

PREFACE

Presentation of Two Symbology Sets

This edition of U.S. Chart No. 1 has a new name and a new look. Its title is now *Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts*. For the first time, U.S. Chart No. 1 presents both of the major symbology sets used for marine navigation.

As in previous editions, the symbols used on paper nautical charts produced by the National Oceanic and Atmospheric Administration (NOAA) and the National Geospatial-Intelligence Agency (NGA) and digital raster representations of those charts, such as NOAA Raster Nautical Charts (NOAA RNCs[®]), are presented in lettered sections organized in categories, such as Landmarks, Depths, and Lights. New in this edition is the inclusion of the corresponding symbols used to portray Electronic Navigational Chart (ENC) data on Electronic Chart Display and Information Systems (ECDIS) as specified by the International Hydrographic Organization (IHO).

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 nautical 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*.

INTRODUCTION

New Column Headers

The orientation of this edition of U.S. Chart No. 1 has been rotated 90° into a landscape format to allow two additional columns to be added to the right side of the page. These columns hold the ECDIS symbols corresponding to the paper chart symbols shown on the left side.

“INT 1” symbols, as specified in the *Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO*, appear in the second column from the left, after the symbol number. Any variations from INT 1 symbology that are used on charts produced by NOAA or NGA are shown in the NOAA, NGA and the “Other NGA” columns (columns 4a, 4b, and 5 respectively).

ECDIS symbols and their descriptions are shown in columns 6 and 7 respectively. 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 in column 7. The ECDIS symbols shown use the day color palette (see page 9).

When columns 4a and 4b are combined, this indicates that NOAA and NGA both use the same non-INT 1 symbol for that particular feature. When any of columns 4a, 4b, or 5 are blank, then the INT 1 symbol has been adopted for use by the organization for which that column applies.

The schematic layout following this introduction shows a typical symbol table page. It provides details about the table headers and the types of information presented in each of the columns.

Sample Chart Layouts

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

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 and mineral lease blocks, which are outlined in red.

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 Routing*. 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 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 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 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 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 www.nauticalcharts.noaa.gov/staff/chartspubs.html and NGA *Sailing Directions*, available through the “Publications” link on the NGA Maritime Safety Information portal at 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 msi.nga.mil/NGAPortal/MSI.portal. NOAA catalogs are available at www.nauticalcharts.noaa.gov/mcd/ccatalogs.htm. A list of the dates of the latest editions of NOAA charts is at www.nauticalcharts.noaa.gov/mcd/dole.htm.

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 msi.nga.mil/NGAPortal/MSI.portal.

Users may send corrections or comments to USChart1@noaa.gov or by mail to:

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

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.

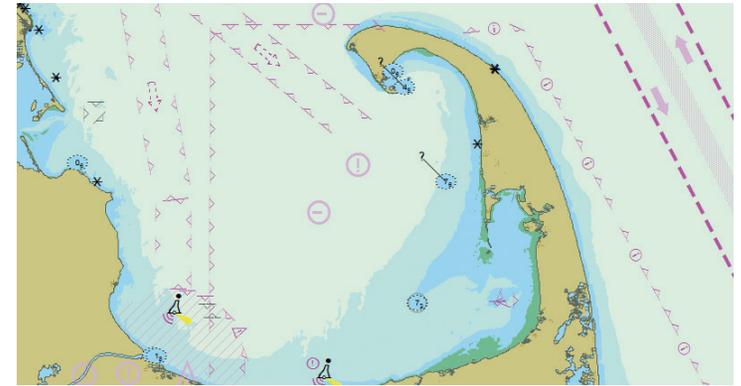
Each symbol is rendered in a different color appropriate for the lighting condition that the color table is meant for. This design provides maximum contrast for the display on a sunny day, as well as preserving night vision on a dimly lit bridge in the evening. This allows the mariner to look back and 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 portray Nantucket Island using each of the three color tables.

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

DAY



DUSK



NIGHT

