><th>GROCERIES-HARDWARE</th><th>BAIT-TACKLE</th><th>DIESEL OIL-GASOLINE</th><th colspan="2"></th></tr><tr><th>NO</th><th>LOCATION</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tr><tr><td>1</td><td>LAS VEGAS BOAT</td><td></td><td></td><td>80</td><td>20</td><td></td><td>S</td><td>HM</td><td></td><td></td><td>M</td><td></td><td></td><td>F C</td><td>T P</td><td>WD</td><td>C</td><td>WI</td><td>GH</td><td>BT</td><td>G</td></tr><tr><td>2</td><td>LAKE MEAD MAR</td><td></td><td></td><td>80</td><td>15</td><td>B E</td><td>S</td><td>HM</td><td></td><td></td><td>M</td><td></td><td></td><td>FL</td><td>T P</td><td>WD</td><td>C</td><td>WI</td><td></td><td></td><td>DG</td></tr><tr><td>3</td><td>HEMENWAY HARBOR</td><td></td><td></td><td>80</td><td></td><td></td><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td>TEMPLE BAR HAR</td><td></td><td></td><td>80</td><td>15</td><td></td><td>SN</td><td></td><td></td><td></td><td>M</td><td>H</td><td>FLC</td><td>TSL P</td><td>WD</td><td>C</td><td>WI</td><td>GH</td><td>BT</td><td>G</td><td></td></tr><tr><td>5</td><td>ECHO BAY RESORT</td><td></td><td></td><td>35</td><td>35</td><td>BM</td><td>S</td><td>M</td><td></td><td></td><td>M</td><td>H</td><td>FLC</td><td>TSL P</td><td>WD</td><td>C</td><td>WI</td><td>GH</td><td>BT</td><td>G</td><td></td></tr><tr><td>6</td><td>OVERTON BEACH</td><td></td><td></td><td>100</td><td></td><td></td><td>S</td><td></td><td></td><td></td><td>M</td><td></td><td></td><td>F C</td><td>TSL</td><td>WD</td><td></td><td>WI</td><td>G</td><td>BT</td><td>G</td></tr><tr><td>7</td><td>CALLVILLE BAY M</td><td></td><td></td><td>100</td><td>40</td><td></td><td>S</td><td></td><td></td><td></td><td>M</td><td>H</td><td>F C</td><td>TS P</td><td>WD</td><td></td><td>WI</td><td>G</td><td>B</td><td>G</td><td>G</td></tr><tr><td colspan="22">(+) 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.</td></tr></table>																					TIDES		DEPTH	SERVICES								SUPPLIES													ALONGSIDE-Feet (Reported)	RAMP SURFACED-Feet (Reported)	ELECTRICITY-Mooring-Berths (Transients)	REPAIRS HULL-Motor-Radio	LIFT CAPACITY-Tons	BOAT RENTAL	CANOE-ROW-Motor	FOOD-LODGING-Camping	PUMP OUT Station	TOILETS-Shower-Laundry	WINTER STORAGE	NAUTICAL CHART SALES	WATER-ICE	GROCERIES-HARDWARE	BAIT-TACKLE	DIESEL OIL-GASOLINE			NO	LOCATION																				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	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.																					
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Note—INT abbreviations are in bold type

<b>A</b>		
abt	About	D i
<b>Accom</b>	<b>Accommodation vessel</b>	L 17
AERO, <b>Aero</b>	<b>Aeronautical light</b>	P 60–61.1
Aero R Bn	Aeronautical radiobeacon	S 16
<b>Aero RC</b>	<b>Aeronautical radiobeacon</b>	S 16
<b>AIS</b>	<b>Automatic Identification System</b>	S 17.1–17.2
<b>AI</b>	<b>Alternating</b>	P 10.11
<b>ALC</b>	<b>Articulated Load Column</b>	L 12
<b>Am</b>	<b>Amber</b>	P 11.8
anc	Ancient	
ANCH, Anch	Anchorage	N 20
ANT, Ant	Antenna	E 31
approx	Approximate	
Apprs	Approaches	
Apr	April	
Apt	Apartment	E s
Arch	Archipelago	
<b>ASL</b>	<b>Archipelagic Sea Lane</b>	<b>M 17</b>
ATBA	Area To Be Avoided	M 29.1
Aug	August	
auth	Authorized	K 46.2
Ave	Avenue	
<b>B</b>		
B	Bay, bayou	
<b>B</b>	<b>Black</b>	Q 2
Bdy Mon	Boundary mark (monument)	B 24
Bk	Bank	
bk	Black	J as
<b>bk</b>	<b>Broken</b>	J 33
Bkw	Breakwater	F 4.1
bl	Black	J as
BM	Bench Mark	B 23
<b>Bn, Bns</b>	<b>Beacon(s)</b>	M 2, P 4–5, Q 80–81
<b>BnTr, BnTrs</b>	<b>Beacon tower(s)</b>	P 3, Q 110
<b>Bo</b>	<b>Boulder(s)</b>	J 9.2
Bol	Bollard	

<b>Br</b>	<b>Breakers</b>	K 17
br	Brown	J az
brg	Bearing	B 62
brk	Broken	J 33
<b>Bu</b>	<b>Blue</b>	P 11.4
<b>C</b>		
C	Can, cylindrical	Q 21
C	Cape	
C	Cove	
<b>c</b>	<b>Coarse</b>	J 32
Ca, <b>ca</b>	<b>Calcareous</b>	J 38
<b>CALM</b>	<b>Catenary Anchor Leg Mooring</b>	L 16
Cap	Capitol	E t
Cas	Castle	E 34.2
<b>Cb</b>	<b>Cobbles</b>	J 8
cbl	Cable	B 46
<b>cd</b>	<b>Candela</b>	B 54
Cem	Cemetery	E 19
<b>CG</b>	<b>Coast Guard station</b>	T 10
Ch	Chocolate	J ba
<b>Ch</b>	<b>Church</b>	E 10.1
Chan	Channel	
Chem	Chemical	L 40.1–40.2
CHY, <b>Chy, Chys</b>	<b>Chimney(s)</b>	E 22
Cir	Cirripedia	J ae
Ck	Chalk	J f
CL	Clearance	D 20–21, 26, 28
Cl	Clay	J 3
<b>cm</b>	<b>Centimeter(s)</b>	B 43
Cn	Cinders	J p
Co	Company	E u
<b>Co</b>	<b>Coralline Algae</b>	J 10, K 16
Co Hd	Coral Head	J i
Co rf	Coral reef	
COLREGS	International Regulations for Preventing Collisions at Sea	N a
<b>Consol</b>	<b>Consol Beacon</b>	S 13
constr	Construction	F 32

Corp	Corporation	E v
cov	Covers	L 21.2
cps	Cycles per second	B j
Cr	Creek	
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
<b>Cy</b>	<b>Clay</b>	J 3
<b>D</b>		
D	Destroyed	
dec	Decayed	J an
Dec	December	
Deg	Degree(s)	B n
Destr	Destroyed	
dev	Deviation	B 67
DF	Direction Finder	
<b>DG</b>	<b>Degaussing Range</b>	N 25, Q 54
<b>DGPS</b>	<b>Differential Global Positioning System</b>	S 51
Di	Diatoms	J aa
DIA, <b>Dia</b>	<b>Diaphone</b>	R 11
<b>Dir</b>	<b>Direction light</b>	P 30–31
Discol	Discolored	K e
dist	Distant	
dk	Dark	J bd
<b>dm</b>	<b>Decimeter(s)</b>	B 42
<b>Dn, Dns</b>	<b>Dolphin(s)</b>	F 20
Dol	Dolphin(s)	F 20
<b>DW</b>	<b>Deep Water Route</b>	M 27.1, N 12.4
<b>DZ</b>	<b>Danger Zone</b>	Q 50
<b>E</b>		
<b>E</b>	<b>East</b>	B 10
<b>ED</b>	<b>Existence Doubtful</b>	I 1
EEZ	Exclusive Economic Zone	N 47

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Note—INT abbreviations are in bold type

Entr	Entrance	
ESSA	Environmentally Sensitive Sea Area	N 22
Est	Estuary	
exper	Experimental	
<b>Explos</b>	<b>Explosive</b>	R 10
Exting, <b>exting</b>	<b>Extinguished</b>	P 55
<b>F</b>		
<b>f</b>	<b>Fine</b>	J 30
<b>F FI</b>	<b>Fixed and flashing</b>	P 10.10
<b>F Gp FI</b>	<b>Fixed and Group Flashing</b>	P d
Facty	Factory	E d
<b>FAD</b>	<b>Fish Aggregating Device</b>	
Fd	Fjord	
FISH	Fishing	N 21
<b>FI</b>	<b>Flashing</b>	P 10.4
fl	Flood	H q
<b>Fla</b>	<b>Flare stack</b>	L 11
fly	Flinty	J ao
<b>fm, fms</b>	<b>Fathom(s)</b>	B 48
fne	Fine	J 30
<b>Fog Det Lt</b>	<b>Fog detector light</b>	P 62
Fog Sig	Fog Signal	R 1
FP	Flagpole	E 27
<b>FPSO</b>	<b>Floating Production, Storage and Offloading Vessel</b>	L 17
Fr	Foraminifera	J y
Fs, <b>FS</b>	<b>Flagstaff</b>	E 27
Fsh stks	Fishing stakes	K 44.1
FT, <b>ft</b>	<b>Foot, Feet</b>	B 47, D 20
Fu	Fucus	J af
<b>G</b>		
<b>G</b>	<b>Gravel</b>	J 6
<b>G</b>	<b>Green</b>	P 11.3, Q 2
G	Gulf	
GAB, Gab	Gable	E i
GCLWD	Gulf Coast Low Water Datum	H k
GI	Globigerina	J z

glac	Glacial	J ap
gn	Green	J av
Govt Ho	Government House	E m
Gp FI	Group flashing	P 10.4
Gp Oc	Group occulting	P 10.2
<b>GPS</b>	<b>Global Positioning System</b>	
Grd	Ground	J a
Grs	Grass	J v
<b>grt</b>	<b>Gross Register Tonnage</b>	
<b>GT</b>	<b>Gross Tonnage</b>	
gty	Gritty	J am
gy	Gray	J bb
<b>H</b>		
<b>H</b>	<b>Helicopter</b>	T 1.4
<b>h</b>	<b>Hard</b>	J 39
<b>h</b>	<b>Hour</b>	B 49
HAT	Highest Astronomical Tide	H 3
Hbr Mr	Harbormaster	F 60
HHW	Higher High Water	H b
Hk	Hulk	F 34, K 20–21
Ho	House	
<b>hor</b>	<b>Horizontally disposed</b>	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
<b>I</b>		
IALA	International Association of Lighthouse Authorities*	Q 130
IHO	International Hydrographic Organization	
illum	Illuminated	P 63
IMO	International Maritime Organization	

In	Inlet	
in, ins	Inch(es)	B c
Inst	Institute	E n
<b>INT</b>	<b>International</b>	A 2, T 21
<b>Intens</b>	<b>Intensified</b>	P 46
<b>IQ</b>	<b>Interrupted quick</b>	P 10.6
ISLW	Indian Spring Low Water	H g
<b>Iso</b>	<b>Isophase</b>	P 10.3
ITZ	Inshore Traffic Zone	M 25.1
<b>IUQ</b>	<b>Interrupted ultra quick</b>	P 10.8
<b>IVQ</b>	<b>Interrupted very quick</b>	P 10.7
<b>J</b>		
Jan	January	
Jul	July	
Jun	June	
<b>K</b>		
K	Kelp	J u
kc	Kilocycle	B k
kHz	Kilohertz	B h
<b>km</b>	<b>Kilometer(s)</b>	B 40
<b>kn</b>	<b>Knot(s)</b>	B 52
<b>L</b>		
L	Lake, loch, lough	
<b>L FI</b>	<b>Long-flashing</b>	P 10.5
La	Lava	J l
Lag	Lagoon	
<b>LANBY</b>	<b>Large Automatic Navigational Buoy</b>	Pf
<b>LASH</b>	<b>Lighter Aboard Ship</b>	
<b>LAT</b>	<b>Lowest Astronomical Tide</b>	H 2
<b>Lat</b>	<b>Latitude</b>	B 1
Ldg	Landing	F 17
<b>Ldg</b>	<b>Leading Lights</b>	P 20.3
Le	Ledge	
LLW	Lower Low Water	H e
<b>Lndg</b>	<b>Landing for boats</b>	F 17
<b>LNG</b>	<b>Liquified Natural Gas</b>	

\*Now known as the International Association of Marine Aids to Navigation and Lighthouse Authorities. The organization, formerly called the International Association of Lighthouse Authorities/Association Internationale de Signalisation Maritime (IALA/AISM), continues to use IALA as an abbreviation for its full name.

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Note—INT abbreviations are in bold type

LoLo	Load-on, Load-off	
Long	Longitude	B 2
LPG	Liquified Petroleum Gas	
Lrg	Large	J a
LS S	Life saving station	T 12
lt	Light	J bc
Lt Ho	Light house	P 1
<b>Lt, Lt(s)</b>	<b>Light(s)</b>	P 1
Ltd	Limited	E r
LW	Low Water	H c
LWD	Low Water Datum	H d
LWF&C	Low Water Full and Change	H i
<b>M</b>		
<b>M</b>	<b>Mud, muddy</b>	J 2
<b>M</b>	<b>Nautical mile(s)</b>	B 45
<b>m</b>	<b>Medium (in relation to sand)</b>	J 31
<b>m</b>	<b>Meter(s)</b>	B 41
<b>m</b>	<b>Minute(s) of time</b>	B 50
Ma	Mattes	J ag
mag	Magnetic	B 61
Magz	Magazine	E l
Maintd	Maintained	P 65
<b>man</b>	<b>Manually activated</b>	P 56, R 2
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	Minimum	K 46.2
<b>min</b>	<b>Minute(s) of time</b>	B 50
<b>Mk</b>	<b>Mark</b>	Q 101
MI	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
<b>mm</b>	<b>Millimeter(s)</b>	B 44
Mn	Manganese	J q
<b>Mo</b>	<b>Morse Code</b>	P 10.9, R 20
MON, Mon	<b>Monument</b>	E 24
<b>MR</b>	<b>Marine Reserve</b>	N 22
<b>MRCC</b>	<b>Maritime Rescue and Coordination Center</b>	
Ms	Mussels	J s
MSL	Mean Sea Level	H 6
Mt	Mountain, Mount	
Mth	Mouth	
MTL	Mean Tide Level	H 1
<b>N</b>		
<b>N</b>	<b>North</b>	<b>B 9</b>
N	Nun	Q 20
<b>NE</b>	<b>Northeast</b>	B 13
NGA	National Geospatial-Intelligence Agency	
NM	Nautical miles(s)	B 45
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
<b>NT</b>	<b>Net Tonnage</b>	
NTM	Notice to Mariners	
<b>NW</b>	<b>Northwest</b>	B 15
NWS SIG STA	National Weather Service signal station	T 29
<b>O</b>		
Obs Spot	Observation spot	B 21
OBSC, Obscd	<b>Obscured</b>	P 43
Obstn	<b>Obstruction</b>	K 41
Oc	<b>Occulting</b>	P 10.2

Occas	<b>Occasional</b>	P 50
Oct	October	
<b>ODAS</b>	<b>Ocean Data Acquisition System</b>	Q 58
<b>Or</b>	<b>Orange</b>	P 11.7
OVHD	Overhead	D 28
Oys	Oysters	J r
<b>P</b>		
<b>P</b>	<b>Pebbles</b>	J 7
P	Pillar	Q 23
(P)	Preliminary (NTM)	
<b>PA</b>	<b>Position approximate</b>	B 7
Pass	Passage, Pass	
Pav	Pavilion	E p
PD	Position doubtful	B 8
Pk	Peak	
PLT STA	Pilot station	T 3
Pm	Pumice	J m
PO	Post office	F 63
Po	Polyzoa	J ad
pos, posn	Position	
Post Off	Post office	F 63
Priv, <b>priv</b>	<b>Private</b>	P 65, Q 70
<b>Prod well</b>	<b>Production well</b>	L 20
PROHIB	Prohibited	N 2.2
<b>PSSA</b>	<b>Particularly Sensitive Sea Area</b>	N 22
Pt	Pteropods	J ac
<b>Pyl</b>	<b>Pylon</b>	D 26
<b>Q</b>		
<b>Q</b>	<b>Quick</b>	P 10.6
QTG	Service producing DF signals	S 15
Quar	Quarantine	F e
Qz	Quartz	J g
<b>R</b>		
<b>R</b>	<b>Coast radio station providing QTC service</b>	S 15
R	Radio Station	S 15
<b>R</b>	<b>Red</b>	P 11.2
<b>R, r</b>	<b>Rock, Rocky</b>	J 9.1, K b

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Note—INT abbreviations are in bold type

R Bn	Circular radiobeacon	S 10
R Lts	Air obstruction lights	P 61.2
R Mast	Radio mast	E 28
R Sta	Radio Station	S 15
R Tower	Radio tower	E 29
R TR, R Tr	Radio tower	E 29
<b>Ra</b>	<b>Radar</b>	M 31–32, S 1
Ra	Radar reference line	M 32.1
Ra (conspic)	Radar conspicuous point	S 5
Ra Ref	Radar reflector	S 4
<b>Racon</b>	<b>Radar transponder beacon</b>	S 3
Radar Sc	Radar scanner	E 30.3
Radar Tr, RADAR TR	Radar tower	E 30.2
Ramark	Radar marker beacon	S 2
<b>RC</b>	<b>Circular radiobeacon</b>	S 10
<b>RD</b>	<b>Directional radiobeacon</b>	S 11
Rd	Radiolaria	J ab
Rd	Road, roadstead	
rd	Red	J ay
RDF	Radio direction finding station	S 14
<b>Ref</b>	<b>Refuge</b>	Q 124
Rep	Reported	I 3
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<b>RG</b>	<b>Radio direction finding station</b>	S 14
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rt	Rotten	J aj
<b>Ru, (ru)</b>	<b>Ruin, ruined</b>	D 8, E 25.2, F 33
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S	Spar, spindle	Q 24
<b>s</b>	<b>Second(s) of time</b>	B 51, P 12
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<b>SBM</b>	<b>Single Buoy Mooring</b>	L 16
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Sc	Scoriae	J o
Sch	Schist	J h
Sch	School	E f
SD	Sailing Directions	
Sd	Sound	
SD	Sounding doubtful	I 2
<b>SE</b>	<b>Southeast</b>	B 14
<b>sec</b>	<b>Seconds of time</b>	B 51
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<b>sf</b>	<b>Stiff</b>	J 36
sft	Soft	J 35
<b>Sg</b>	<b>Seagrass</b>	J 13.3
<b>Sh</b>	<b>Shells</b>	J 11
Shl	Shoal	
<b>Si</b>	<b>Silt</b>	<b>J 4</b>
<b>Sig</b>	<b>Signal</b>	<b>R 1, T 25.2</b>
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S-L Fl	Short-Long Flashing	P b
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sml	Small	J ah
SMt	Seamount	
Sn	Shingle	J d
<b>so</b>	<b>Soft</b>	J 35
Sp	Church spire	E 10.3
SP	Spherical	Q 22
Sp	spire	E 10.3
Sp	Spring tide	H 16
SpG	Sponge	J t
Spi	Spicules	J x
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spk	Speckled	J al
<b>SPM</b>	<b>Single Point Mooring</b>	L 12
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<b>St</b>	<b>Stones</b>	J 5
St M, St Mi	Statute mile(s)	B e

STA, Sta	Station	F 41.1, S 15, T 3
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Stg	Sea-tangle	J w
stk	Sticky	J 34
Str	Strait	
Str	Stream	H I
str	Streaky	J ak
sub	Submarine	K d
Subm	Submerged	K 43.1
<b>SW</b>	<b>Southwest</b>	B 16
<b>sy</b>	<b>Sticky</b>	J 34
<b>T</b>		
T	Short ton(s)	B m
T	Telephone	E q
T	TRUE	B 63
T	Tufa	J n
<b>t</b>	<b>Ton(s), Tonnage (weight)</b>	B 53, F 53
Tel	Telegraph	D 27
Tel off	Telegraph office	E k
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ten	Tenacious	J aq
Tk	Tank	E 32
TR, <b>Tr, Trs</b>	<b>Tower(s)</b>	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
<b>U</b>		
<b>ULCC</b>	<b>Ultra Large Crude Carrier</b>	
Uncov	Uncovers	K 11
unev	Uneven	J bf
Univ	University	E h
<b>UQ</b>	<b>Ultra quick</b>	P 10.8
<b>UTC</b>	<b>Coordinated Universal Time</b>	
<b>UTM</b>	<b>Universal Transverse Mercator</b>	
<b>V</b>		
<b>v</b>	<b>Volcanic</b>	J 37



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Note—INT abbreviations are in bold type

var, VAR	Variation	B 60
vard	Varied	J be
vel	Velocity	H n
<b>vert</b>	<b>Vertically disposed</b>	P 15
Vert CL	Vertical clearance	D 20, 28
<b>Vi</b>	<b>Violet</b>	P 11.5
Vil	Village	D 4
<b>VLCC</b>	<b>Very Large Crude Carrier</b>	G 187
vol	Volcanic, Volcano	J 37
Vol Ash	Volcanic ash	J k
<b>VQ</b>	<b>Very quick</b>	P 10.7
<b>VTs</b>	<b>Vessel Traffic Service</b>	
<b>W</b>		
<b>W</b>	<b>West</b>	B 12
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<b>Wd</b>	<b>Weed</b>	J 13.1
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<b>WGS</b>	<b>World Geodetic System</b>	S 50
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Whf	Wharf	F 13
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<b>Y</b>	<b>Yellow, Orange, Amber</b>	P 11.6–11.8
yd, yds	Yard(s)	B d
yl	Yellow	J aw
<b>μ</b>		
μs, μsec	Microsecond(s)	B f



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Tunnel <i>pipeline</i>	D 16 L 42.2
Tunney nets <i>area</i>	K 44.2–45 K 45
Turbine <i>wind</i> <i>underwater</i>	E 26.1, L 5.1 L 24
Two-way <i>route</i> <i>track</i>	M 27.2, 28.1–28.2 M 4, 5.2
Tyfon	R 13
Types of <i>fog signals</i> <i>seabed, intertidal areas</i>	R 10–16 J 20–22
<b>U</b>	
Ultra quick light	P 10.8
Uncovers	K 11, 21, h
Under construction	D d, F 30–32
Underwater <i>installations</i> <i>rock</i> <i>turbine</i>	L 20–25 K 13–15 L 24
Uneven	J bf
Unexploded ordinance	K p
Units	A b, B 40–54
University	E h
Unsurveyed <i>coastline</i> <i>depths</i>	C 2 I 25
Unwatched, unmanned light	P 53, e
Update	A 7
Upper light	P 22
Urban area	D 1
<b>V</b>	
Variation, magnetic	B 68.1–71, p
Varied	J be
Various limits	N 60.1–65
Vegetation	C 30–33, i–t
Velocity	H n

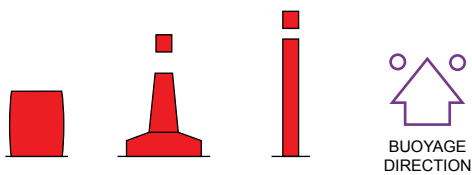
Vertical <i>clearance</i> <i>color striped</i> <i>lights</i>	D 22, 23.1, 23.4, 23.6–28 Q 5 P 15
Vertically disposed	P 15
Very quick light	P 10.7
Vessel, light	P e
Viaduct	D f
Views	E 3.1–3.2
Village	D 4
Violet	J at, P 11.5
Virtual AIS	S 18.1–18.7
Visitor's <i>berth</i> <i>mooring</i>	F 19.2 Q 45
Volcanic <i>ash</i>	J 37 J k
Volcano	K d
<b>W</b>	
Wall, training	F 5
Warehouse	F 51
Water <i>discolored</i> <i>features</i> <i>intake</i> <i>pipeline</i> <i>pipeline area</i> <i>tank</i> <i>tower</i>	K e C 20–25 L 41.1–41.2, b L 40.1, 41.1 L 40.2, L 41.2 E 21 E 21
Waterfalls	C 22
Watermill	E c
Wave <i>actuated fog signal</i> <i>farm</i>	R 21–22 L 6
Way point	M 40.1
Weather signal station	T 29
Weed	J 13.1–13.2
Weir, fish	K 44.2
Well <i>submerged</i> <i>suspended</i> <i>production</i>	E e L a L 21 L 20
Wellhead	L 21.1–21.2, 23
West <i>cardinal mark</i>	B 12 Q 130.3

Wet dock	F 27
Wharf	F 13
Whistle <i>buoy</i>	R 15 Q c
White	J ar, P 11.1
Wind <i>farm</i> <i>signal station</i> <i>turbine</i>	E 26.2, L 5.2 T 29 E 26.1, L 5.1
Windmill	E 25.1–25.2
Withy	Q 91–92
Woodland <i>coniferous</i> <i>deciduous</i>	C j C i
Woods, wooded	C 30
Works <i>at sea, (reclamation area)</i> <i>on land</i> <i>under construction, works in progress</i>	F 31 F 30 F 32
World Geodetic System (WGS)	S 50
Wreck <i>buoy (marking new danger)</i> <i>mast</i>	K 20–30, c Q 130.7 K 25
<b>Y</b>	
Yacht <i>berths without facilities</i> <i>club</i>	F 11.2 F 11.3
Yard <i>timber</i>	B d F 52
Yellow	J aw, P 11.6
<b>Z</b>	
Zone <i>Exclusive Economic Zone (EEZ)</i> <i>fishing</i> <i>inshore traffic</i> <i>seaward, contiguous</i> <i>separation</i>	N 47 N 45 M 25.1–25.2 N 44 M 13, 20.1–20.3

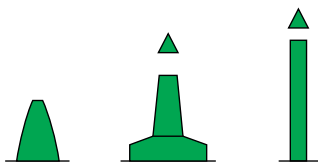
# Appendix 1 IALA Maritime Buoyage System

## Region A Lateral Marks

Port Hand



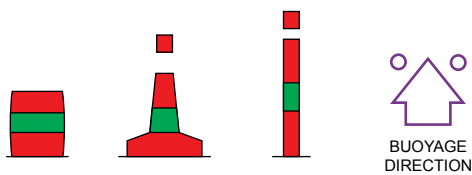
Starboard Hand



red	Color	green
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
single red cylinder (can)	Topmark (if any)	single green cone, point upward

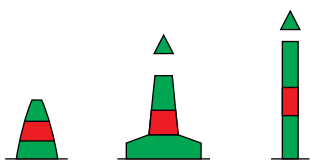
Lights (if any): may have any phase characteristic other than that used for preferred channels		
	Quick Flashing	
	Flashing	
	Long Flashing	
	Group Flashing	

Preferred Channel  
to Starboard



red with one green horizontal band	Color	green with one red horizontal band
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
single red cylinder (can)	Topmark (if any)	single green cone, point upward

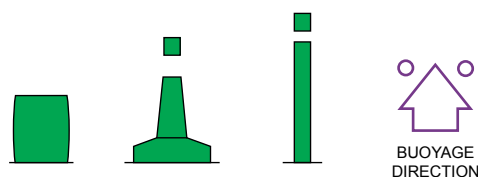
Preferred Channel  
to Port



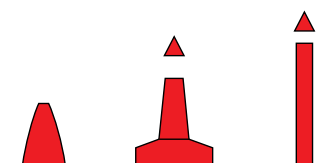
Lights (if any) are composite group flashing		
	Fl (2+1)	

## Region B Lateral Marks

### Port Hand



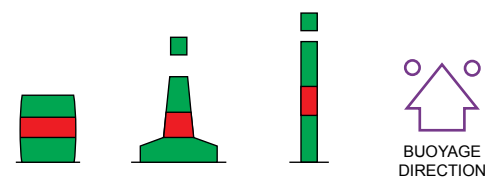
### Starboard Hand



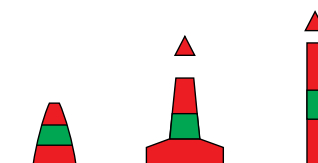
green	Color	red
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
single green cylinder (can)	Topmark (if any)	single red cone, point upward

Lights (if any): may have any phase characteristic other than that used for preferred channels		
	Quick Flashing	
	Flashing	
	Long Flashing	
	Group Flashing	

### Preferred Channel to Starboard



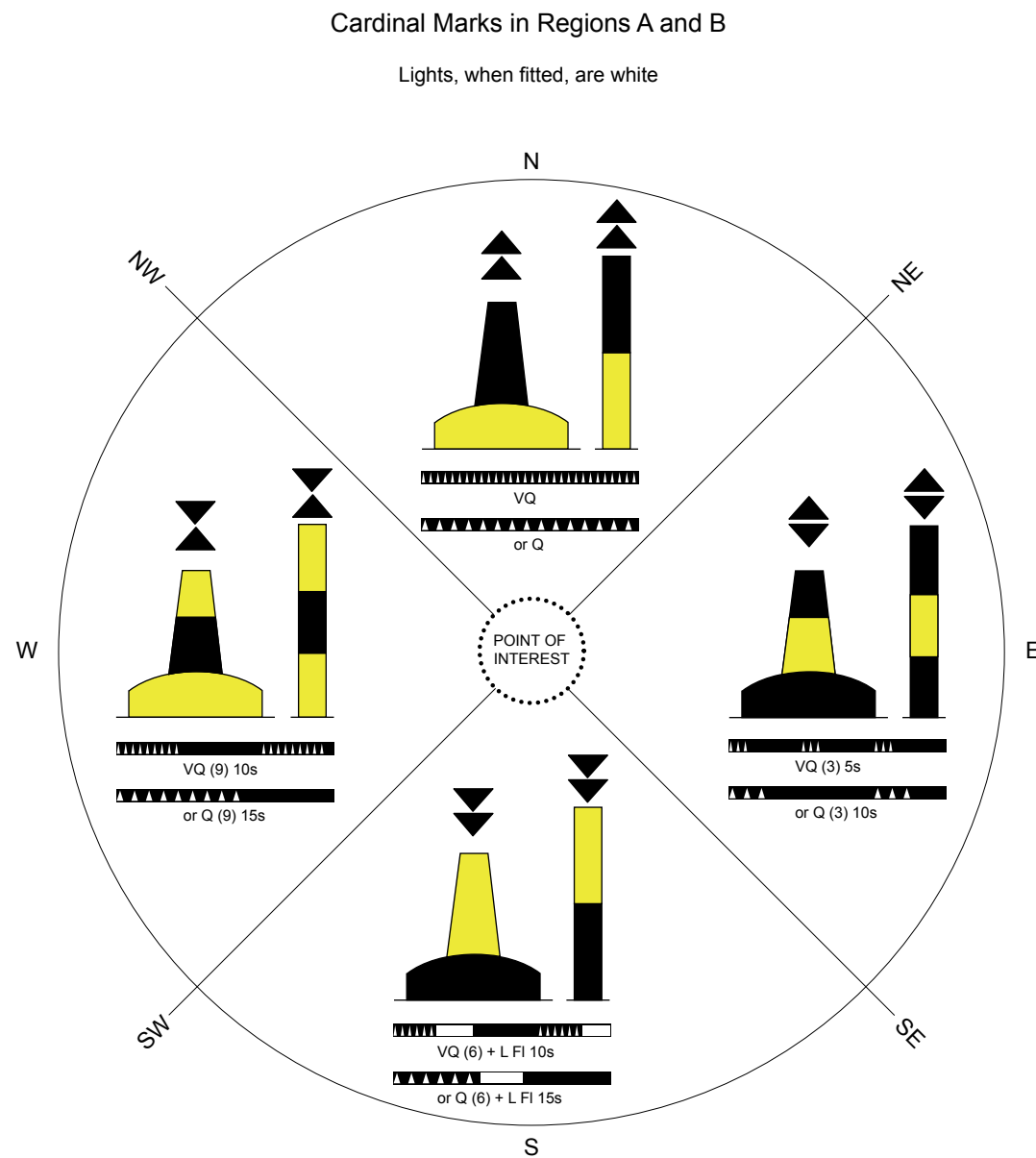
### Preferred Channel to Port



green with one red horizontal band	Color	red with one green horizontal band
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
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

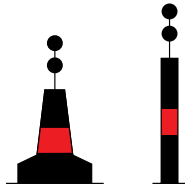




# IALA Maritime Buoyage System Appendix 1

## Regions A and B

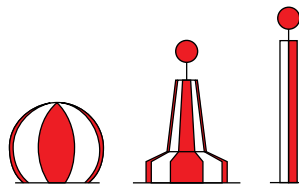
### Isolated Danger Marks



Color	black with one or more red horizontal band(s)
Buoy	optional, but not conflicting with lateral marks; pillar or spar preferred
Topmark (if any)	always fitted with double spheres

Lights (if any)	
Color	white
Rhythm	group flashing

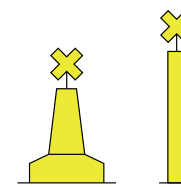
### Safe Water Marks



Color	red and white vertical stripes
Buoy	spherical, pillar or spar
Topmark (if any)	single red sphere

Lights (if any)	
Color	white
ISO	
Oc	
L Fl 10s	
Morse "A"	

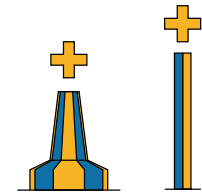
### Special Marks



Color	yellow
Buoy	optional, but not conflicting with lateral marks
Topmark (if any)	single yellow "X" shape

Lights (if any)	
Color	yellow
Fl Y	
Fl (4) Y	
May have any rhythm other than those used for white lights on cardinal, isolated danger or safe water marks.	

### New Danger Marks



Color	blue and yellow vertical stripes
Buoy	pillar or spar
Topmark (if any)	vertical/perpendicular yellow cross

Lights (if any)	
Color	alternating blue and yellow
Al Oc Bu Y 3s	

## Record of Corrections

Notice No.	Corrected on	Corrected by

Notice No.	Corrected on	Corrected by

Notice No.	Corrected on	Corrected by



## Section Key

<b>A</b>		Chart Number, Title and Marginal Notes	INT 500 412	Mercator Projection Scale 1:100,000 at Lat. 59°30'	53rd Ed., Feb. 2019	DEPTHS IN METERS
<b>B</b>		Positions, Distances, Directions and Compass		$\pm 15^\circ$	Magnetic Variation 4°30'W 2011 (8'E)	LOCAL MAGNETIC ANOMALY (see note)
<b>C</b>		Natural Features				
<b>D</b>		Cultural Features				
<b>E</b>		Landmarks				
<b>F</b>		Ports				
<b>H</b>		Tides and Currents				
<b>I</b>		Depths				
<b>J</b>		Nature of the Seabed				
<b>K</b>		Rocks, Wrecks and Obstructions				
<b>L</b>		Offshore Installations				
<b>M</b>		Tracks and Routes				
<b>N</b>		Areas and Limits				
<b>P</b>		Lights				
<b>Q</b>		Buoys and Beacons				
<b>R</b>		Fog Signals				
<b>S</b>		Radar, Radio and Satellite Navigation Systems				
<b>T</b>		Services				
<b>U</b>		Small Craft (Leisure) Facilities				



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