

INDEX TO SPECIAL NOTICE TO MARINERS PARAGRAPHS

Paragraph	Title	Page
1	The Prudent Mariner.....	I-1.3
2*	Nautical Chart Symbols and Abbreviations Information.....	I-1.4
3	Geographic Names Usage for NGA Products.....	I-1.4
4*	International Ice Patrol	I-1.4
5*	Special Warnings.....	I-1.5
6	Amver	I-1.5
7*	International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual.....	I-1.6
8	Special Reporting Instructions for U.S. Flag Vessels, Vessels Carrying War Risk Insurance, and Certain Other Designated Vessels (Formerly USMER Vessels).....	I-1.6
9	Urgency and Safety Signals.....	I-1.7
10	Submarine Emergency Identification Signals and Hazard to Submarines.....	I-1.7
11	Rules, Regulations and Proclamations Issued by Foreign Governments.....	I-1.8
12	Warning - Danger from Submarine Cables.....	I-1.8
13	Warning - Danger from Submarine Pipelines.....	I-1.9
14	Caution - Close Approach to Moored Offshore Aids to Navigation.....	I-1.9
15	Pipeline Laybarges and Jetbarges.....	I-1.9
16	Required Reporting of Damaged U.S. Aids to Navigation.....	I-1.9
17	Regulations for the Prevention of Pollution from Ships.....	I-1.9
18	Compliance with the Act to Prevent Pollution from Ships.....	I-1.14
19	International Safety Management Code Enforcement.....	I-1.15
20	Ballast Water Management for Control of Non-Indigenous Species.....	I-1.15
21	Vessel Security Regulations: MTSA and ISPS Code.....	I-1.15
22	Warning-Possible Danger from Unlabeled Intermodal Containers and Drums.....	I-1.16
23	Reporting of Dangers to Navigation.....	I-1.16
24*	Vessel Traffic Services and Vessel Movement Reporting System Center, Call Signs, Designated Frequencies, and Monitoring Areas.....	I-1.17
25	Seismic Surveys.....	I-1.21
26	United States - Caution Regarding Submarine Operations.....	I-1.21
27	Special Rules with Respect to Additional Station and Signal Lights for Navy Ships.....	I-1.22
28	United States Naval Vessels - Navigational Light Waivers-Distinctive Lights Authorized for Naval Vessels.....	I-1.22
29*	Traffic Separation Schemes, Areas to be Avoided, Recommended Tracks, and Other Routing Measures.....	I-1.23
30	Firing Danger Areas.....	I-1.25
31	Endangered Species (Whales and Sea Turtles) Eastern Seaboard.....	I-1.25
32*	Reporting Depth Information.....	I-1.31
33	Warning-Mined Areas.....	I-1.31
34	Mined Areas Reported.....	I-1.32
35	Minesweeping - Caution - Attention is Called to the Following Instructions.....	I-1.32

* Denotes significant change

INDEX TO SPECIAL NOTICE TO MARINERS PARAGRAPHS

Paragraph	Title	Page
36	United States - Explosive Ordnance - Warning - General.....	I-1.33
37	Caution - Oil Well Structures in Waters Contiguous to the U.S. and its Territories.....	I-1.34
38	Caution Regarding Approach of Single Vessels Toward Naval Formations and Convoys.....	I-1.35
39	National Geospatial-Intelligence Agency Distribution System.....	I-1.35
40*	International Hydrographic Organization (IHO).....	I-1.37
41	International Distress Signals.....	I-1.38
42*	Worldwide Navigational Warning Service (WWNWS).....	I-1.40
43	Weather Observation Reports.....	I-1.45
44	Radar Beacons (RACONs).....	I-1.46
45*	NAVTEX.....	I-1.46
46*	Satellite Detection of Distress Signals.....	I-1.47
47	HF and VHF Radiotelephone and Radiotelex Marine Safety Broadcasts.....	I-1.49
48*	Inland Navigation Rules.....	I-1.49
49	Guidelines for WGS Datum Conversion.....	I-1.49
50*	Anti-Shipping Activities Message.....	I-1.51
51	Caution on Announcement of New Charts and Publications.....	I-1.52
52	Global Positioning System (GPS) and Differential GPS (DGPS) Information.....	I-1.52
53	Digital Selective Calling Distress Alert.....	I-1.54
54	Vessel Squat in Shallow Water.....	I-1.54
55	Promulgation of Maritime Safety Information by U.S. Information Providers.....	I-1.56
56	Coast Guard Safety Information Available on Internet.....	I-1.58
57*	National Ocean Claims.....	I-1.58
58	U.S. Economic Sanctions.....	I-1.68
59	Maritime Industry Reporting of a Suspected or Actual Terrorist Incident.....	I-1.69
60	Electronic Vessel Notice of Arrival (eNOA) Submission.....	I-1.69
61	America's Waterway Watch.....	I-1.70
62	Loss of Inmarsat-C Safety Messages.....	I-1.70
63	Automatic Identification System.....	I-1.70
64	Cellular Phone use for Maritime Distress Notification.....	I-1.71
65	Discolored Water.....	I-1.71
66	International Maritime Bureau (IMB) Maritime Security Hotline.....	I-1.73
67*	Transportation Worker Identification Credential (TWIC).....	I-1.73
68*	Long Range Identification and Tracking (LRIT) System.....	I-1.73
69	Counter-Piracy.....	I-1.74
70*	Space Weather Impacts.....	I-1.74
71	Mariner's Safety Endangered When VHF Radio Distress Alerts By Digital Selective Calling (DSC) Lack Location And Identification Information.....	I-1.75

* Denotes significant change

(1) THE PRUDENT MARINER.**a. Warning On Use Of Floating Aids To Navigation and on Aids to Navigation in General and Fixing a Navigational Position.**

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestrial, and electronic means, such as Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights.

For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

b. Use of Foreign Charts.

In the interest of safe navigation, caution should be exercised in the use of foreign charts not maintained through U.S. Notice to Mariners.

Foreign produced charts are occasionally mentioned in NGA Sailing Directions and often times are used by the U.S. Navy when such charts may be of a better scale than U.S. produced charts. Mariners are advised that if or when such foreign charts are used for navigation it is their responsibility to maintain those charts from the Notice to Mariners of the foreign country producing the charts.

The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

c. Chart Notes Regarding Different Datums.

NGA's Digital Nautical Charts (DNC) are all built to WGS-84 standards; however, NGA paper charts have various datums. Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features.

Notes on hardcopy charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area which is based upon a different datum will differ from those of the first chart. The difference may be navigational significant, particularly when the scale of the chart is large. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NGA publications.

Positions obtained from satellite navigation systems, such as from GPS, are normally referred to the World Geodetic System 1984 (WGS-84) Datum. The differences between GPS satellite-derived positions and positions on some foreign charts cannot be determined: mariners are warned that these differences MAY BE SIGNIFICANT TO NAVIGATION and are therefore advised to use alternative sources of positional information, particularly when closing the shore or navigating in the vicinity of dangers.

d. Bilateral Charts

NGA, through international agreements, has adopted select trusted foreign hydrographic office charts into its paper standard nautical chart global portfolio. These charts, which are duplicates of foreign copyrighted charts, must be in English, use metric units, and reference WGS-84 datum. Each chart has an NGA chart number, a National Stock Number (NSN), and a bar code added in the margin. The resultant chart product is known as an NGA "bilateral chart" and is marked as "Distribution Limited," available only to DoD and Government users. These charts are then maintained with corrections published in the US Notice to Mariners as any other NGA chart. NGA bilateral charts currently exist in waters of Australia, Canada, Japan, and the UK. Commercial users of NGA paper charts for these areas who may require a chart that is not available to them will need to

(1) THE PRUDENT MARINER. (Continued).

purchase the original foreign chart from the respective foreign hydrographic office or one of their chart vendors. They will then have to maintain that chart using the Notice to Mariners published by that country to keep the chart current and safe for navigation. Updated information and a complete listing of all NGA bilateral charts is reissued weekly in the U.S. Notice to Mariners (Section III) which are available on the NGA Maritime Safety Website at: <https://msi.nga.mil/NGAPortal>.
(Repetition NTM 1(1)19) (NGA/SFHG)

(2) NAUTICAL CHART SYMBOLS AND ABBREVIATIONS INFORMATION.

Symbols and abbreviations approved for use on all paper and electronic navigational charts published by the National Geospatial-Intelligence Agency (NGA) and the National Ocean Service (NOS) are contained in the April 15, 2019 edition of U.S. Chart No. 1, Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts. This publication, in PDF format, is available through electronic access at the Maritime Safety Web site: (<https://msi.nga.mil/Publications/Chart1>) and from the “U.S. Chart No. 1” page of the NOAA Office of Coast Survey Web site at: <http://www.nauticalcharts.noaa.gov/publications/us-chart-1.html>. New in this edition are removal of codes in the Buoy, Beacons section and the addition of different V-AIS symbols.

This edition updates the descriptions and depictions of the basic nautical chart elements and symbols described in the Chart Specifications of the IHO published by the International Hydrographic Organization, on charts produced by NOAA, NGA and NGA reproductions of foreign navigational charts. Lastly, the document shows the symbols specified by the IHO for the portrayal of Electronic Navigational Chart (ENC) data on Electronic Chart Display and Information Systems.

Buoys and Beacons of the IALA Buoyage System Regions A and B are illustrated in Appendix 1, including light characteristics in full color.
(Supersedes NTM 1(2)19) (NGA/SFHG)

(3) GEOGRAPHIC NAMES USAGE FOR NGA PRODUCTS.

Wherever possible, names used on NGA charts and in NGA publications are in the form approved by the United States Board on Geographic Names. Generally, local official spellings are used for those features entirely within a single sovereignty, while names of countries and those features which are common to two or more countries or which lie beyond single sovereignty carry Board-approved conventional spellings (i.e., names in common English language usage). When alternate names would be of value to the user, they may be shown for information purposes within parentheses. Important individual name changes are made to all revised charts as the opportunity permits. Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.
(Repetition NTM 1(3)19) (NGA)

(4) INTERNATIONAL ICE PATROL.

The North American Ice Service (NAIS), a partnership comprised of the International Ice Patrol (IIP), the Canadian Ice Service (CIS), and the U.S. National Ice Center (NIC), provides year-round maritime safety information on iceberg and sea ice conditions in the North Atlantic Ocean. The daily NAIS Iceberg Limit, valid at 0000Z, along with the daily Sea Ice Limit, will be distributed as a NAVAREA IV warning in the format of a text Iceberg Bulletin and as a graphic Iceberg Chart.

The purpose of the NAIS Iceberg Bulletin and Chart is to advise mariners of the estimated iceberg extent within the region. On the Chart, numbers within each 1 degree by 1 degree grid sector inside the Iceberg Limit are intended to provide mariners an awareness of the relative density of icebergs. IIP produces the NAIS iceberg warning products from January through August when icebergs typically threaten the transatlantic shipping lanes, and CIS produces the products from September through December when icebergs typically only threaten Canadian coastal waters. To access the current iceberg warnings as well as more information on the Iceberg Bulletin and Iceberg Chart, visit: <https://www.navcen.uscg.gov/?pageName=iipProducts>.

NAIS reconnaissance is conducted in the North Atlantic Ocean with a focus on the Grand Banks of Newfoundland and the east coast of Labrador due to the location of the transatlantic shipping lanes. Ice conditions south of Greenland are not monitored by NAIS. For iceberg conditions off of Greenland, visit the Danish Meteorological Institute's website at: <https://www.dmi.dk/products-in-english/>. While NAIS strives to be as accurate as possible in reporting the presence of icebergs to mariners, it is not possible to ensure that all icebergs are detected and reported. There is no substitute for due vigilance and prudent seamanship, especially when operating near sea ice and icebergs.

(4) INTERNATIONAL ICE PATROL SERVICE. (Continued).

Reports of icebergs in the North Atlantic originate from various sources, including passing ships, reconnaissance flights, and space-borne reconnaissance. Once position, time, size, and shape of icebergs detected are received, the data is entered into a computer model that predicts iceberg drift and deterioration. As the time after detection increases, so does the uncertainty in estimated positions. This uncertainty is taken into account when the Iceberg Limit is determined.

If an iceberg or radar target is detected and reported outside the published NAIS Iceberg Limit, a Navigational Warning (NAVWARN) will be sent by the Canadian Coast Guard Marine Communications and Traffic Service (MCTS) and an urgent NAVAREA IV message will be distributed on SafetyNET via the U.S. National Geospatial-Intelligence Agency (NGA) as the NAVAREA IV Coordinator. These warnings will remain in effect for 24 hours. Iceberg warning products will be revised shortly after notification between 1200Z and 0000Z or by 1400Z if reported between 0000Z and 1200Z.

Ships are encouraged to immediately report sightings of icebergs or stationary radar targets that may likely be icebergs to the nearest Canadian Coast Guard MCTS Station or through INMARSAT using Service Code 42, as there is no charge when using this code. Vessels participating in a Voluntary Observing Ship (VOS) program should continue to report weather and sea surface temperature (SST) to their respective programs. Vessels interested in providing weather and SST reports to the U.S. National Oceanic and Atmospheric Administration's VOS program can contact: vos@noaa.gov or visit: www.vos.noaa.gov for guidance.

When making iceberg reports, please include SHIP NAME and CALL SIGN, ZULU TIME, SHIP POSITION (latitude, longitude), COURSE, SPEED, VISIBILITY, ICEBERG/RADAR TARGETS POSITION (Specify either the geographic coordinates or range/bearing from ship's position), ZULU TIME OF SIGHTING, METHOD OF DETECTION (Visual, Radar, or Both), LENGTH (in meters), SHAPE OF ICEBERG (See Table 3), and VESSEL CONTACT INFORMATION. If possible, please attach any photographs taken of the iceberg to the report.

(Supersedes NTM 1(4)19)

(USCG)

(5) SPECIAL WARNINGS AND MARAD ADVISORIES REPLACED BY U.S. MARITIME ADVISORY SYSTEM.

As of 26 January 2017, special warnings issued by the Department of State and MARAD Advisories issued by the U.S. Maritime Administration have been replaced by the new U.S. Maritime Advisory System (see below). New alerts and advisories issued by the U.S. Maritime Advisory System are now available from the Maritime Security Communications with Industry (MSCI) Web portal at:

<https://www.marad.dot.gov/environment-and-safety/office-of-security/msci/>.

(Supersedes NTM 1(5)19)

(DEPT. OF STATE, U.S. MARITIME ADMINISTRATION)

(6) AMVER.

The Internet Web site for Amver is: www.amver.com. The Amver system, maintained and administered by the United States Coast Guard, with the cooperation of coast radio stations of many nations, is a global ship reporting system for search and rescue (SAR) which provides important aid to the development and coordination of SAR efforts in the offshore areas of the world. Vessels of all nations, on the high seas, are encouraged to voluntarily send movement (sailing) reports and periodic position reports to the Amver Center located in Martinsburg, West Virginia, via selected radio stations and coast earth stations.

Information from these reports is entered into a computer database which is used to generate and maintain dead reckoning positions. Characteristics of vessels which are valuable for determining SAR capability are also entered into the computer from available sources of information. Information concerning the predicted location and SAR characteristics of each vessel estimated to be in the search area of interest is made available, upon request and only to recognized SAR agencies of any nation, or vessels needing assistance. Predicted locations are only disclosed for reasons related to maritime safety.

Messages sent within the Amver system are at no cost to the ship owner. Benefits to shipping include: improved chances of aid in emergencies, reduced number of calls for assistance by vessels not favorably located to assist, and reduced time lost by vessels responding to calls for assistance. An Amver participant is under no greater obligation to render assistance during an emergency than a vessel that is not participating.

Instructions on participation in the Amver system are available on the Web site: <http://www.amver.com>.

(6) AMVER. (Continued).

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AMVERSEAS is a comprehensive real-time ship and environmental data acquisition and transmission system, which acquires several types of data such as **AMVER** (Automated Mutual assistance Vessel Rescue system), **Met** (Meteorological), **TSG** (ThermoSalinoGraph), and **XBT** (eXpendable Bathy Thermograph) messages.

AMVER reports can be sent at no cost to the ship if sent via INMARSAT-C, using the AMVER/SEAS software and the designated Vizada land earth stations (LES 004-104-204-304) and the proper Special Access Code (SAC). AMVER reports sent in text format should use **SAC 43** and in BINARY format, **SAC SEAS** should be used. AMVER reports can also be sent via email, which the ship would be responsible for transmission costs. Send AMVER reports via email to: amvermsg@amver.com.

AMVER/SEAS software requirements: Windows based PC with operating system of Vista, Windows XP, Windows 7, Windows 2000, Windows NT, Windows 98, Windows 95 (works best with 200 MHz Pentium or better); video card that supports 800 x 600 pixels, with 65K colors or better; 10 MB of free hard disk space, and a 3.5 inch floppy disk drive or thumb drive. Additionally, an Inmarsat Standard C transceiver with a 3.5 inch floppy disk drive or thumb drive and capability to transmit a binary file is required as well.

You may get asked to install prerequisites if your computer does not have Visual C++ 2008 installed. The NET Framework 3.5 SP1, and the Visual C++ Runtime Libraries (x86) component will be installed. This component is required to run AMVERSEAS v 9.0 modules. Please choose **always Accept** and/or **Install**.

To request AMVERSEAS software send an email to: vos@noaa.gov.
(Repetition NTM 1(6)19)

(USCG)

(7) INTERNATIONAL AERONAUTICAL AND MARITIME SEARCH AND RESCUE (IAMSAR) MANUAL.

The 2019 edition of the International Aeronautical and Maritime Search and Rescue (IAMSAR) became applicable 1 July 2019. Instead of publishing future amendments, a complete new edition will be published every three years with the next edition to be in 2022. IAMSAR Manual, Volume III, Mobile Facilities is to be carried onboard Safety Of Life At Sea (SOLAS) compliant merchant vessels and intended to be carried aboard other vessels, aircraft and rescue units to help with performance of a search, rescue or on-scene coordinator function, and with aspects of search and rescue that pertain to their own emergencies. The 2019 edition of Volume III had extensive restructuring of the document but not major change to the text, and includes "Action Cards" for use in "Own Emergencies" and for "Rendering Assistance". This Manual can be purchased direct from the International Maritime Organization (IMO) or from selected book sellers around the world as provided under "Publication Catalogue" on the IMO web page: www.imo.org.

(Supersedes NTM 1(7)19)

(USCG)

(8) SPECIAL REPORTING INSTRUCTIONS FOR U.S. FLAG VESSELS, VESSELS CARRYING WAR RISK INSURANCE, AND CERTAIN OTHER DESIGNATED VESSELS (Formerly USMER Vessels).

According to a U.S. Maritime Administration regulation effective 1 August 1983, U.S. flag vessels and foreign-flag "War Risk" vessels must report and regularly update their voyages per the Amver reporting criteria.

Who Must Report

- A. U.S.-flag vessels of one thousand gross tons or more, operating in foreign commerce.
- B. Foreign-flag vessels of one thousand gross tons or more, for which an Interim War Risk Insurance binder has been issued under the provisions of Title XXI, Merchant Marine Act, 1936.

(8) SPECIAL REPORTING INSTRUCTIONS FOR U.S. FLAG VESSELS, VESSELS CARRYING WAR RISK INSURANCE, AND CERTAIN OTHER DESIGNATED VESSELS (Formerly USMER Vessels). (Continued).

Who May Report

Other merchant vessels, when approved by MARAD, whose owners may have chosen to participate and to have voyage information forwarded to MARAD. (Other merchant vessels may participate in Amver, but information provided by them will be released only for safety purposes or to satisfy certain advance arrival notification requirements of Title 33, Code of Federal Regulations.)

When to Report

- A. Sailing plans may be sent days or even weeks prior to departure, but no later than departure.
- B. Departure Report must be sent as soon as practicable upon leaving port.
- C. Position Report must be sent within twenty-four hours of departure, and subsequently no less frequently than every forty-eight hours until arrival.
- D. Arrival Report must be sent immediately prior to or upon arrival at the Port of Destination.
- E. Reports are to be sent during the Radio Officer's normal duty hours, but no later than the above schedule.
- F. At the discretion of the vessel, reports may be sent more frequently than the above schedule, as, for example, in heavy weather or under other adverse conditions.

(Repetition NTM 1(8)19)

(USCG)

(9) URGENCY AND SAFETY SIGNALS.

The radiotelephone urgency signal is the group of words PAN PAN (pronounced "Panne-Panne") spoken three times. The urgency call format and the urgency signal indicate that the calling station has a very urgent message to transmit concerning the safety of a mobile unit or a person. The call has priority over all other communications except distress calls and it should be used in all urgent cases in which the sending out of the SOS or MAYDAY signal is not fully justified.

The urgency signal and message may be addressed to all stations or to a specific station. The message must be canceled as soon as any action is no longer necessary.

The radiotelephone SAFETY signal "SECURITE" (pronounced "SAY-CUR-E-TAY") spoken three times, is provided for reporting hazards to navigation or meteorological warnings including dangers regarding ice, derelicts, tropical storms, etc. Transmissions bearing the safety signal preface are accorded priority over all other transmission less those bearing the distress or urgency preface.

(Repetition NTM 1(9)19)

(USCG)

(10) SUBMARINE EMERGENCY IDENTIFICATION SIGNALS AND HAZARD TO SUBMARINES.

1. U.S. submarines are equipped with signal ejectors which may be used to launch identification signals, including emergency signals. Two general types of signals may be used: smoke floats and flares or stars. A combination signal which contains both smoke and flare of the same color may also be used. The smoke floats, which burn on the surface, produce a dense, colored smoke for a period of fifteen to forty-five seconds. The flares or stars are propelled to a height of three hundred to four hundred feet from which they descend by small parachute. The flares or stars burn for about twenty-five seconds. The color of the smoke or flare/star has the following meaning:
 - a) GREEN-Used under training exercise conditions only to indicate that a torpedo has been fired or that the firing of a torpedo has been simulated.
 - b) YELLOW-Indicates that submarine is about to come to periscope depth from below periscope depth. Surface craft terminate antisubmarine counter-attack and clear vicinity of submarine. Do not stop propellers.
 - c) RED-Indicates an emergency condition within the submarine and that it will surface immediately, if possible. Surface ships clear the area and stand by to give assistance after the submarine has surfaced. In case of repeated red signals, or if the submarine fails to surface within reasonable time, she may be assumed to be disabled. Buoy the location, look for submarine buoy and attempt to establish sonar communications. Advise U.S. Naval authorities immediately.
 - d) WHITE-Two white flares/smoke in succession indicates that the submarine is about to surface, usually from periscope depth (non-emergency surfacing procedure). Surface craft should clear the vicinity of the submarine.
2. A Submarine Marker Buoy consists of a cylindrically shaped object about 3 feet by 6 feet with connecting structure and is painted international orange. The buoy is a messenger buoy with a wire cable to the submarine; this cable acts as a down-haul line for a rescue chamber. The buoy may be accompanied by an oil slick release to attract attention. A submarine on the bottom in distress and unable to surface will, if possible, release this buoy. If an object of this description is sighted, it should be investigated and U.S. Naval Authorities advised immediately.

(10) SUBMARINE EMERGENCY IDENTIFICATION SIGNALS AND HAZARD TO SUBMARINES. (Continued).

3. A Submarine Emergency Position Indicating Radio Buoy (SEPIRB) is a serialized signal identifying the submarine and hatch from which to conduct rescue operations.
4. Transmission of the International Distress Signal (SOS) will be made on the submarine's sonar gear independently or in conjunction with the red emergency signal as conditions permit.
5. Submarines may employ any or all of the following additional means to attract attention and indicate their position while submerged:
 - a) Release of dye marker.
 - b) Ejection of oil.
 - c) Release of air bubble.
 - d) Pounding on the hull.
6. United States destroyer-type vessels in international waters will, on occasion, stream a towed underwater object at various speeds engaged in naval maneuvers. All nations operating submarines are advised that this underwater object in the streamed condition constitutes a possible hazard to submerged submarines.

(Repetition NTM 1(10)19)

(U.S. NAVY)

(11) RULES, REGULATIONS AND PROCLAMATIONS ISSUED BY FOREIGN GOVERNMENTS.

The National Geospatial-Intelligence Agency, as a means of promoting maritime safety, includes in its publications rules, regulations, and proclamations affecting navigation as issued by foreign nations.

In this connection, it should be clearly understood that the publication of such material is solely for information relative to the navigational safety of shipping, and in no way constitutes a legal recognition by the United States of the international validity of any rule, regulation, or proclamation so published. While every effort is made to publish all such information, the National Geospatial-Intelligence Agency cannot assume any liability for failure to publish any particular rule, regulation, proclamation, or the details thereof.

(Repetition NTM 1(11)19)

(NGA/SFHG)

(12) WARNING - DANGER FROM SUBMARINE CABLES

Certain submarine cables are used for telecommunications functions while others are used for power transmission. All power cables and most telecommunications cables carry dangerous high voltages. Damaging or severing a submarine cable, whether a telecommunications cable or a power cable, may, in some circumstances be considered as a national disaster and very severe criminal penalties may apply. Electrocution, with injury or loss of life, could occur if any cables carrying high voltage are broached. Depending on whether the cable is primarily for power or telecommunications, damage may result in power cuts, loss of voice, data transfer or internet connectivity. In these circumstances, cables are considered as critical infrastructure.

In view of the serious consequences resulting from damage to submarine cables, vessel operators should take special care when anchoring, fishing, mining, dredging, or engaging in underwater operations near areas where these cables may exist or have been reported to exist. In order to minimize the risk of such damage as much as possible, vessels should avoid any such activity at a minimum distance of 0.25-nautical mile¹ on either side of submarine cables.

Mariners are also warned that the seafloor where cables were originally buried may have changed and cables become exposed; therefore particular caution should be taken when operating vessels in areas where submarine cables exist especially where the depth of water means that there is a limited under-keel clearance.

Vessels fouling a submarine cable should not attempt to clear or raise the cable due to the high possibility of damaging the cable. No attempt should be made to cut a cable and anchors or gear that cannot be cleared should be slipped. Before any attempt to slip or cut gear from the cable is made, the cable should first be lowered to the seafloor. Note that there is a risk of capsizing smaller vessels (primarily fishing vessels) if they attempt to bring a cable to the surface. Following an incident of fouling a cable, a vessel should immediately notify the local responsible authority of the position, type, and amount of gear remaining on the seafloor. In inland areas or along the coast, warning signs or marker beacons are often erected to warn the mariner of the existence of submarine cables.

Incidents involving the fouling of submarine cables should be reported at the shortest possible notice to the responsible authorities² who should be advised as to the nature of the problem and the position of the vessel.

(Repetition NTM 1(12)19)

(USCG)

1. Each responsible authority can set this distance to a value that they feel is appropriate.

2. The responsible authorities can be listed here, as well as contact methods (telephone, facsimile, VHF, e-mail, internet, etc.) and required information.

(13) WARNING - DANGER FROM SUBMARINE PIPELINES.

Submarine pipelines pass beneath various navigable waterways throughout the world. Installation of new pipelines may be reported in the Notice to Mariners; their locations may or may not be charted. Where feasible, warning signs are often erected to warn the mariners of their existence. In view of the serious consequences resulting from damage to submarine pipelines, vessel operators should take special care when anchoring, fishing, or engaging in underwater operations near areas where these pipelines may exist or have been reported to exist.

Many pipelines carry natural gas under high pressure or petroleum products. Fire or explosion, with injury or loss of life or a serious pollution incident, could occur if they are penetrated.

Vessels fouling a pipeline should attempt to clear without undue strain. Anchors or gear that cannot be cleared should be slipped; no attempt should be made to cut a pipeline.

(Repetition NTM 1(13)19)

(USCG)

(14) CAUTION - CLOSE APPROACH TO MOORED OFFSHORE AIDS TO NAVIGATION.

Courses should invariably be set to pass these aids with sufficient clearance to avoid the possibility of collision. Errors of observation, current and wind effects, other vessels in the vicinity, and defects in steering gear may be, and have been, the cause of collisions. Experience shows that buoys cannot be safely used as leading marks to be passed close aboard, and should always be left broad off the course whenever sea room permits.

It should be borne in mind that most large buoys are anchored to a very long scope of chain and, as a result, the radius of their swinging circle is considerable. The charted position is the approximate location. Furthermore, under certain conditions of wind and current, they are subject to sudden and unexpected sheers which are certain to hazard a vessel attempting to pass close aboard.

Further warning on use of floating aids to navigation for position taking is contained in paragraph 1 of this Notice. When approaching an offshore light structure, large navigational buoy, or a station on a submarine site, on radio bearings, the risk of collision will be lessened by ensuring that the radio bearing does not remain constant.

(Repetition NTM 1(14)19)

(USCG)

(15) PIPELINE LAYBARGES AND JETBARGES.

With the increased number of pipeline laying operations in the Gulf of Mexico and other areas, operators of all types of vessels should be aware of the dangers of passing close aboard, close ahead, or close astern of a jetbarge or pipelaying barge. Pipelaying barges and jetbarges usually move at 1/2 knot or less and have anchors which extend out approximately 3500-5000 feet in all directions, and may be marked by lighted anchor buoys. The exposed pipeline behind the pipelaying barge and the areas in the vicinity of anchors are hazardous to navigation and should be avoided. The pipeline and anchor cables also represent a submerged hazard to navigation. It is suggested, if safe navigation permits, for all types of vessels to pass well ahead of the pipelaying barge or well astern of the jetbarge. The pipelaying barge, jetbarge, and attending vessels may be contacted on VHF-FM Channel 16 for passage instructions.

(Repetition NTM 1(15)19)

(USCG)

(16) REQUIRED REPORTING OF DAMAGED U.S. AIDS TO NAVIGATION.

It frequently occurs that aids to navigation are collided with, causing damage and displacement, or complete loss, without the knowledge of the Coast Guard District Commander. The replacement or repair of such aids is consequently often not made as promptly as desired. This situation results in diminished protection for marine traffic, and is attributable in large part to the failure of vessel operators to furnish notice of these collisions to the nearest local or district office of the U.S. Coast Guard, or to Coast Guard Headquarters, as required by law and regulation. The prompt submission of notice of any marine casualty or accident, including damage or destruction of aids to navigation, is required by the Marine Investigation Regulations, Section 4.05-20 of Title 46, Code of Federal Regulations, with penalty for noncompliance.

(Repetition NTM 1(16)19)

(USCG)

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS.**International Convention for the Prevention of Pollution by Ships - MARPOL 73/78:**

In 1973, the International Maritime Organization (IMO) adopted the International Convention for the Prevention of Pollution by Ships and subsequently modified it by Protocol in 1978. The Convention is widely known as MARPOL 73/78. Its objective is to limit ship-borne pollution by restricting operational pollution and reducing the possibility of accidental pollution. MARPOL specifies standards for stowing, handling, shipping, and transferring pollutant cargoes, as well as standards for

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS. (Continued).

discharge of ship-generated operational wastes. Acceptance of the convention by a national government obliges them to make the requirements part of domestic law.

MARPOL 73/78 consists of six separate Annexes, each set out in regulations covering the various sources of ship-generated pollution. Annex I and II are mandatory for all signatory nations to MARPOL while Annexes III, IV, V, and VI are optional.

Currently, the U.S. is signatory to Annexes I, II, III, V, and VI. Annexes I, II, V, and VI have been incorporated into U.S. law by the Act to Prevent Pollution from Ships (APPS) and implemented within 33 USC 1901 and 33 CFR 151. The U.S. incorporates Annex III by the Hazardous Materials Transportation Act (HMTA) implemented within 46 USC 2101 and 49 CFR 171-174 and 176. Although the U.S. has not ratified Annex IV, the U.S. has equivalent regulations for the treatment and discharge standards of shipboard sewage – the Federal Water Pollution Control Act (FWPCA) as amended by the Clean Water Act and implemented by 33 USC 1251 and 33 CFR 159.

The table below indicates each Annex by pollution source, its title, U.S. signatory status, and implementing legislation, law, and/or regulations and applicable Coast Guard guidance. A brief discussion of the major provisions of each MARPOL Annex follows.

International Convention for the Prevention of Pollution by Ships (MARPOL 73/78)

Annex	Pollution Source	Title	U.S. Signatory	Implementing Legislation/Regulations
I	Oil	Regulations for the Prevention of Pollution by Oil	Yes	Act to Prevent Pollution from Ships of 1980 (APPS) 33 U.S.C. § 1901 – 1912 33 CFR Parts 151, 155, 156, 157 Marine Safety Manual (MSM) Vol. II NVIC 6-94 CG-3PCV Policy Ltr 06-09 G-MOC Policy Ltr 04-011, Rev. 1 G-PCV Policy Ltr 06-01
II	NLS	Regulations for the Control of Pollution by Noxious Liquid Substances (NLS) in bulk	Yes	APPS 33 U.S.C. § 1901 – 1912 33 CFR Parts 151 MSM, Vol. II NVIC 03-06, 03-04
III	Packaged Substances	Regulations for the Prevention of Pollution by Harmful Substances in Packaged Form	Yes	Hazardous Materials Transportation Act of 1974 (HMTA) 49 U.S.C. § 1801 – 1813 46 CFR 148 49 CFR Parts 171-174 & 176 MSM, Vol. II
IV	Sewage	Regulations for the Prevention of Pollution by Sewage from Ships	No	Federal Water Pollution Control Act (FWPCA) as amended by the Clean Water Act (CWA) 33 U.S.C. § 1251 33 CFR 159 MSM, Vol. II NVIC 01-09
V	Garbage	Regulations for the Prevention of Pollution by Garbage from Ships	Yes	APPS 33 U.S.C. § 1901 – 1912 33 CFR Parts 151 MSM, Vol. II
VI	Air	Regulations for the Prevention of Air Pollution from Ships	Yes	APPS 33 U.S.C. § 1901 – 1912 EPA Engine Emissions: 40 CFR 94, 1042, 1043, 1068; CG-543 Policy Ltr 09-01

Annex I addresses oil pollution prevention. Annex I is applicable to oceangoing tankers over 150 gross tons and all other oceangoing ships over 400 gross tons. Requirements include oily waste discharge limitations, oily-water separating equipment, monitoring and alarm systems for discharges from cargo areas, cargo pump rooms and machinery space bilges, construction of cargo and ballast tanks, crude oil washing and inert gas systems, as well Shipboard Oil Pollution Emergency Plans (SOPEP).

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS. (Continued).

The U.S. implements MARPOL 73/78 Annex II by the Act to Prevent Pollution from Ships (APPS), codified within 33 USC 1901. The implementing regulations are in 33 CFR 151.

Ships to which Annex I MARPOL 73/78 is applicable are also required to have an International Oil Pollution Prevention (IOPP) Certificate. Annex I, Chapter 2 and 33 CFR 151.19. Issuance of the IOPP Certificate verifies that the vessel is in compliance with the requirements of Annex I and that any required equipment is on board and operational.

Annex I also requires each vessel to maintain an Oil Record Book to record all oil transfers and discharges. Annex I, Regulation 17 & 36, 33 CFR 151.25. The Coast Guard's most recent update to the Oil Record Book was in 2007. A copy is available to all U.S. vessel owners and operators subject to the Oil Record Book requirements through any local Captain of the Port/Officer in Charge, Marine Inspection. Vessel operators are encouraged to obtain and use the latest edition of the Oil Record Book (Rev 01-07).

Annex II addresses discharge criteria and measures for controlling pollution caused by Noxious Liquid Substances (NLS) carried in bulk. Annex II is applicable to oceangoing vessels and non-self propelled ocean-going ships that carry NLS cargoes. These regulations limit at-sea discharges of NLS residue. It requires vessels to discharge its NLS residues to reception facilities, except under specified conditions. The Annex II requirements include discharge restrictions for various

classes of cargo residues; the maintenance of a Cargo Record Book for recording all NLS cargo and residue transfers and discharges; and a Procedures and Arrangements Manual describing the correct procedures for off loading and pre-washing cargo tanks.

The U.S. implements MARPOL 73/78 Annex II by the Act to Prevent Pollution from Ships (APPS), codified within 33 USC 1901. The implementing regulations are in 33 CFR 151.

Since April of 1987, Annex II NLS cargoes have been classified in one of four categories: A, B, C, or D. As of January 1, 2007, the IMO revised Annex II to incorporate new classification rules that changed the criteria for assigning values for both the ship type and pollution category. For further details of these new classifications and vessel compliance, see Navigation and Vessel Inspection Circular (NVIC) 03-06.

The existing pollution categories A, B, C, D, and III have been replaced by X, Y, Z and Other Substances (OS). Category X has the most severe pollution hazards, category Y has moderate pollution hazards, category Z has low pollution hazards and category OS has no hazards when discharged from tank cleaning or de-ballasting operations. Category X and other substances that tend to solidify in tanks must be pre-washed in port under the supervision of a Pre-wash Surveyor prior to departure from the off loading terminal. Authorized vessel discharges of NLS residue at sea must be below the water line. Tanks that carry Category Y and Z NLS cargoes must be tested to ensure that after tank stripping only a minimal amount of residues will remain. Reception facilities must be able to assist in cargo stripping operations by reducing backpressure during the final stages of off loading.

Terminals and ports receiving oceangoing tankers, or any other oceangoing ships of 400 GT or more, carrying residues and mixtures containing oil, or receiving oceangoing ships carrying NLS cargoes, are required to provide adequate reception facilities for the wastes generated. Coast Guard Captains of the Port issue a Certificate of Adequacy to terminals or ports to show that they comply with federal reception facility requirements.

Resolution A.673 (16) for Offshore Supply Vessels:

As discussed above, on October 15, 2004, the Marine Environmental Protection Committee (MEPC) of the International Maritime Organization (IMO) adopted revisions to Annex II and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code). Those amendments entered into force January 1, 2007.

The 2004 revisions to Annex II included changes to Regulation 11. The revised language of Regulation 11.2 of Annex II requires that for the carriage of NLS cargoes listed in Chapter 17 of the IBC Code by those vessels other than chemical tankers or liquefied gas carriers, Flag Administrations shall establish appropriate measures to minimize the uncontrolled discharge of NLS cargoes into the sea. Furthermore, Regulation 11.2 states that each Flag Administration's measures shall be based upon "Guidelines" developed by the IMO. In the associated footnote to the term "Guidelines," reference is made specifically to Resolution A.673 (16).

Resolution A.673 (16) was adopted on October 19, 1980, and later amended by Resolution MSC.236 (82) on December 1, 2006. It provides an alternative to the IBC Code for the design, construction, and operation of OSVs. It is intended to permit limited quantities of NLS substances to be transported in bulk in OSVs with minimum risk to the vessel, its crew, and the environment. The basic philosophy of Resolution A.673 (16) is to apply standards contained in the IBC Code to the extent that is practicable and reasonable, taking into account the unique design features and service characteristics of these vessels, as well as to limit the quantity of hazardous and noxious liquid substances carried onboard OSVs.

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS. (Continued).

The U.S. implementation of A.673 (16) is found in CG-522 Policy Letter 09-01. This policy has been developed by the Coast Guard, in consultation with the OSV industry, to provide guidance to owners, operators, and designers for the design, construction, and operation of U.S. flagged OSVs. It is intended to resolve any conflicts until such time as relevant U.S. regulations are more completely harmonized with the revised international standards.

Annex III applies to all ships carrying harmful substances in packaged forms, or in freight containers, portable tanks or road and rail tank wagons. Annex III requires standards on packaging, marking, labeling, documentation, stowage, quantity limitations, exceptions and notifications for preventing or minimizing pollution by harmful substances.

The U.S. implements MARPOL 73/78 Annex III under the Hazardous Materials Transportation Act (HMTA), codified within 46 USC 2101. The implementing regulations are in 49 CFR 171 -174 and 176.

For the purpose of Annex III, “harmful substances” are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code), also defined in U.S. domestic regulations under 49 CFR 171.4 and 171.8. On 5 November 1992, the U.S. Research and Special Programs Administration (RSPA) amended the Hazardous Materials Regulations (HMR, 49 CFR 100-177) to list and regulate these marine pollutants in all modes of transportation. Under the HMR, marine pollutants are listed in a separate appendix, (Appendix B to 49 CFR 172.101 – List of Marine Pollutants). In accordance with 49 CFR 172.322, “marine pollutant mark” is required for those materials. The marine pollutant mark is in addition to any existing labels or placards designating a hazardous substance.

Annex IV applies to discharges of sewage into the sea. Annex IV applies to all ships over 400 gross tons engaged in international voyages or to ships less than 400 gross tons certified to carry more than 15 persons. The Annex requires the installation of holding tanks or approved sewage treatment devices.

The U.S. did not ratify Annex IV. Rather, the U.S. has equivalent regulations for the treatment and discharge standards of shipboard sewage – the Federal Water Pollution Control Act (FWPCA) as amended by the Clean Water Act codified in 33 USC 1251. The U.S. considers the implementing regulations of 40 CFR 140 and 33 CFR 159 as equivalent to the sewage treatment requirements of Annex IV. For more information on this equivalency and vessel compliance, see NVIC 01-09.

Section 312 of FWPCA, as amended, requires the installation of a Marine Sanitation Device (MSD), a sewage treatment device to prevent the discharge of untreated or inadequately treated sewage into U.S. waters. The Act requires every vessel that operates in U.S. waters and equipped with an installed toilet to have a certified and operable MSD. A vessel with no installed toilet is not subject to the provisions of section 312. Installed toilets that are not equipped with a certified MSD, and that discharge raw sewage directly over the side are illegal. Section 312(g)(2) of the FWPCA directs the Coast Guard to certify MSDs and 33 CFR 159 sets out equipment construction and operation requirements.

Since the U.S. has not ratified MARPOL 73/78 Annex IV, the Coast Guard will not enforce its provisions aboard foreign vessels during Port State Control examinations, even if the vessel is under the flag of an Annex IV signatory country. Foreign vessels must meet the requirements of 33 CFR 159 when operating in U.S. waters. However, since the U.S. considers Annex IV equivalent to 33 CFR 159, Coast Guard Port State Control officers shall accept foreign vessels that comply with Annex IV. A foreign flag vessel that has a “Certificate of Type Test” under MARPOL Annex IV indicating that its sewage treatment plant meets the test requirements of Resolution MEPC.2(VI) of the International Maritime Organization (IMO) will be accepted by the Coast Guard as being in compliance with 33 CFR 159.7(b) or (c). The Coast Guard considers such treatment plants as fully equivalent to a Coast Guard certified Type II MSD (NVIC 9-82, CH-1, dated 8 October 1988) as long as the unit is in operable condition. U.S. registered vessels will continue to be required to have Coast Guard certified MSDs per 33 CFR 159.

Annex V applies to ship-generated garbage, and aims to reduce the amount of garbage - both plastics and other persistent wastes - that ships dump into the oceans. Annex V defines “garbage” broadly, and includes nearly any kind of waste generated during a ship's normal operations. This Annex requires terminals to provide reception facilities at ports and terminals to receive plastics and other garbage from visiting vessels.

On July 15, 2011, the International Maritime Organization's (IMO) Marine Environment Protection Committee (MEPC) formally adopted Resolution MEPC.201(62), amending MARPOL Annex V. These amendments entered into force on January 1, 2013 and established a general prohibition on discharges of garbage into the sea. Under prescribed conditions, exceptions are provided for food wastes, cargo residues, cleaning agents or additives contained in cargo hold, deck, and external surface wash waters, and animal carcasses. An overview of MARPOL Annex V and associated amendments may be found on IMO's website at: <http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Pages/Default.aspx>. The U.S. implements MARPOL 73/78 Annex V under the Marine Plastic Pollution Research and Control Act of 1987 (MPPRCA), codified within 33 U.S.C. § 1901 et seq. The implementing regulations are in 33 CFR 151.51 - 79. These requirements require adequate waste reception facilities at U.S. ports; that manned ships of certain sizes to display pollution prevention placards; for certain

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS. (Continued).

ships to develop a waste management plan; and that certain manned ships maintain waste disposal records. MPPRCA and 33 CFR 151.51 is applicable to all recreational, fishing, uninspected and inspected vessels, and foreign flag vessels on the navigable waters and all other waters subject to the jurisdiction of the United States, out to and including the Exclusive Economic Zone (200 miles).

Annex VI outlines international requirements for vessel air emissions and shipboard air pollution prevention measures. Annex VI entered into force for the United States on January 8, 2009. Starting on that date, U.S. ships operating anywhere and foreign-flag ships operating in United States waters must comply with the requirements set out in MARPOL Annex VI. (33 U.S.C. 1901(a) (4) & (5), 1902(a)(1)&(5), and 1907 (a), as amended by the Maritime Pollution Prevention Act of 2008 (MPPA), Pub.L. 110-280, 122 Stat 2611).

On July 15, 2011, the International Maritime Organization formally adopted Resolution MEPC.203(62), which amends MARPOL Annex VI. The main requirements of MEPC.203(62) entered into force on January 1, 2013 as MARPOL Annex VI Chapter 4 and addresses ship energy efficiency.

Annex VI sets limits on sulfur oxide (SOx) and nitrogen oxide (NOx) emissions from ship exhausts and prohibits deliberate emissions of ozone-depleting substances. These regulations include a global cap of 3.5% m/m on the sulfur content of fuel oil and calls on IMO to monitor the worldwide average sulfur content of fuel. A mandatory NOx Technical Code defines how vessels can achieve the set limits on NOx emissions.

Additionally, certain regions may be declared an Emission Control Area (ECA). In these areas, the sulfur content of fuel oil used on board ships must not exceed 0.1% m/m. Alternatively, ships may fit an exhaust gas cleaning system or use other technological methods to limit SOx emissions. The Baltic Sea and North Sea Areas have already been designated as ECAs.

The North American Emission Control Area (ECA), under the International Convention for the Prevention of Pollution from Ships (MARPOL), came into effect on 1 August 2012, bringing in stricter controls on emissions of sulfur oxide (SOx), nitrogen oxide (NOx) and particulate matter for ships trading off the coasts of Canada, the United States and the French overseas collectivity of Saint-Pierre and Miquelon. Within ECAS, the sulfur content of fuel oil (expressed in terms of % m/m - that is, by weight) must be no more than 0.10% m/m on and after 1 January 2015. This compares to 3.50% m/m outside an ECA, falling to 0.50% m/m on and after 1 January 2020. This date could be deferred to 1 January 2025, depending on the outcome of a review, to be completed by 2018, as to the availability of compliant fuel oil.

Annex VI prohibits deliberate emissions of ozone depleting substances, which include halons and chlorofluorocarbons (CFCs). New installations containing ozone-depleting substances are prohibited. But existing installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020. The Annex also prohibits the incineration on board ships of certain products, such as contaminated packaging materials and polychlorinated biphenyls (PCBs). Coast Guard guidelines for ensuring compliance with Annex VI can be found in CG-543's Policy Letter 09-01 located on Homeport (<http://homeport.uscg.mil> - Missions > Domestic Vessels > Domestic Vessel Policy > Office of Commercial Vessel Compliance Policy Letters or <http://homeport.uscg.mil> - Missions > Port State Control > General Information > MARPOL Annex VI).

Oil Spill Reporting. Article 8 and Protocol I of MARPOL 73/78 requires the immediate reporting of any un-permitted discharges of oil, NLS substances, or harmful substance in package form to the party in which the vessel is located. For any discharge that occurs within the waters under U.S. jurisdiction, the reporting requirements are found in 33 CFR 153, Subpart B – Notice of the Discharge of Oil or a Hazardous Substance.

33 CFR 153.203 states that any person in charge of a vessel or of an onshore or offshore facility shall, as soon as they have knowledge of any discharge of oil or a hazardous substance shall immediately notify the National Response Center (NRC), NRC's toll free telephone number is (800) 424-8802, fax number is (202) 372-2920.

If direct reporting to the NRC is not practicable, notice of discharge may be made to the Coast Guard or EPA predesignated On-Scene Coordinator (OSC) for the geographic area where the discharge occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or the predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible.

Any person who fails to notify the appropriate agency of the United States Government immediately of a discharge is, upon conviction, fined in accordance with 18 U.S. Code, or imprisoned for not more than 5 years, or both (33 CFR 153.205).

Penalties for Violation. As stated in 33 CFR 151.04, a person who violates MARPOL 73/78, the Act to Prevent Pollution from Ships (APPS)(33 USC 1901-1911), or the implementing regulations (33 CFR 151), is liable for civil or criminal penalties. Civil penalties carry a fine not to exceed \$40,000 for each violation. A person who makes a false, fictitious statement or fraudulent representation in any matter in which a statement or representation is required to be made to the Coast Guard under MARPOL 73/78, the Act, or the implementing regulations, is liable for a civil penalty of \$8,000 for each statement or repre-

(17) REGULATIONS FOR THE PREVENTION OF POLLUTION FROM SHIPS. (Continued).

sentation, as provided by 33 U.S.C. 1908(b)(2). A person who knowingly violates MARPOL 73/78, the Act, or the regulations of this subpart commits a class D felony. 18 U.S.C. 1355 *et seq.*

Vessel owners or operators that discharge oil or hazardous substances into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone, may be subject to civil penalties. Civil penalties carry a fine of not more than \$15,000 per violation and a maximum amount not exceed \$190,000. 33 U.S.C. 1321 *et seq.*

Vessel General Permit (VGP): NPDES stands for National Pollution Discharge Elimination System, which is a matter within the authority of our federal Environmental Protection Agency under the Clean Water Act. As the result of a court decision in 2005, vessels lost the exclusion to the requirements which they had long enjoyed. The VGP incorporates existing CG regulations for ballast, bilge and gray water and dry cargo residue runoff, and in most cases imposes permitting requirements that exceed these standards. It established requirements for 26 types of general discharges, as well as for corrective actions, inspections, monitoring, recordkeeping and reporting. The EPA has the primary responsibility for enforcing the provisions of the VGP and specific questions should be directed to them. Further information on the VGP is provided on the Coast Guard's Homeport web page <http://homeport.uscg.mil/> selecting the following tabs: Missions > Domestic Vessels > Domestic Vessel General > EPA Vessel General Permit (VGP) or on the EPA web page at: <http://www.epa.gov/npdes/vessels> or CG web page at: <http://www.uscg.mil/hq/cg5/cg522/cg5224/vgp.asp>.

(Repetition NTM 1(17)19)

(USCG)

(18) COMPLIANCE WITH THE ACT TO PREVENT POLLUTION FROM SHIPS.

Widely known as the London Dumping Convention, the 1972 International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter entered into force on August 30, 1975. This Convention addresses the unregulated dumping of non-ship generated waste materials into ocean waters, and creates a regime to prevent or strictly limit dumping that degrades or endangers human health or the marine environment. The Convention bans the dumping of certain hazardous materials and requires permits for the dumping of other identified materials and other wastes or matter. "Dumping" is defined as the deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms, or other man-made structures. In addition, the Convention controls the incineration of wastes on board ships, sets out criteria for the selection of dumping and incineration sites at sea, and has provisions to promote regional cooperation.

The Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA or the Ocean Dumping Act) is codified at 33 U.S.C. §1401 *et seq.* MPRSA implements the 1972 London Dumping Convention under U.S. law. MPRSA was amended in 1988 by Public Law 100-688, Title I of which is the Ocean Dumping Ban Act of 1988, and Title IV of which is the Shore Protection Act.

The purpose of MPRSA is to regulate the transportation of material from the U.S. or by U.S. vessels, aircraft, or agencies for the purpose of dumping the material into ocean waters, and the dumping of material transported by any person from a location outside the U.S. if the dumping occurs in the territorial sea or the contiguous zone of the U.S.

MPRSA establishes the statutory authority to regulate ocean dumping beyond the territorial sea line (three mile limit) from U.S. flag vessels and of material from the U.S.; and regulate dumping by any vessel in the U.S. territorial sea and contiguous zone.

Under MPRSA, no dumping is allowed in U.S. waters except some sewage, sludge, dredge materials, and fish wastes. The EPA may issue a permit for dumping of other materials under extraordinary circumstances.

Various federal agencies share certain responsibilities under the MPRSA. The EPA issues ocean dumping permits, and the U.S. Army Corps of Engineers (USACE) issues permits for the dumping of dredge materials. NOAA monitors the effects of waste dumping. The Coast Guard is responsible to conduct surveillance and other appropriate enforcement activity to prevent unlawful transportation of material for dumping, or unlawful dumping.

One of the Coast Guard's activities under the MPRSA includes enforcement of regulations relating to safe transportation of municipal and commercial waste (33 CFR 151.1000). Here, the regulations state that a vessel may not transport municipal or commercial waste in coastal waters without a conditional permit issued by the Coast Guard. 33 CFR 151.1009 and 1012 describe the transportation of municipal or commercial waste requirements and the application process for obtaining a conditional permit.

(Repetition NTM 1(18)19)

(USCG)

(19) INTERNATIONAL SAFETY MANAGEMENT CODE ENFORCEMENT.

Compliance with the ISM Code is mandatory for passenger ships, cargo ships, bulks carriers, and oil and chemical tankers, gas carriers, as well as high speed craft and MODUs over 500 GT engaged on international voyages. To demonstrate compliance, vessels must present copies of approved Documents of Compliance and Safety Management Certificates to Coast Guard Port State control Boarding Officers during routine compliance examinations. ISM compliance demonstrates that vessel operators have safety and environmental policies, emergency response procedures, designated accident and code non-conformity reporting procedures, and on board maintenance and operating manuals. If inbound vessels are not in compliance with the ISM Code, they will be denied entry into U.S. waters (SOLAS Chapter IX and 33 CFR 96).

(Repetition NTM 1(19)19)

(USCG)

(20) BALLAST WATER MANAGEMENT FOR CONTROL OF NON-INDIGENOUS SPECIES.

The United States Coast Guard's ballast water management (BWM) program is responding to concerns that aquatic nuisance species (ANS) may be entering the waters of the United States in the large quantities of ballast water carried into U.S. waters aboard commercial vessels. Carried in this ballast water are plants, animals, bacteria, and pathogens. These organisms range in size from microscopic, to large plants, and free-swimming fish. They have the potential to displace native species, degrade native habitats, spread disease, and disrupt human social and economic activities that depend on water resources. Any ship carrying ballast water is a potential invasion source. In 2016, new compliance dates took effect that set the implementation schedule for the installation and use of BWM treatment system. The USCG's regulations apply to all commercial vessels equipped with ballast water tanks that operate in U.S. waters or are bound for ports or places in the U.S.

Highlights of the BWM program include:

- (a) While similar to the International BWM Convention, the United States is not signatory to the BWM Convention. Ships must comply with the regulations in 33 CFR Part 151 Subparts C and D;
- (b) Requires mandatory ballast water management practices for all vessels that operate in U.S. waters;
- (c) Requires each vessel to maintain a BWM plan that has been developed specifically for the vessel and that will allow those responsible for the plan's implementation to understand and follow the vessel's BWM strategy; and
- (d) Requires the reporting and record keeping of ballasting operations by all vessels.

These regulations implement the provisions of the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, 16 USC 4701 – 4751) as amended by the National Invasive Species Act of 1996 (NISA).

The Coast Guard provides guidance on the BWM program in NVIC 01-18. The Coast Guard's Aquatic Nuisance Species web page provides an additional guidance on the BWM program: <http://www.uscg.mil/hq/cg5/cg522/cg5224/> and <http://www.uscg.mil/hq/cg5/cg522/cg5224/bwm.asp>

(Supersedes NTM 1(20)19)

(USCG)

(21) VESSEL SECURITY REGULATIONS: MARITIME TRANSPORTATION SECURITY ACT (MTSA) AND INTERNATIONAL SHIP AND PORT FACILITY SECURITY (ISPS) CODE.

In December 2002, the International Maritime Organization (IMO) amended the International Convention of Safety of Life at Sea (SOLAS) by implementing Chapter XI-2: Special measures to enhance maritime security. SOLAS XI-2 implements the ISPS Code, which established a set of international security-oriented regulations relating to vessel and port facilities. ISPS is applicable to all cargo ships over 500 Gross Tons (Admeasurements in accordance with the International Tonnage Convention) and passenger ships, regardless of tonnage size, engaged on international voyages.

On October 22, 2003, the U.S. Coast Guard implemented domestic security regulations for maritime security under the authority of the MTSA. The MTSA has additional applicability requirements for other vessel types and sizes, but in general the requirements contained in the MTSA align, where appropriate, with the security requirements in the SOLAS XI-2 and the ISPS Code. Title 33 of the Code of Federal Regulations, Parts 101 through 2106, contain the regulations issued under MTSA that require the owner of each vessel covered by regulation to comply with an approved Vessel Security Plan (VSP). SOLAS vessels must comply with a similar plan called a Ship Security Plan (SSP).

To ensure vessels subject to MTSA and/or ISPS are in compliance, the Coast Guard conducts annual security plan verification exams on all U.S. flag inspected and uninspected vessels and onboard foreign vessels operating in U.S. waters. In verifying compliance with this plan, the inspector has three tasks: ensure that the vessel or facility complies with the approved plan, ensure that the plan and assessment adequately addresses the security vulnerabilities, and verify that the measures accomplish the intended function.

(21) VESSEL SECURITY REGULATIONS: MARITIME TRANSPORTATION SECURITY ACT (MTSA) AND INTERNATIONAL SHIP AND PORT FACILITY SECURITY (ISPS) CODE. (Continued).

The Coast Guard conducts security plan verification exams on inspected vessels during the vessel's normal inspection process. After the initial security plan verification exam, uninspected vessels subject to MTSA undergo subsequent security plan verification exams once every 5 years, while vessels subject to both MTSA and ISPS undergo subsequent exams twice every 5 years, to align with the requirements for the International Ship Security Certificate (ISSC). The Coast Guard conducts ISPS exams on foreign vessels under its Port State Control program.

Further guidance on the Coast Guard's vessel security program for vessels subject to MTSA/ ISPS is found in NVIC 04-03, change 3, in the Marine Safety Manual, Volume II, and at the Office of Commercial Vessel Compliance (CG-CVC) web page at: <https://www.uscg.mil/hq/cgcvc/>.

(Repetition NTM 1(21)19)

(USCG)

(22) WARNING - POSSIBLE DANGER FROM UNLABELED INTERMODAL CONTAINERS AND DRUMS.

With the many exotic chemicals being transported in inter-modal freight containers and in drums as deck cargo, increasingly more reports are received regarding the loss overboard of these potentially dangerous cargo-carrying units. Empty containers and drums may contain residues which may be extremely hazardous to touch or smell, and vapors emanating from these packages may be explosive.

When encountering derelict inter-modal containers and drums, whether afloat or from the sea bottom, the dangers listed above should be considered. Identifying labels will give adequate warning, but containers and drums are more likely to be found with caution labels washed away. All inter-modal freight containers have unique identifying numbers, which should be included in any sighting report if visible from a safe distance. Avoid direct contact and notify U.S. Coast Guard of any sightings in U.S. coastal waters (24 HR TOLL FREE reporting number 1-800-424-8802), or government authorities of the nearest port state if sighting is near any foreign shores.

(Repetition NTM 1(22)19)

(USCG)

(23) REPORTING OF DANGERS TO NAVIGATION.

Mariners will occasionally discover uncharted shoals, malfunctions of important navigational aids, or other dangerous situations that should be made known to other navigators. Those items that can be classified as urgent should be reported by any rapid means to the closest responsible charting authority. The general criterion for important data is "that information without which a mariner might expose his vessel to unnecessary danger." Reports to the U.S. Coast Guard and to foreign authorities can be made via radio using voice, SITOR and Digital Selective Calling (DSC), via TELEX, or via satellite using telephone and fax. Reports to NGA (NAVAREA IV, NAVAREA XII, HYDROLANT, HYDROPAC, and HYDROARC) in Springfield, VA can be made via the Automated Message Handling System (AMHS) (NGA NAVSAFETY) WASHINGTON DC, telephone (1-800-362-6289), fax (1-571-558-3426), or email (navsafety@nga.mil).

Guidance in preparing reports of dangers to navigation and specific radio frequencies, addresses and telephone numbers are contained in NGA Pub. 117, Radio Navigational Aids. Reports should be brief, but must contain:

What - Description of danger

When - UT and date

Where - Latitude and Longitude (Reference chart in use.)

Who - Reporting vessel and observer

Additionally, mariners are requested to notify NGA of discrepancies in charts and publications using the "Marine Information Report and Suggestion Sheet" form included in each issue of the Notice to Mariners. The same form can be submitted electronically from the Submit Reports section of the Maritime Safety Office Web site at:

<https://msi.nga.mil/NGAPortal/MSI.portal>

(Repetition NTM 1(23)19)

(NGA/SFHGA)

(24) VESSEL TRAFFIC SERVICES AND VESSEL MOVEMENT REPORTING SYSTEM CENTER, CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS.

Center Call Sign -- MMSI ¹	Designated frequency (Channel designation) - purpose ²	Vessel Traffic Service and Vessel Movement Reporting System Monitoring area ^{3, 4}
Berwick Bay <i>Berwick Traffic</i> -- 003669950	156.550 MHz (Ch. 11)	The waters south of 29°45'N., west of 91°10'W., north of 29°37'N., and east of 91°18'W.
Buzzards Bay <i>Buzzards Bay</i> <i>Control</i> ⁵ <i>Canal</i> <i>Control</i>	156.600 MHz (Ch. 11) 156.650MHz (Ch. 13)	The waters east and north of a line drawn from the southern tangent of Sakonnet Point, Rhode Island, in approximate position latitude 41°27.2' N, longitude 70°11.7' W, to the Buzzards Bay Entrance Light in approximate position latitude 41°23.5' N, longitude 71°02.0' W, and then to the southwestern tangent of Cuttyhunk Island, Massachusetts, at approximate position latitude 41°24.6' N, longitude 70°57.0' W, and including all of the Cape Cod Canal to its eastern entrance, except that the area of New Bedford harbor within the confines (north of) the hurricane barrier, and the passages through the Elizabeth Islands, is not considered to be "Buzzards Bay".
Houston-Galveston -- 003669954		The navigable waters north of 29°N., west of 94°20'W., south of 29°49'N., and east of 95°20'W.
<i>Houston Traffic</i> <i>Sector III</i>	157.050 MHz (Ch. 21A) 156.250 MHz (Ch. 5A) - <i>Sailing Plans only.</i>	The navigable waters of the Houston Ship Channel (HSC) above Light 121 and 122 (29°44.8'N., 95°03.7'W.).
<i>Houston Traffic</i> <i>Sector II</i>	156.550 MHz (Ch. 11) 156.250 MHz (Ch. 5A) - <i>Sailing Plans only.</i>	The navigable waters north of the Houston Ship Channel (HSC) between Lighted Buoy 33 (29°24.4'N., 94°49.4'W.) and south of a line extending east and Houston Ship Channel Light 122 (29°44.8'N., 95°03.7'W).
<i>Houston Traffic</i> <i>Sector I</i>	156.600 MHz (Ch. 12) 156.250 MHz (Ch. 5A) - <i>Sailing Plans only.</i>	The navigable waters south of a line extending east and west from Houston Ship Channel Lighted Buoy 33 (29°24.4'N., 94°49.4'W.).
Los Angeles/Long Beach: -- 003660465 <i>San Pedro Traffic</i>	156.700 MHz (Ch. 14)	<i>Vessel Movement Reporting System Area:</i> The navigable waters within a 25 nautical mile radius of Point Fermin Light (33°42.3'N., 118°17.6'W.).
Louisville --003669732 <i>Louisville Traffic</i>	156.650 MHz (Ch. 13)	The waters of the Ohio River between McAlpine Locks (Mile 606) and Twelve Mile Island (Mile 593), only when the McAlpine upper pool gauge is at approximately 13.0 feet or above.
Lower Mississippi River -- 0036699952		
<i>New Orleans Traffic</i>	156.550 MHz (Ch. 11)	The navigable waters of the Lower Mississippi River below 29°55.3'N 089°55.6'W (Saxonholm Light) at 86.0 miles Above Head of Passes (AHP), extending down river to Southwest Pass, and, within a 12 nautical mile radius around 28°54.3'N 089°25.7'W Southwest Pass Entrance Light at 20.1 miles Below Head of Passes (BHP).

(24) VESSEL TRAFFIC SERVICES AND VESSEL MOVEMENT REPORTING SYSTEM CENTER, CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS. (Continued).

Center Call Sign -- MMSI ¹	Designated frequency (Channel designation) - purpose ²	Vessel Traffic Service and Vessel Movement Reporting System Monitoring area ^{3, 4}
<i>New Orleans Traffic</i>	156.600 MHz (Ch. 12)	The navigable waters of the Lower Mississippi River bounded on the north by a line drawn perpendicular on the river at 29°55.50'N and 090°12.77'W (Upper Twelve Mile Point) at 109.0 miles AHP and on the south by a line drawn perpendicularly at 29°55.3'N 089°55.6'W (Saxonholm Light) at 86.0 miles AHP.
<i>New Orleans Traffic</i>	156.250 MHz (Ch. 5A)	The navigable waters of the Lower Mississippi River below 30°38.7'N 091°17.5'W (Port Hudson Light) at 254.5 miles AHP bounded on the south by a line drawn perpendicular on the river at 29°55.50'N and 090°12.77'W (Upper Twelve Mile Point) at 109.0 miles AHP.
New York -- 003669951	1	
<i>New York Traffic</i>	156.550 MHz (Ch. 11) - Sailing Plans only 156.600 MHz (Ch. 12) - For Vessels at anchor	The area consists of the navigable waters of the Lower New York Bay bounded on the east by a line drawn from Norton Point to Breezy Point; on the south by a line connecting the entrance buoys at the Ambrose Channel, Swash Channel, and Sandy Hook Channel to Sandy Hook Point; and on the southeast including the waters of Sandy Hook Bay south to a line drawn at latitude 40°25'N; then west in the Raritan Bay to the Raritan River Railroad Bridge, then north into waters of the Arthur Kill and Newark Bay to the Lehigh Valley Draw Bridge at latitude 40°41.9'N; and then east including the waters of the Kill Van Kull and the Upper New York Bay north to a line drawn east-west from the Holland Tunnel ventilator shaft at latitude 40°43.7'N, longitude 74°01.6'W, in the Hudson River; and then continuing east including the waters of the East River to the Throgs Neck Bridge, excluding the Harlem River.
<i>New York Traffic</i>	156.700 MHz (Ch. 14)	The navigable waters of the Lower New York Bay west of a line drawn from Norton Point to Breezy Point; and north of a line connecting the entrance buoys of Ambrose Channel, Swash Channel, and Sandy Hook Channel, to Sandy Hook Point; on the southeast including the waters of the Sandy Hook Bay south to a line drawn at latitude 40°25'N; then west into the waters of Raritan Bay East Reach to a line drawn from Great Kills Light south through Raritan Bay East Reach LGB #14 to Comfort PT, NJ; then north including the waters of the Upper New York Bay south of 40°42.40'N (Brooklyn Bridge) and 40°43.70'N (Holland Tunnel Ventilator Shaft); west through the KVK into the Arthur Kill north of 40°38.25'N (Arthur Kill Railroad Bridge); then north into the waters of the Newark Bay, south of 40°41.95'N (Lehigh Valley Draw Bridge).
<i>New York Traffic</i>	156.600 MHz (Ch. 12)	The navigable waters of the Raritan Bay south to a line drawn at latitude 40°26'N; then west of a line drawn from Great Kills Light south through the Raritan Bay East Reach LGB #14 to Point Comfort, NJ; then west to the Raritan River Railroad Bridge; and north including the waters of the Arthur Kill to 40°28.25'N (Arthur Kill Railroad Bridge); including the waters of the East River north of 40°42.40'N (Brooklyn Bridge) to the Throgs Neck Bridge, excluding the Harlem River.

(24) VESSEL TRAFFIC SERVICES AND VESSEL MOVEMENT REPORTING SYSTEM CENTER, CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS. (Continued).

Center Call Sign -- MMSI ¹	Designated frequency (Channel designation) - purpose ²	Vessel Traffic Service and Vessel Movement Reporting System Monitoring area ^{3, 4}
Port Arthur ⁶ -- 003669955		
<i>Port Arthur Traffic</i>	156.050 MHz (Ch. 01A)	The navigable waters of the Sabine-Neches Canal south of 29°52.70'N.; Port Arthur Canal; Sabine Pass Channel; Sabine Bank Channel; Sabine Outer Bar Channel; the offshore safety fairway; and the ICW from High Island to its intersection with the Sabine-Neches Canal.
<i>Port Arthur Traffic</i>	156.275 MHz (Ch 65A)	The navigable waters of the Neches River; Sabine River; and Sabine-Neches Waterway north of 29°52.70'N.; and the ICW from its intersection with the Sabine River to MM 260.
<i>Port Arthur Traffic</i>	156.675 MHz (Ch 73) ⁶	The navigable waters of the Calcasieu Channel; Calcasieu River Channel; and the ICW from MM 260 to MM 191.
Prince William Sound -- 003669958		
<i>Valdez Traffic</i>	156.650 MHz (Ch. 13)	The navigable waters of the U.S., north of a line drawn from Cape Hinchinbrook Light to Schooner Rock Light, comprising that portion of Prince William Sound between 146°30'W and 147°20'W and includes Valdez Arm, Valdez Narrows, and Port Valdez.
Puget Sound ⁷		
<i>Seattle Traffic</i> -- 003669957	156.250 MHz (Ch. 5A)	U.S. and Canadian waters of the Strait of Juan de Fuca east of 124°40'W. including waters south and east of a line drawn from Church Point on Vancouver Island, to Race Rocks Light, due east to the intersection of the U.S./Canadian border at 48°17'53.0"N/123°14'06.0"W, north-easterly to Hein Bank in position 48°21'05.62"N/123°02'45.72"W, northerly to Cattle Point Light on San Juan Island, along the shoreline to Lime Kiln Light, to Kellett Bluff Light on Henry Island, along the shoreline to the tip of McCracken Point at the northernmost point of Henry Island, to the southernmost point on Stuart Island in position 48°39'28"N/123°11'05"W, along the shoreline to Turn Point Light, to Sandy Point on Waldron Island, along the shoreline to Point Hammond, to Patos Island Light, to Alden Bank in position 48°50'23.39"N/122°52'13.67"W, then due north to Boundary Bay in position 49°00'07.5"N/122°52'13.67"W, then due east along the international boundary to the shoreline in Semiahmoo Bay.
<i>Seattle Traffic</i> -- 003669957	156.700 MHz (Ch. 14)	The waters of Puget Sound, Hood Canal and adjacent waters south of a line connecting Nodule Point and Bush Point in Admiralty Inlet and south of a line drawn due east from the southernmost tip of Possession Point on Whidbey Island to the shoreline.
<i>Prince Rupert Traffic</i> -- 003160013	156.725 MHz (Ch. 74)	The waters west of 124°40'W. within 12 nautical miles of the coast of Vancouver Island including the waters north of 48°N., and east of 125°15'W.

(24) VESSEL TRAFFIC SERVICES AND VESSEL MOVEMENT REPORTING SYSTEM CENTER, CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS. (Continued).

Center Call Sign -- MMSI ¹	Designated frequency (Channel designation) - purpose ²	Vessel Traffic Service and Vessel Movement Reporting System Monitoring area ^{3, 4}
<i>Victoria Traffic</i> -- 003160010	156.550 MHz (Ch. 11)	The waters of the Strait of Georgia, including Vancouver Harbor, Boundary Pass, and Haro Strait north and west of a line drawn from Church Point on Vancouver Island, to Race Rocks Light, due easterly to the intersection of the U.S./Canadian border at 48°17'53.0"N/123°14'06.0"W, north-easterly to Hein Bank in position 48°21'05.62"N/123°02'45.72"W, northerly to Cattle Point Light on San Juan Island, along the shoreline to Lime Kiln Light, to Kellett Bluff Light on Henry Island, along the shoreline to the tip of McCracken Point at the northernmost point of Henry Island, to the southernmost point on Stuart Island in position 48°39'28"N/123°11'05"W, along the shoreline to Turn Point Light, to Sandy Point on Waldron Island, along the shoreline to Point Hammond, to Patos Island Light, to Alden Bank in position 48°50'23.39"N/122°52'13.67"W, then due north to Boundary Bay in position 49°00'07.5"N/122°52'13.67"W, then due east along the international boundary to the shoreline in Semiahmoo Bay.
San Francisco -- 003669956		
<i>San Francisco Traffic</i>	156.700 MHz (Ch. 14)	The navigable waters of the San Francisco Offshore Precautionary Area, the navigable waters shoreward of the San Francisco Offshore Precautionary Area east of 122°42.0'W. and north of 37°40.0'N. extending eastward through the Golden Gate, and the navigable waters of San Francisco Bay and as far east as the port of Stockton on the San Joaquin River, as far north as the port of Sacramento on the Sacramento River.
<i>San Francisco Traffic</i>	156.600 MHz (Ch. 12)	The navigable waters within a 38 nautical mile radius of Mount Tamalpais (37°55.8'N., 122°34.6'W.) west of 122°42.0'W. and south of 37°40.0'N and excluding the San Francisco Offshore Precautionary Area.
St. Marys River -- 003669953		
<i>Soo Traffic</i>	156.600 MHz (Ch. 12)	The waters of the St. Marys River and lower Whitefish Bay from 45-57.00'N. (De Tour Reef Light) to the south and 46-38.70'N. (Ile Parisienne Light) to the north, except the waters of the St. Marys Falls Canal and to the east of a line from La Pointe to Sims Point, within Potagannissing Bay and Worsley Bay.
Tamp Bay --003660471		
<i>Tampa Traffic</i>	156.600 MHz (Ch. 12)	35 nautical mile radius of the RACON "T" buoy.

¹ Maritime Mobile Service Identifier (MMSI) is a unique nine-digit number assigned that identifies ship stations, ship earth stations, coast stations, coast earth stations, and group calls for use by a digital selective calling (DSC) radio, an INMARSAT ship earth station or AIS. AIS requirements are set forth in §§ 161.21 and 164.46 of this subchapter. The requirements set forth in §§ 161.21 and 164.46 of this subchapter apply in those areas denoted with a MMSI number.

² In the event of a communication failure, difficulties or other safety factors, the Center may direct or permit a user to monitor and report on any other designated monitoring frequency or the bridge-to-bridge navigational frequency, 156.650 MHz (Channel 13) or 156.375 MHz (Ch. 67), to the extent that doing so provides a level of safety beyond that provided by other means. The bridge-to-bridge navigational frequency, 156.650 MHz (Ch. 13), is used in certain monitoring areas where the level of reporting does not warrant a designated frequency.

(24) VESSEL TRAFFIC SERVICES AND VESSEL MOVEMENT REPORTING SYSTEM CENTER, CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS. (Continued).

³ All geographic coordinates (latitude and longitude) are expressed in North American Datum of 1983 (NAD 83).

⁴ Some monitoring areas extend beyond navigable waters. Although not required, users are strongly encouraged to maintain a listening watch on the designated monitoring frequency in these areas. Otherwise, they are required to maintain watch as stated in 47 CFR 80.148.

⁵ In addition to the vessels denoted in section 161.16 of this chapter, requirements set forth in subpart B of 33 CFR part 161 also apply to any vessel transiting VMRS Buzzards Bay required to carry a bridge-to-bridge radiotelephone by part 26.

⁶ Until otherwise directed, full VTS services will not be available in the Calcasieu Channel, Calcasieu River Channel, and the ICW from MM 260 to MM 191. Vessels may contact Port Arthur Traffic on the designated VTS frequency to request advisories, but are not required to monitor the VTS frequency in this sector.

⁷ A Cooperative Vessel Traffic Service was established by the United States and Canada within adjoining waters. The appropriate Center administers the rules issued by both nations; however, enforces only its own set of rules within its jurisdiction. Note, the bridge-to-bridge navigational frequency, 156.650 MHz (Ch. 13), is not so designated in Canadian waters, therefore users are encouraged and permitted to make passing arrangements on the designated monitoring frequencies.

(Supersedes NTM 1(24)19)

(USCG)

(25) SEISMIC SURVEYS.

Details of seismic surveys may be broadcast to mariners via HYDROLANT, HYDROPAC, HYDROARC, NAVAREA IV and NAVAREA XII broadcast systems. Surveys can be conducted without prior notification or broadcast warnings.

Survey vessels may operate alone or in company with other surface vessels or submersibles. Survey vessels may be towing cables in excess of 2 miles astern. Cables may be marked by buoys and may be towed on the surface or submerged.

During a survey, repeated shock waves are created by using explosive charges, compressed air, mechanical vibrators or by electrical means at any level from the bottom to the surface. Vessels surveying may be underway but sometimes are stopped for extended periods.

Seismic survey vessels which are unable to maneuver are required to carry the lights and signals described in Rule 27 of International Regulations for Preventing Collisions at Sea. These vessels should be given a wide berth.

Charges may be contained in a variety of cylinders, tubes, or bags which may not be marked as dangerous. No attempt to recover such items should be made. Any suspicious charge-like containers inadvertently taken aboard by trawls or any other means should be carefully handled and jettisoned immediately if possible.

(Repetition NTM 1(25)19)

(NGA/SFHG)

(26) UNITED STATES - CAUTION REGARDING SUBMARINE OPERATIONS.

Boundary limits and designations of submarine operating areas are shown on the charts in magenta or purple lines. As submarines may be operating in these areas, vessels should proceed with caution. During torpedo practice firing, all vessels are cautioned to keep well clear of naval target vessels flying a large red flag where it may best be seen.

During the past a number of potentially dangerous incidents have occurred. Ships have entered Fleet Operating Areas in which UDT (Underwater Demolition Teams) or SEAL (Sea, Air, and Land) Teams were conducting scheduled operations from a submerged submarine. These operations were being conducted in a specific area assigned for that purpose. These submerged operations ordinarily involve transferring swimmers in and out of a submarine while submerged. In this situation, movements of the submarine must be restricted in course, speed, and depth. Furthermore, emergency surfacing could prove hazardous and result in loss of life to swimmers. Therefore, when conducting operations of this type the submarine and swimmer detachment are relatively immobile and are helpless to evade approaching ships passing through their area. There is also a real danger that a well-intentioned ship, unaware of these operations, might turn in the submarine's direction to investigate rubber raft, swimmers, or submarine periscope.

Notice of date and time prior to any subsurface operations should be provided to Commander Submarine Force, U.S. Atlantic Fleet, 7958 Blandy Rd., Norfolk, VA 23551-2492.

(Repetition NTM 1(26)19)

(U.S. NAVY)

(27) SPECIAL RULES WITH RESPECT TO ADDITIONAL STATION AND SIGNAL LIGHTS FOR NAVY SHIPS.

1. Man overboard lights.-Naval vessels may display, as a means of indicating man overboard, two pulsating, all around red lights in a vertical line located on a mast from where they can best be seen.
2. Yard arm signaling lights.-Naval vessels may display, as a means of visual signaling, white all around lights at the end of the yardarms. These lights will flash in varying sequences to convey the intended signal.
3. Aircraft warning lights.-Naval vessels may display, as a means of indicating the presence of an obstruction to low flying aircraft, one or two all around red lights on each obstruction.
4. Underway replenishment contour lights.-Naval vessels may display, as a means of outlining the contour of the delivery ship during night time underway replenishment operations, red or blue lights at deck edge extremities. These lights are being converted to blue, vice red, therefore either color may be seen until conversion is complete.
5. Minesweeping station keeping lights.-Naval vessels engaged in minesweeping operations may display, as an aid in maintaining a prescribed interval and bearing, two white lights in a vertical line visible from 070 through 290 degrees relative.
6. Submarine identification light.-Submarines may display, as a distinctive means of identification, an intermittently flashing amber beacon located where it can best be seen, as near as practicable, all around the horizon.
7. Special operations lights.-Naval vessels may display, as a means of coordinating certain operations, a revolving beam colored red, green or amber, located on either yardarm or mast platform from where it can be seen all around the horizon.
8. Convoy operations stern light.-Naval vessels may display, during periods of convoy operations, a blue light located near the stern, with the same characteristics as, but in lieu of, the normal white stern light.
9. Wake illumination light.-Naval vessels may display a white light located near the stern to illuminate the wake.
10. Flight operations lights.-Naval vessels engaged in night flight operations may display various arrangements of light systems containing combinations of different colored lights as a means of assisting in the launch and recovery of aircraft and enhancing flight safety. These light systems will be located at various points on the vessels, depending on the vessel type and nature of the flight operations being conducted.
11. Amphibious operations lights.-Naval vessels engaged in night amphibious operations may display various arrangements of light systems containing combinations of different colored lights as a means of assisting in the launch and recovery of assault craft and enhancing the safety of the amphibious operation. These light systems will be located at various points on the vessels, depending on the vessel type and the nature of the amphibious operations being conducted.
12. Minesweeping polarity signal lights.-Naval vessels engaged in minesweeping operations may display either a red or green light on each side of vessel.
13. Replenishment-at-sea floodlights.-Naval vessels engaged in replenishment-at-sea operations may display various arrangements of floodlights of different colors for general illumination of equipment, work areas, and cargo being transferred between ships. These lights will be located at various points on the vessels, depending on the vessel type and location of the replenishment-at-sea handling areas.
14. Replenishment-at-sea cargo transfer signal lights.-Naval vessels engaged in replenishment-at-sea operations may display one or more red light signal devices on the delivery side of the vessels. These devices display various combinations of lights to indicate type of cargo being transferred.
15. Replenishment-at-sea truck light.-Naval vessels engaged in replenishment-at-sea operations may display one or more red all-round light(s) located on a mast to assist the receiving vessel in approaching the delivery vessel.
16. Replenishment-at-sea lights.-Naval aircraft carriers and similar type vessels may display two all-round lights installed along the forward starboard flight deck edge to indicate the fore-and-aft axis when the aircraft carrier or similar type vessel is the delivery vessel.

(Repetition NTM 1(27)19)

(U.S. NAVY)

(28) UNITED STATES NAVAL VESSELS - NAVIGATIONAL LIGHT WAIVERS - DISTINCTIVE LIGHTS AUTHORIZED FOR NAVAL VESSELS.

1. All ships are warned that, when U.S. Naval vessels are met on the high seas or on navigable waters of the United States during periods when navigational lights may be displayed; certain navigational lights of some naval vessels may vary from the requirements of the Regulations for Preventing Collisions at Sea, 1972, and rules applicable to the navigable waters of the United States, as to number, position, range of visibility or arc of visibility. These differences are necessitated by reasons of military function or special construction of the naval ships. An example is the aircraft carrier where the two masthead lights are considerably displaced to starboard from the center or keel line of the vessel when viewed from ahead. Certain other naval vessels cannot comply with the horizontal separation requirements of the masthead lights, and the two masthead lights on even larger naval vessels, such as some cruisers, will thus appear to be crowded together when viewed from a distance. Other naval vessels may also have unorthodox navigational light arrangements or characteristics when seen either underway or at anchor.

(28) UNITED STATES NAVAL VESSELS - NAVIGATIONAL LIGHT WAIVERS - DISTINCTIVE LIGHTS AUTHORIZED FOR NAVAL VESSELS. (Continued).

2. Naval vessels may also be expected to display certain other lights. These lights include, but are not limited to, different colored recognition light signals, and aircraft landing lights. These lights may sometimes be shown in combination with navigational lights.
3. During naval maneuvers, naval ships, alone or in company, may also dispense with showing any lights, though efforts will be made to display lights on the approach of shipping.
4. Naval vessels, except for aircraft carriers, may dispense with showing the masthead lights during operations or maneuvers in which the vessels are restricted in ability to maneuver.

(Repetition NTM 1(28)19)

(CNO)

(29) TRAFFIC SEPARATION SCHEMES, AREAS TO BE AVOIDED, RECOMMENDED TRACKS, AND OTHER ROUTING MEASURES.

To increase the safety of navigation, particularly in converging areas of high traffic density, routes incorporating traffic separation schemes have been adopted by the IMO in certain areas of the world. Certain maritime nations have also adopted their own non-IMO approved traffic separation schemes. In the interest of safe navigation, it is recommended that through traffic use these schemes, as far as circumstances permit, by day and by night and in all weather conditions.

An area to be avoided (ATBA) is a routing measure comprising an area within defined limits, in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties, and which should be avoided by all ships, or certain classes of ships.

Recommended tracks are routes, generally found to be free of dangers, which ships are advised to follow to avoid possible hazards nearby.

The International Maritime Organization (IMO) is recognized as the only international body responsible for establishing and recommending measures on an international level concerning ships' routing. In deciding whether or not to adopt or amend a traffic separation scheme, IMO will consider whether the scheme complies with the design criteria for traffic separation schemes and with the established methods of routing. IMO also considers whether the aids to navigation proposed will enable mariners to determine their position with sufficient accuracy to navigate the scheme in accordance with Rule 10 of the International Regulations for Preventing Collisions at Sea (72 COLREGS).

General principles for navigation in traffic separation schemes are as follows:

1. A ship navigating in or near a traffic separation scheme adopted by IMO shall in particular comply with Rule 10 of the 72 COLREGS to minimize the development of risk of collisions with another ship. The other rules of the 72 COLREGS apply in all respects, and particularly the steering and sailing rules if risk of collision with another ship is deemed to exist.
2. Traffic separation schemes are intended for use by day and by night in all weather conditions, in ice-free waters or under light ice conditions where no extraordinary maneuvers or assistance by an icebreaker is required.
3. Traffic separation schemes are recommended for use by all ships unless stated otherwise. Bearing in mind the need for adequate underkeel clearance, a decision to use a traffic separation scheme must take into account the charted depth, the possibility of changes in the sea-bed since the time of last survey, and the effects of meteorological and tidal conditions on water depths.
4. A deep-water route is an allied routing measure primarily intended for use by ships which require the use of such a route because of their draft in relation to the available depth of water in the area concerned. Through traffic to which the above consideration does not apply should, if practicable, avoid following deep-water routes. When using a deep-water route mariners should be aware of possible changes in the indicated depth of water due to meteorological or other effects.
5. The arrows printed on charts merely indicate the general direction of traffic; ships should not set their courses strictly along the arrows.
6. Vessels should, so far as practicable, keep clear of a traffic separation line or separation zone.
7. Vessels should avoid anchoring in a traffic separation scheme or in the area near its terminus.
8. The signal "YG" meaning "You appear not to be complying with the traffic separation scheme" is provided in the International Code of Signals for appropriate use.

NOTE.-Several governments administering traffic separation schemes have expressed their concern to IMO about the large number of infringements of Rule 10 of the 72 COLREGS and the dangers of such contraventions to personnel, vessels and environment. Several governments have initiated surveillance of traffic separation schemes for which they are responsible and are providing documented reports of vessel violations to flag states. As in the past, the U.S. Coast Guard will investigate these reports and take appropriate action. Mariners are urged to comply at all times with the 72 COLREGS and, in particular, Rule 10 when operating in or near traffic separation schemes.

(29) TRAFFIC SEPARATION SCHEMES, AREAS TO BE AVOIDED, RECOMMENDED TRACKS, AND OTHER ROUTING MEASURES. (Continued).

9. Notice of temporary adjustments to traffic separation schemes for emergencies or for accommodation of activities which would otherwise contravene Rule 10 or obstruct navigation may be made in Notices to Mariners. Temporary adjustments may be in the form of a precautionary area within a traffic lane, or a shift in the location of a lane.
10. The IMO approved routing measures which affect shipping in or near U.S. waters are:

UNITED STATES TRAFFIC SEPARATION SCHEMES

In the Approaches to Portland, Maine
In the Approach to Boston, Massachusetts
In the Approaches to Narragansett Bay, Rhode Island and Buzzards Bay, Massachusetts
Off New York
Off Delaware Bay
In the Approaches to Chesapeake Bay, including a deep water route
In the Approaches to the Cape Fear River
In the Approaches to Galveston Bay
In the Approaches to Los Angeles-Long Beach
In the Santa Barbara Channel
Off San Francisco
In the Strait of Juan de Fuca and its Approaches
In Puget Sound and its approaches
In Haro Strait, Boundary Pass, and in the Strait of Georgia
In Prince William Sound, Alaska

UNITED STATES AREAS TO BE AVOIDED

In the region of Nantucket Shoals
In the vicinity of the Excelerate Northeast Gateway Energy Bridge Deepwater Port
In the vicinity of the Neptune Deepwater Port
In the Great South Channel
Off the Florida Coast (Adjacent to Florida Keys)
At Louisiana Offshore Oil Port (LOOP) in the Gulf of Mexico
Off the California Coast (In the region of the Channel Islands)
Off Washington Coast
In the region of the Aleutian Archipelago
In the Papahānaumokuākea Marine National Monument PSSA
In the region of the Northwest Hawaiian Islands

UNITED STATES NO ANCHORING AREAS

In the vicinity of Northeast Gateway Energy Bridge Deepwater Port
In the vicinity of Neptune Deepwater Port
Flower Garden Banks
Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys

(UNITED STATES RECOMMENDED TRACKS

Off the California Coast (Off Monterey Bay for vessels 300 gross tons or more and vessels carrying hazardous cargo in bulk)

UNITED STATES TWO-WAY ROUTE

In the Strait of Juan de Fuca

(Supersedes NTM 1(29)19)

(IMO/USCG)

(30) FIRING DANGER AREAS.

Firing and bombing practice exercises take place either occasionally or regularly in numerous areas established for those purposes along the coast of practically all maritime countries.

In view of the difficulty in keeping these areas up to date on the charts, and since the responsibility to avoid accidents rests with the authorities using the areas for firing and/or bombing practice, these areas will not as a rule be shown on NGA charts.

National Ocean Service Charts show firing and bombing practice areas as defined by Code of Federal Regulations (Title 33, Part 334) in United States waters.

Any permanent aid to navigation that may be established to mark a danger area, or any target, fixed or floating, that may constitute a danger to navigation, will be shown on the appropriate charts.

Warning signals, usually consisting of red flags or red lights, are customarily displayed before and during the practice, but the absence of such warnings cannot be accepted as evidence that a practice area does not exist. Vessels should be on the lookout for local warnings and signals, and should, whenever possible, avoid passing through an area in which practice is in progress, but if compelled to do so should endeavor to clear it at the earliest possible moment.

(Repetition NTM 1(30)19)

(NGA/SFHG)

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD.

National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS), Office of Protected Resources has advised that several species of endangered and threatened sea turtles and endangered whales occur along the U.S. eastern seaboard; all are vulnerable to collisions with vessels.

Sea Turtles. Sea turtles are highly susceptible to vessel collisions because they regularly surface to breathe and often rest at or near the surface. Leatherback turtles commonly feed on jellyfish near the surface; areas where concentrations of jellyfish are readily visible should be avoided or traversed slowly as turtles are likely to be present and actively feeding. Sea turtles can be difficult to see, especially in choppy or rough seas. Sea turtles are commonly found along the U.S. eastern seaboard from Maine to Florida and throughout the Caribbean. Critically important nesting beaches and associated near shore habitat occurs from North Carolina to Florida, and adult turtles migrate to and from these areas from April through September. These are particularly important times and areas for adults, but sea turtles (both adults and juveniles) are found year-round in waters along the eastern seaboard and care should be taken at all times to avoid collisions.

North Atlantic Right Whales. The North Atlantic right whale is one of the world's most endangered large whale species. North Atlantic right whales are found primarily in continental shelf waters between Florida and the Gulf of St. Lawrence. The species is listed as "endangered" under the Endangered Species Act, and protected under the Marine Mammal Protection Act. Approaching within 500 yards of right whales is prohibited and is a violation of U.S. federal law.

These whales migrate annually along the east coast between feeding grounds off New England and Canada and the southern calving grounds from North Carolina to Florida. Because right whales mate, rest, feed and nurse their young at the surface, and often do not move out of the way of oncoming vessels, they are highly vulnerable to being struck. Pregnant females and females with nursing calves are particularly vulnerable to collisions with vessels.

Right whales are large baleen whales. Adults are generally 45 to 55 feet in length and can weigh up to 70 tons. The body is mostly black, but irregularly shaped white patches of skin may be present on the underside. The best field identifiers are a broad back with no dorsal fin, irregular raised white patches on the head, and a distinctive two-column V-shaped blow when viewed from directly behind or in front of the whale. The whales have broad, paddle-shaped flippers and a broad, deeply notched tail. Right whales are slow moving and seldom travel faster than 5 or 6 knots. They can stay submerged for 10 to 20 minutes and may appear suddenly when surfacing to breathe. They are often seen alone or in small groups. At times, right whales form large groups of 20 or more animals.

The following table describes the seasonal occurrence of North Atlantic right whales. However, in any given year oceanographic variability may affect the seasonal distribution of this species. There are two areas in U.S. waters designated as critical habitats for right whales: coastal waters of Florida, Georgia, South Carolina, and North Carolina (Sebastian Inlet, Florida, to Cape Fear, North Carolina), and coastal waters of Massachusetts, New Hampshire and Maine as well as the off-shore waters in the Gulf of Maine and Georges Bank to the Hague Line. The northern critical habitat areas are feeding and nursery grounds, while the southern area contains the only known calving/nursery area for North Atlantic right whales.

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).

Location	Season	Comments
Central Gulf of Maine (Jordan Basin, Cashes Ledge)	April-June, October-December	
Cape Cod Bay	December-May	
Great South Channel, Northern Edge of Georges Bank	March-July	
Bay of Fundy, Scotian Shelf (Browns Bank, Roseway Basin), Gulf of St. Lawrence	June - October	Most of the population can be found in this area during this time
Jeffreys Ledge	October-December	Whales are frequently sighted in this area
Stellwagen Bank National Marine Sanctuary	Year-round	Peak sightings occur in the early spring with infrequent sightings in the summer
New York to North Carolina	Year-round	The migration corridor between right whale habitats is thought to be primarily west of the Gulf Stream
South Carolina, Georgia and Florida Calving Area	November-April	Calving right whales have been sighted as far north as Cape Fear, NC and as far south as Miami, FL with rare sightings in the Gulf of Mexico

To reduce the number and severity of vessel strikes with right whales, the following recommendations and regulations have been established:

Vessels greater than or equal to 65 ft in overall length are subject to mandatory speed restrictions of 10 knots or less in seasonal management areas (SMA) along the U.S. East Coast during times when right whales are likely to be present. The Northeastern SMA speed restrictions are in place from January 1 through May 15 in Cape Cod Bay, from March 1 through April 30 off Race Point, and from April 1 through July 31 in the Great South Channel. Speed restrictions in the U.S. Mid-Atlantic SMAs are in place from November 1 to April 30, and include Block Island Sound, entry into the Ports of New York/New Jersey, Delaware Bay, Entrance to Chesapeake Bay, and the Ports of Morehead City and Beaufort, NC, and within a continuous area approximately 20 nautical miles from shore around the major ports of Wilmington, NC, Charleston, SC and Savannah, GA. Speed restrictions are in place in the Southeastern U.S. SMA from November 15 to April 15, this area extends from shore approximately 30 nautical miles eastward and contains the major ports of Brunswick, GA, Fernandina Beach, FL and Jacksonville, FL. NOAA Fisheries may also establish voluntary Dynamic Management Areas (DMAs) when right whales are present in areas and times not covered by the SMAs. Information about established DMAs will be announced via Coast Guard Broadcast Notice to Mariners, Coast Guard Local Notice to Mariners, and NAVTEX. Mariners are encouraged to avoid DMAs or reduce speeds to 10 knots or less while transiting through DMAs. Additional information on SMA locations and exemptions to this law in addition to printed compliance guides can be found at the following website:

<https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales>.

As weather and conditions permit, a dedicated seasonal program of aerial and vessel surveys are conducted in various locations along the U.S. East Coast to provide whale sighting information to mariners. Surveys typically occur in the following locations at the specified times: a) Cape Cod Bay from December through May and year-round in the Gulf of Maine (including the Great South Channel); b) Georgia south to Crescent Beach, FL from December through March. Survey planes occasionally use VHF-FM channel 16 to contact ships directly if whales have been spotted in close proximity to that vessel. However, many right whales go undetected by surveys. Right whale advisories are broadcast periodically for these and surrounding areas by Coast Guard Broadcast Notice to Mariners, NAVTEX, NOAA Weather Radio, Cape Cod Canal Vessel Traffic Control, the Bay of Fundy Vessel Traffic Control, and are included in the return message from the Right Whale Mandatory Ship Reporting (MSR) systems. Sighting information may be obtained by sending an email to: ne.rw.sightings@noaa.gov (Northeast) or

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).

se.rw.sightings@noaa.gov (Southeast). Recent right whale sighting information can also be found at: <http://www.nefsc.noaa.gov/psb/surveys/>.

In addition to the requirements identified above, NOAA National Marine Fisheries Service recommends the following precautionary measures to avoid adverse interactions with the North Atlantic right whales:

1. Before entering right whale habitat, check sources for recent right whale sighting reports. Local ship pilots also have information on whale sightings and safe local operating procedures.
2. Review right whale identification materials and maintain a sharp watch with lookouts familiar with spotting whales. Even though right whales are very large, they can be difficult to spot because of their dark color and lack of a dorsal fin.
3. Avoid transiting through the right whale critical habitats and areas where right whales have recently been sighted. If transiting between ports within critical habitats, minimize transit distance. Route around observed or recently reported right whales and anticipate delays due to whale sightings. Vessels should avoid transits at night or during periods of low visibility.
4. If a right whale is sighted from the vessel or reported along the intended track of the vessel, mariners should exercise caution, post a lookout and continue to operate at 10 knots when consistent with safe navigation. If a right whale is sighted, a vessel must steer a course away from the right whale and immediately leave the area at slow safe speed. Do not assume right whales will move out of the way of an approaching vessel.

Any whale accidentally struck, any dead whale carcass, and any sighting of a whale injured or entangled in fishing gear should be reported immediately to the Coast Guard or NOAA National Marine Fisheries Service noting the precise location, date, and time of the accident or sighting. In the case of an accidental strike other information such as the speed and course of the vessel, vessel specifications such as size and propulsion, water depth, environmental conditions such as visibility, wind speed and direction, description of the impact, fate of the animal, and species and size, if known should be provided. Reports to NOAA for dead, ship struck or injured whales can be made to +1-866-755-6622 in the Northeast U.S. and +1-877-WHALE-HELP (942-5343) in the Southeast U.S. or at <https://fisheries.noaa.gov/report>.

Recommended Two-Way Routes were developed for vessels entering and transiting through Cape Cod Bay and arriving and departing the ports of Brunswick, GA, Fernandina Beach, FL and Jacksonville, FL. To reduce the risk of vessel strikes to the North Atlantic right whale, an Area To Be Avoided was established in the Great South Channel, east of the Boston Harbor traffic lanes. Vessels of 300 gross tons and above should avoid the area between the period of April 1st through July 31st. The area is bounded by 41°44'05"N, 69°34'58"W; 42°10'00"N, 68°31'00"W; 41°24'53"N, 68°31'00"W; and 40°50'28"N, 68°58'40"W, and then back to the starting point. Information on these can be found at:

<http://www.nmfs.noaa.gov/pr/shipstrike/>.

Mandatory Ship Reporting (MSR) Systems areas exist for two areas off the east coast of the United States. The system in the northeastern U.S. operates year round and the system in the southeast U.S. operates from November 15 to April 16. The systems require all vessels 300 gross tons or greater to report to a shore-based station when entering the areas. In return, vessels will receive an automated message indicating precautionary measures mariners can take to reduce the possibility of striking right whales and recent sighting locations. The reporting system requires reporting only and will affect no other aspect of vessel operation. Operators should review the contents of the return message. Reports to the Mandatory Ship Reporting Systems can be sent by email: RightWhale.MSR@noaa.gov or Telex: 48156090. Additional information on MSR locations and reporting procedures may be obtained in the U.S. Coast Pilots or at the following Web site:

<http://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-blue-atlantic-right-whales#mandatory-ship-reporting-system>.

Example Report to MSR North:

WHALESNORTH// (Reporting system area, WHALESSOUTH is the other area)
 M/487654321// (Vessel INMARSAT number)
 A/CALYPSO/NRUS// (Vessel name and call sign)
 B/031401Z APR// (Day, time and month of report)
 E/345// (True course)
 F/10.0// (Speed in knots and tenths)
 H/031410Z APR/4104N/06918W// (Date, time and point of entry into system)
 I/BOSTON/032345Z APR// (Destination and ETA)
 L/WP/4104N/06918W/10.0//
 L/WP/4210N/06952W/10.0//
 L/WP/4230N/07006W/10.0//

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).

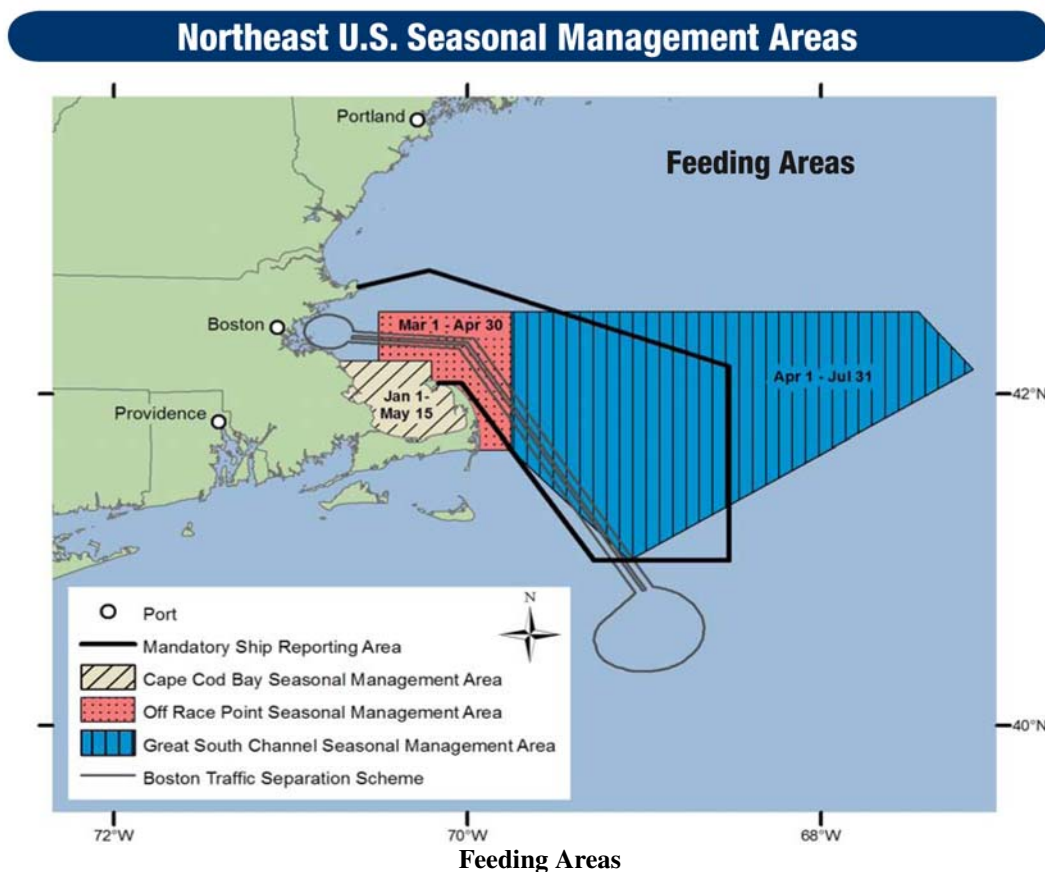
Route information can be reported as a set of waypoints (WP) and intended speed shown above or a rhumb line to port and intended speed shown below:

L/RL/10.0

(Compliance Guide for Right Whale Ship Strike Reduction Rule (50 CFR 224.105))

ATTENTION: All vessels greater than or equal to 65 ft (19.8 m) in overall length and subject to the jurisdiction of the United States and all vessels greater than or equal to 65 ft in overall length entering or departing a port or place subject to the jurisdiction of the United States.

YOU MUST SLOW TO SPEEDS OF 10 KNOTS OR LESS IN ACTIVE SEASONAL MANAGEMENT AREAS



<u>Cape Cod Bay</u>	<u>Off Race Point</u>	<u>Great South Channel</u>
January 1 - May 15	March 1 - April 30	April 1 - July 31
Includes all waters of Cape Cod Bay with Northern Boundary of 42°04'56.5"N, 070°12'W to 42°12'N, 070°12'W then due west back to shore.	Waters bounded by: 42°04'56.5"N 070°12'W 42°12'N, 070°12'W 42°12'N, 070°30'W 42°30'N, 070°30'W 42°30'N, 069°45'W 41°40'N, 069°45'W then due west back to shore.	Waters bounded by: 42°30'N, 069°45'W 42°30'N, 067°27'W 42°09'N, 067°08'24"W 41°00'N, 069°05'W 41°40'N, 069°45'W then back to starting point.

The rule does not apply to waters inshore of COLREGS lines.

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).

Migratory Route



November 1 through April 30

Vessel speed is restricted in the following areas:

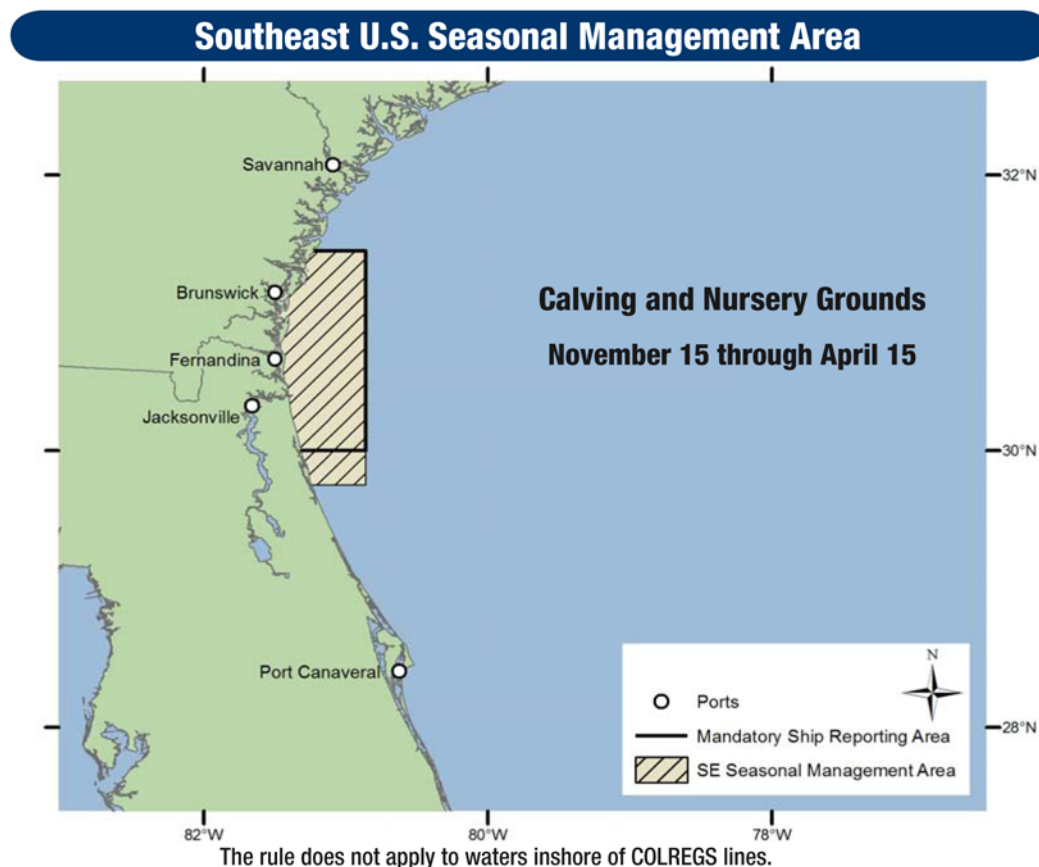
- Block Island Sound waters bounded by: 40°51'53.7"N 070°36'44.9"W, 41°20'14.1"N 070°49'44.1"W, 41°04'16.7"N 071°51'21.0"W, 40°35'56.5"N 071°38'25.1"W, then back to starting point.
- Within a 20 nm (37 km) radius of the following (as measured seaward from the COLREGS lines):
 - Ports of New York/New Jersey: 40°29'42.2"N 073°55'57.6"W
 - Entrance to the Delaware Bay (Ports of Philadelphia and Wilmington): 38°52'27.4"N 075°01'32.1"W
 - Entrance to the Chesapeake Bay (Ports of Hampton Roads and Baltimore): 37°00'36.9"N 075°57'50.5"W
 - Ports of Morehead City and Beaufort, NC: 34°41'32.0"N 076°40'08.3"W

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).

- Within a continuous area 20 nm from shore between Wilmington, NC, to Brunswick, GA, bounded by the following:

<u>Point</u>	<u>Latitude</u>	<u>Longitude</u>
A	34°10'30"N	077°49'12"W
B	33°56'42"N	077°31'30"W
C	33°36'30"N	077°47'06"W
D	33°28'24"N	078°32'30"W
E	32°59'06"N	078°50'18"W
F	31°50'00"N	080°33'12"W
G	31°27'00"N	080°51'36"W

and west back to the shore.

Calving and Nursery Ground

November 15 through April 15

Vessel speed is restricted in the area bounded to the north by latitude 31°27'N; to the south by latitude 29°45'N; to the east by longitude 080°51'36"W.

Temporary Dynamic Management Areas (DMAs) may also be established by NOAA Fisheries Service. Mariners are encouraged to avoid these areas or travel at 10 knots or less while transiting through these areas. NOAA Fisheries Service will announce DMAs to mariners through its customary maritime communication media.

(31) ENDANGERED SPECIES (WHALES AND SEA TURTLES) EASTERN SEABOARD. (Continued).**NOAA FISHERIES SERVICE**

Mandatory speed restrictions of 10 knots or less are required in Seasonal Management Areas along the U.S. East Coast during times when right whales are likely to be present. The purpose of this regulation is to reduce the likelihood of deaths and serious injuries to these endangered whales that result from collisions with vessels.

Vessels may operate at a speed greater than 10 knots only if necessary to maintain a safe maneuvering speed in an area where conditions severely restrict vessel maneuverability as determined by the pilot or master.

If a deviation from the 10 knot speed restriction is necessary, the following information must be entered into the vessel's logbook:

- Reasons for deviation
- Speed at which vessel is operated
- Latitude and longitude at time of deviation
- Time and duration of deviation
- Master of the vessel shall sign and date the logbook entry

(Supersedes NTM 1(31)19)

(NOAA)

(32) REPORTING DEPTH INFORMATION.

The many ships presently equipped with reliable depth recorders constitute a potential wealth of sounding data desired by charting agencies for the purpose of confirming charted depths or charting heretofore unknown depths. While oceanographic survey vessels remain the primary source of bathymetric data, depth recordings submitted by navy, coast guard and merchant vessels will make an important contribution to the vital task of charting the oceans.

Mariners are encouraged to obtain and report soundings whenever bridge routine and equipment capabilities will allow. The American Practical Navigator (Bowditch) (PUB9), Sections 3104-3109 describes the bathymetric requirements and provides some guidance for observing and reporting sonic soundings. However, soundings must be correlated to positions and accompanied by supportive data such as:

- (a) Detailed position/time information.
- (b) Mariner's own evaluation of positional accuracy (type of navigational system used and frequency of fixes).
- (c) Ship's course and speed with time of changes noted.
- (d) Echogram scales in use and graduated scales provided, with time of scale changes.
- (e) Draft of vessel and whether zero reference is corrected for draft.
- (f) Regular annotations of date/time marks on echograms to enable correlation with positions.
- (g) State of the tide and weather conditions.
- (h) Other related information considered appropriate.

An uncharted depth of 15 fathoms/28 meters or less should be considered an urgent danger to navigation, and should be reported via radio without delay. Follow up with substantiating evidence, including the echogram, track chart and/or position log and all relevant navigational data and forward to NGA at the earliest opportunity.

Charts submitted to amplify a sounding report will be replaced, on request, with a new chart, except that foreign charts will be replaced with the equivalent U.S. chart, if available. Data reports and charts should be sent to the National Geospatial-Intelligence Agency, Mail Stop N64-SH, 7500 GEOINT Dr., Springfield, VA 22150-7500, either directly by mail or via any U.S. Consulate.

(Supersedes NTM 1(32)19)

(NGA/SFHG)

(33) WARNING - MINED AREAS.

Mines of various types and ages pose a threat to navigation in many parts of the world. Once mined, an area can never be certified to be completely danger free. Sweeping produces only statistical probability of protection. Mines may still remain, having failed to respond to orthodox sweeping methods. Some swept areas have not been covered by modern surveys and may contain uncharted wrecks, shoals or other dangers to navigation.

Prudent seamanship in former mine fields, swept channels and swept areas includes:

(33) WARNING - MINED AREAS. (Continued).

- (a) Transit using only established routes or buoyed channels.
- (b) Avoid shallow water. Sweeping techniques often preclude sweeping in restricted waters.
- (c) Avoid fishing, trawling or any other form of submarine or seabed activity.
- (d) Mariners are advised to anchor with caution only in established anchorages.
- (e) Consult local authorities and regulations.

(Repetition NTM 1(33)19)

(U.S. NAVY)

(34) MINED AREAS REPORTED.

Minefields-Tarabulus, Libya.

In early 1973 Libya reported that the following areas had been mined. Although these areas are probably no longer a mine threat, they still represent a potential hazard to navigation. The areas reported by Libya are bounded by lines joining the following positions:

- | | |
|---------------------------------|---------------------------------|
| 1. (a) 32°52'48"N., 13°24'30"E. | 2. (a) 32°53'42"N., 13°20'36"E. |
| (b) 32°57'42"N., 13°24'30"E. | (b) 32°55'54"N., 13°18'00"E. |
| (c) 32°57'42"N., 13°18'00"E. | (c) 32°55'54"N., 13°15'00"E. |
| (d) 32°53'48"N., 13°22'18"E. | (d) 32°54'30"N., 13°15'00"E. |

(Repetition NTM 1(34)19)

(U.S. NAVY)

(35) MINESWEEPING - CAUTION - ATTENTION IS CALLED TO THE FOLLOWING INSTRUCTIONS.**Minesweeping Operations:**

- (a) United States vessels engaged in minesweeping operations or exercises are hampered while restricted in ability to maneuver. Other Vessels Must Keep Clear of Minesweepers (COLREGS 1972).
- (b) With a view to indicating the nature of the work on which they are engaged, these vessels will show the signals herein-after mentioned. For the public safety, all other vessels, whether steamers or sailing craft, must endeavor to keep out of the way of vessels displaying these signals and not approach them inside the distances mentioned herein, especially remembering that it is dangerous to pass between the vessels of a pair or group sweeping together.
- (c) All vessels towing sweeps are to show:
BY DAY.-A black ball at the fore mast and a black ball at the end of each fore yard.
BY NIGHT.-All around green lights instead of the black balls, and in a similar manner.
- (d) Vessels or formations showing these signals are not to be approached nearer than 1,000 meters on either beam and vessels are not to cross astern closer than 1,000 meters. Under no circumstances is a vessel to pass through a formation of minesweepers.
- (e) Minesweepers should be prepared to warn merchant vessels which persist in approaching too close by means of any of the appropriate signals from the International Code of Signals.
- (f) In fog, mist, falling snow, heavy rainstorms, or any other conditions similarly restricting visibility, whether by day or night, minesweepers while restricted in ability to maneuver will sound signals for a vessel towing (1 prolonged blast followed by 2 short blasts) according to 72 COLREGS.

Helicopters Conducting Minesweeping Operations:

- (a) The United States is increasingly employing helicopters to conduct minesweeping operations or exercises. When so engaged, helicopters, like vessels, are considerably hampered in their ability to maneuver. Accordingly, surface craft approaching helicopters engaged in minesweeping operations should take safety precautions similar to those described in (b) and (d) above with respect to minesweeping vessels.
- (b) Helicopters towing minesweeping gear and accompanying surface escorts, if any, will use all available means to warn approaching ships of the operations or exercises being conducted. Also, measures will be taken where practicable to mark or light the gear or objects being towed.
- (c) Minesweeping helicopters are equipped with a rotating beacon which has selectable red and amber modes. The amber mode is used during towing operations to notify/warn other vessels that the helicopter is towing. While towing, the helicopter's altitude varies from 15 to 95 meters above the water and speeds vary from 0 to 30 knots.
- (d) General descriptions and approximate dimensions for towed minesweeping gear currently being used in conjunction with helicopters are as follows:

(35) MINESWEEPING - CAUTION - ATTENTION IS CALLED TO THE FOLLOWING INSTRUCTIONS.
(Continued).

- (1) Mechanical sweep gear consisting, in part, of large lengths of submerged cables and explosive cutters. The only items normally visible on the surface are three to five international orange floats, depending upon the quantity of gear in use, which generally define the dimensions of the tow. The maximum width is 100 meters and the maximum distance behind the helicopter is 600 meters.
- (2) Acoustical sweep device weighing approximately 70 pounds. This device is towed behind the helicopter on a 250-meter orange polypropylene tow cable. When dead in the water, the gear will rise to the surface, supported by a yellow float.
- (3) A hydrofoil platform containing equipment used for magnetic influence sweeping. The platform is towed on the end of a 140-meter cable and trails electrodes in the water which extend 185 meters behind the platform. Very often, the aforementioned acoustical sweep device is towed in conjunction with this platform by attaching it to the end of one of the electrodes by a 30-meter polypropylene tow line. In this configuration, the total length of the tow is 215 and 350 meters, respectively, behind the hydrofoil platform and helicopter. Special care must be exercised when crossing astern of the hydrofoil platform as the towed cable is barely visible, and the attached acoustic device is submerged just beneath the surface and is not visible to surface vessels.
- (4) Helicopters employed in minesweeping operations and their tows may function during the day, and in various types of weather conditions. The major danger to any surface vessel is getting the various cables wrapped in its screws. Small craft also are subject to the risk of collision with the hydrofoil platform.

(Repetition NTM 1(35)19)

(U.S. NAVY)

(36) UNITED STATES - EXPLOSIVE ORDNANCE - WARNING - GENERAL.

The continental shelf of the United States contains many forms of unexploded ordnance (military weapons), and while some ordnance hazard areas are designated, many unexploded ordnance locations are not known. The types most likely to be encountered are underwater ordnance (weapons) such as torpedoes, mines, depth charges, and aerial bombs, but other ordnance items may be found. In general, any metallic object having fins, vanes, propellers, horns, or possibly plates screwed or bolted to an external surface should be regarded as dangerous. This warning is published for all shipmasters, trawlers, fishermen, divers or persons conducting operations on or near the ocean bottom, and provides instructions on the action to be taken when ordnance items or suspicious objects are encountered:

- (1) **OBJECTS SNAGGED OR NETTED:** Any object which cannot be immediately identified as a non-explosive (inert) item **MUST BE TREATED AS AN EXPLOSIVE ITEM.** If in any doubt about its identity, **TREAT IT AS EXPLOSIVE.** Non-explosive naval ordnance items such as practice torpedoes and practice mines will normally be painted bright orange, for ready identification. Any object which is not painted orange may be dangerous and possibly can explode if brought on board or bumped in any way. If an object is brought to the surface of the water and it cannot be immediately identified as an inert item, **DO NOT ATTEMPT TO BRING IT ON BOARD OR ALONGSIDE.** If possible, release the object immediately and radio the nearest Navy or Coast Guard activity giving position and description of the object. If the object cannot be released, or freed by cutting net or line, the following actions are advised:
 - (a) stream object as far aft as possible;
 - (b) notify nearest Navy or Coast Guard activity and stand by for instructions or help;
 - (c) position crew at forward end of vessel, keeping deckhouse between them and the object astern; exposed personnel should remain under cover if possible;
 - (d) maintain steerageway as necessary to stay in the area until help or instructions arrive.If unable to stand by while waiting for instructions because of deteriorating weather or sea conditions or other uncontrollable factors, keep the Navy or Coast Guard activity informed of your vessel's position **AND AVOID POPULATED AREAS, OTHER VESSELS, OR SHORE- OR SEA-BASED STRUCTURES.**
- (2) **OBJECTS BROUGHT ON BOARD:** If a suspected explosive object is not detected until trawl or net contents have been discharged on board the vessel, take the following actions:
 - (a) avoid any bump or shock to the object;
 - (b) secure it in place against movement;
 - (c) keep it covered up and wet down;
 - (d) radio nearest Navy or Coast Guard activity and standby for instructions.If unable to stand by while waiting for instructions because of deteriorating weather or sea conditions or other uncontrollable factors, keep the Navy or Coast Guard activity informed of your vessel's position **AND AVOID POPULATED AREAS, OTHER VESSELS, OR SHORE- OR SEA-BASED STRUCTURES.**

(36) UNITED STATES - EXPLOSIVE ORDNANCE - WARNING - GENERAL. (Continued).

- (3) **FLOATING OBJECTS:** If a floating object cannot be readily identified as non-explosive, IT MUST BE CONSIDERED TO BE EXPLOSIVE. DO NOT APPROACH, OR ATTEMPT TO RECOVER OR BRING ON BOARD. Report location immediately to the nearest Navy or Coast Guard activity and warn all other ships or craft in the vicinity. Try to keep the object in sight until instructions are received.

- (4) **NAVAL MINES:** Naval mines constitute a risk to shipping, fishing, underwater exploration, and other maritime interests. The different types of mines, the conditions under which they are most likely to be sighted, and the recommended action are as follows:

FLOATING MINES- Consider all floating mines to be live and dangerous. DO NOT TOUCH OR APPROACH. The possibility of drifting mines being camouflaged with seaweed or other innocent appearing floating objects should be borne in mind and avoiding action taken. The following procedures and precautions are recommended:

GROUND MINES- ON THE HIGH SEAS. Report the location of the mine by the most rapid means as soon as circumstances permit, this report is to be similar to that required for any hazard to navigation (See para 5). Mines sighted in anchorage areas or other patrolled water should, if circumstances permit, be kept under observation and reported to the nearest Navy or Coast Guard activity (See para 5). The recovery or handling of the mine should be done only by qualified explosive ordnance disposal personnel. If a mine is drifting down on a vessel at anchor and it cannot be avoided by other means, it is recommended that a stream of water from a fire hose be played near the mine to force it away from the vessel. **WARNING:** Mines may explode if a stream of water is played near them. Exposed personnel should remain under cover until danger is past.

MOORED MINES- Moored mines may sometimes be seen several feet under the surface if the water is clear, or the mine may be floating on the surface. Often several mines or even a long row of the mines can be seen. Usually the sighting of one or more such mines indicates the presence of a minefield. Approaching the general vicinity of such mines is dangerous and should not ordinarily be undertaken by vessels. When mines are sighted, the location of the mines should be determined as accurately as possible, the area should be buoyed if this is feasible, all ships in the vicinity should be warned, and the appropriate Navy or Coast Guard activity should be notified immediately. Ground mines are normally laid in water so deep that they will not be seen unless the water is very clear. However, in very clear water with a hard white sand bottom, even a camouflaged mine can often be located because of the long, regular shadow it casts. The sighting of such a mine may indicate a minefield in the neighborhood. Approaching the general vicinity of such a mine is very dangerous. If a mine is sighted, the location should be determined as accurately as possible and buoyed, all ships in the vicinity should be warned, and the appropriate Navy or Coast Guard activity should be notified immediately.

BEACHED MINES- Any of the above types of mine may be found on the beach, either thrown up by the waves or mislaid by aircraft. Any mine found beached or floating close inshore should be reported at once to the nearest Navy, Coast Guard, military, or civil authority, and the mine should be kept under guard until the arrival of responsible authorities. No person except qualified explosive ordnance disposal personnel should be allowed closer than 400 yards.

- (5) **REPORTING OF SUSPICIOUS OBJECTS RESEMBLING MINES:** Ships frequently report objects resembling mines but give insufficient information to properly evaluate the reports. As a result, needless time and expense is incurred only to find that they are not mines but other floating objects. **HOWEVER, VESSELS SHOULD NOT ATTEMPT TO RECOVER OBJECTS RESEMBLING MINES OR PASS CLOSE ABOARD FOR POSITIVE IDENTIFICATION - KEEP WELL CLEAR.** Since mines are a danger to life and property at sea, masters of ships sighting unidentified or suspicious objects are requested to furnish the following information to the nearest Navy or Coast Guard radio station or activity:

- (a) Position of object, and how closely it was approached.
- (b) Size, shape, condition of painting, and the presence of marine growth.
- (c) Whether or not horns or rings are attached.
- (d) Whether or not definite identification possible.

(Repetition NTM 1(36)19)

(U.S. NAVY)

(37) CAUTION - OIL WELL STRUCTURES IN WATERS CONTIGUOUS TO THE U.S. AND ITS TERRITORIES.

Caution should be exercised when navigating in the waters contiguous to the U.S. and its territories particularly in the Gulf of Mexico, Santa Barbara Channel, California, and Cook Inlet, Alaska, in order to avoid collision with oil well structures and their associated mooring piles, anchor and mooring buoys, etc.

(37) CAUTION - OIL WELL STRUCTURES IN WATERS CONTIGUOUS TO THE U.S. AND ITS TERRITORIES.
(Continued).

In general, oil well structures can be identified at night by the display of one or more quick flashing white or red lights, however, ships can expect to encounter unlighted structures as well. Structures may be equipped with a fog signal consisting of a horn sounding one 2-second blast every 20 seconds. Submerged wells may be marked by lighted or unlighted buoys.

Shipping safety fairways have been established through the concentration of oil wells in the Gulf of Mexico and Santa Barbara Channel. Mariners are encouraged to use these fairways and should avoid anchoring within a safety fairway. Certain areas adjacent to shipping safety fairways have been charted as fairway anchorages.

(Repetition NTM 1(37)19)

(USCG)

(38) CAUTION REGARDING APPROACH OF SINGLE VESSELS TOWARD NAVAL FORMATIONS AND CONVOYS.

A formation of warships or a convoy is more difficult to maneuver than a single ship. Therefore, the attention of masters is called to the danger of all concerned which is caused by a single vessel approaching a formation of warships or convoy so closely as to involve risk of collision, or attempting to pass ahead of, or through such a formation or convoy. All ships are therefore cautioned to employ the customary manners of good seamanship and, where there is ample sea room, adopt early measures to keep out of the way of a formation of warships or convoy. The fact that in the interests of safety a single vessel should keep out of the way of a formation or convoy does not entitle vessels sailing in company to proceed without regard to the movements of the single vessel. Vessels sailing in formation or convoy should accordingly keep a careful watch on the movements of any single vessel approaching the squadron or convoy and should be ready, in the case the single vessel does not keep out of the way, to take such action as will best aid to avert collision.

(Repetition NTM 1(38)19)

(U.S. NAVY)

(39) NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY DISTRIBUTION SYSTEM.

GENERAL INFORMATION AND CUSTOMER ORDERING GUIDANCE.

DEFENSE LOGISTICS AGENCY FOR AVIATION-MAPPING CUSTOMER OPERATIONS (DSCR-QAM).

The Defense Logistics Agency for Aviation is available to assist customers during normal duty hours, Monday through Friday, 0730 to 1730 (except holidays) Eastern Time. After hours messages are recorded for processing on the next business day. The office can respond to inquiries regarding catalog usage, ordering procedures, product availability, disposition of excess stock, subscriptions and many other GGI&S related activities and interests.

Defense Logistics Agency for Aviation
Mapping Customer Operations (DSCR-QAM)
8000 Jefferson Davis Highway
Richmond, VA 23297-5339
Phone: 804-279-6500
Toll Free: 800-826-0342
DSN: 695-6500
Web site: www.dla.mil/aviation/offers/products/mapping.aspx
email: acctmgr@dlamail.mil

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA) OFFICE OF CORPORATE COMMUNICATIONS.

The NGA Office of Corporate Communications is the point of contact for public queries. Phone: 571-557-5400. For assistance with NGA products and services, email: queries1@nga.mil.

OBTAINING NGA NAUTICAL CHARTS AND PUBLICATIONS.

DoD customers should refer to the ordering procedures contained in the Catalog of Maps, Charts and Related Products. Requests for NGA products from non-DoD U.S. Government Agencies are on a reimbursable basis.

(1) CHARTS

Civilian users can obtain information about purchasing NOAA and NGA paper charts at:
<https://www.nauticalcharts.noaa.gov/index.html>.

(39) NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY DISTRIBUTION SYSTEM. (Continued).

DoD users and DoD contractors may direct questions concerning the availability and distribution of announced hardcopy charts to the Defense Logistics Agency (DLA) Mapping Customer Operations at 1-800-826-0342 or 804-279-6500; DSN 695-6500; Fax 804-279-6524, or by visiting: <http://www.dla.mil/aviation/offers/products/mapping.aspx>

NGA standard nautical hardcopy chart products are made available and distributed by three different authorized methods:

- 1) The mailing and shipping of charts to Department of Defense (DoD) customers and other authorized U.S. Government users by the Defense Logistics Agency (DLA)
- 2) The posting of selected new charts (as large .pdf print files) to NGA websites for access by Department of Defense (DoD) customers and other authorized U.S. Government users
- 3) The print-on-demand access of all public release NGA charts available for purchase through official NOAA certified printers, on behalf of NGA

The posting of selected new NGA charts (as large .pdf print files) to NGA websites for access by Department of Defense (DoD) customers and other authorized U.S. Government users is normally made the day after NGA clears the New Edition for release and the chart is sent to DLA for printing and automatic distribution. The traditional NGA printed paper chart is then usually received onboard vessels some six to eight weeks later from DLA. For those charts releasable for public sale, they are also made available a week after NGA release through official NOAA certified printers at: <https://www.nauticalcharts.noaa.gov/publications/print-agents.html>. Regardless of how the NGA chart is obtained by the customer (downloaded from NGA website, distributed from DLA, or obtained through NOAA printers) each is official, meets all Federal chart carriage requirements, and should be put into service when officially announced in the US Notice to Mariners. Each chart must then be updated and maintained with all applicable corrections from the date shown in the lower left corner of the chart through the most current US Notice to Mariners in order to be considered safe for navigation. For questions, contact NGA at mcdepod@nga.mil.

Through a special arrangement between NOAA and NGA, all NOAA charts are also available (as large .pdf print files) on the NGA websites for Department of Defense (DoD) customers and other authorized U.S. Government users. These NOAA chart files are updated every week with all Notice to Mariners corrections applied (NGA, USCG, and Canadian Coast Guard). The official NGA websites for DoD customers and other authorized U.S. Government users to download selected NGA and NOAA charts are:

- NIPRNet: <https://www.geo.nga.mil/products/dnc/epods/index.htm>
- SIPRNet: <https://www.geoint.nga.smil.mil/products/dnc1/epods/index.htm>
- JWICS: <https://www.geoint.nga.ic.gov/products/dnc1/epods/index.htm>

(2) PUBLICATIONS

New editions of NGA publications, announced in the Notice to Mariners, are available through electronic access at the Maritime Safety Web site: (<https://msi.nga.mil/NGAPortal/MSI.portal>).

Although most NGA navigational publications are no longer offered in printed form from U.S. Government sources, authorized reproductions of these publications can still be purchased from commercial vendors. Known commercial vendors of authorized reproductions are listed below:

ProStar Publications Inc. (<http://www.prostarpublishations.com/b1/index.php>)
 Maryland Nautical (<https://mdnautical.com/491-government-publications>)
 American Nautical Services (<http://www.amnautical.com/collections/nga-books>)
 Landfall Navigation (<http://www.landfallnavigation.com/govpub.html>)
 Islamorada Internacional (Panama Canal) (http://www.islamorada.com/english/nautical_publications/)
 Horizon Nautical, Inc. (<http://www.horizon-usa.net>)
 Celestaire (<https://www.celestaire.com/product-category/bookssoftware.html>)
 Paradise Cay Publications (<http://www.paracay.com/nautical/index.php>)
 Safe Navigation Inc. (<http://www.safenavigation.com>)
 Pilothouse (<https://www.pilothousecharts.com>)
 Bluewater Books and Charts (<http://www.bluewaterweb.com>)

This directory represents only that these vendors may offer sale of NGA publications. It is neither exclusive nor exhaustive, and in no way constitutes an endorsement by NGA of the listed vendors, nor the services or products they provide. Vendors of authorized NGA publications that wish to be included in this directory should notify the NGA Maritime Safety Office by email to webmaster_nss@nga.mil or by telephone at 571-557-7103.

(39) NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY DISTRIBUTION SYSTEM. (Continued).

For additional information, visit the Products Catalog page at the Maritime Safety Web site:
<https://msi.nga.mil/NGAPortal/MSI.portal>.
(Repetition NTM 1(39)19)

(NGA/NOAA)

(40) INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO).

The International Hydrographic Organization (IHO) was originally established in 1921 as the International Hydrographic Bureau (IHB), the present name having been adopted in 1970 as a result of a revised international agreement between the member nations. However, the former name, International Hydrographic Bureau, was retained for the IHO's administrative body of three Directors and a small Staff at the Organization's headquarters in Monaco.

The **Vision** of the IHO is to be the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment.

The **Mission** of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use

The IHO sets forth hydrographic standards as they are agreed upon by the member nations. All Member States are urged and encouraged to follow these standards in their surveys, nautical charts and publications. As these standards are uniformly adopted, the products of the world's hydrographic and oceanographic offices become more uniform. Much has been done in the field of standardization since the Bureau was founded.

During the 19th century, many maritime nations established hydrographic offices to provide means for improving the navigation of naval and merchant marine vessels by providing nautical publications, nautical charts and other navigational services. Non-uniformity of hydrographic procedures, charts and publications was much in evidence. In 1889, an International Marine Conference was held at Washington, D.C., and it was proposed to establish a "permanent international commission." Similar proposals were made at the sessions of the International Congress of Navigation held at St. Petersburg in 1908 and again in 1912.

In 1919 the hydrographers of Great Britain and France cooperated in taking the necessary steps to convene an international conference of hydrographers. London was selected as the most suitable place for this conference and on July 24, 1919, the First International Conference opened, attended by the hydrographers of 24 nations. The object of the conference was clearly stated in the invitation to attend. It read, "To consider the advisability of all maritime nations adopting similar methods in the preparation, construction, and production of their charts and all hydrographic publications; of rendering the results in the most convenient form to enable them to be readily used; of instituting a prompt system of mutual exchange of hydrographic information between all countries; and of providing an opportunity for consultations and discussions to be carried out on hydrographic subjects generally by the hydrographic experts of the world." In general, this is still the purpose of the International Hydrographic Organization. As a result of the conference, a permanent organization was formed and statutes for its operations were prepared. The International Hydrographic Bureau, now the International Hydrographic Organization, began its activities in 1921 with 18 nations as members. The Principality of Monaco was selected as the headquarters because of its easy communication with the rest of the world and also because of the generous offer of Prince Albert I of Monaco to provide suitable accommodations for the Bureau in the Principality. The IHO, including the 3 Directors and their staff, is housed in its own headquarters which were built and are maintained by the Government of Monaco.

Officers and enlisted men of naval vessels and masters, mates or navigating personnel of merchant ships, including pleasure craft, are welcome to visit the Bureau's Office at 4b quai Antoine 1^{er}, Monte-Carlo.

The works of the IHO are published in both French and English and distributed through various media. The catalogue of Publications page at: http://www.iho.int/iho_pubs/IHO-Catalogue.htm contains a list and brief description of all IHO publications. These publications have been arranged under classification criteria agreed by Member States in 2009 and reported in IHO Circular Letter 13/2009. Most IHO publications are free of charge and may be downloaded from the IHO Publications page at: http://www.iho.int/iho_pubs/IHO_Download.htm. Inquiries as to the availability of the publications should be made directly to the International Hydrographic Organization, 4b quai Antoine 1^{er}, B.P. 445, MC 98011 MONACO CEDEX, Principality of Monaco, phone: 377 93 10 81 00, fax: 377 93 10 81 40, email: info@iho.int, web site: <http://www.iho.int/srv1>

In order that the work of the IHO may be reviewed and future plans developed, conferences are held every five years. They are attended by delegates from member nations.

Presently, the following nations are Member States of the International Hydrographic Organization:

(40) INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO). (Continued).

Algeria	Guatemala	Portugal
Argentina	Iceland	Qatar
Australia	India	Romania
Bahrain	Indonesia	Russia
Bangladesh	Iran	Saudi Arabia
Belgium	Ireland	*Serbia
Brazil	Italy	Seychelles
Brunei	Jamaica	Singapore
Bulgaria	Japan	Slovenia
Burma	Kuwait	Solomon Islands
Cameroon	Latvia	South Africa
Canada	Malaysia	South Korea
Chile	Malta	Spain
China	Mauritius	Sri Lanka
Colombia	Mexico	Suriname
*Congo, Democratic Republic of the	Monaco	Sweden
Croatia	Montenegro	*Syria
Cuba	Morocco	Thailand
Cyprus	Mozambique	Tonga
Denmark	Netherlands	Trinidad and Tobago
Dominican Republic	New Zealand	Tunisia
Ecuador	Nigeria	Turkey
Egypt	North Korea	Ukraine
Estonia	Norway	United Arab Emirates
Fiji	Oman	United Kingdom
Finland	Pakistan	United States
France	Papua New Guinea	Uruguay
Georgia	Peru	*Vanuatu
Germany	Philippines	Venezuela
Greece	Poland	Vietnam

* IHO Membership suspended
(Supersedes NTM 1(40)19)

(IHO)

(41) INTERNATIONAL DISTRESS SIGNALS.

1. All seamen should be familiar with the international distress signals and procedures, both for recognition purposes and for self-reliance in the event of distress where captain and officers may have been incapacitated.
2. Short range distress signals, limited to range of visibility or audibility are:
 - (a) "SOS" signal in Morse Code made by any audio or visual means. [...-----]
 - (b) International Code of Signals "NC".
 - (c) Hoisting any square flag with a ball or anything resembling a ball, above or below it.
 - (d) Flames made visible (as a burning oil barrel).
 - (e) A rocket parachute flare or hand held flare showing a red light.
 - (f) Rockets or shells, throwing red stars fired one at a time at short intervals.
 - (g) Orange smoke, as emitted from a distress flare.
 - (h) A gun or other explosive signal fired at intervals of about one minute.

(41) INTERNATIONAL DISTRESS SIGNALS. (Continued).

- (i) A continuous sounding of any fog-signal apparatus.
 - (j) Slowly and repeatedly raising and lowering arms outstretched to each side.
- 3. Radio distress signals via radiotelephone:
 - (a) For MF Radiotelephone. Effective 01 August 2013, the Coast Guard (CG) terminated the radio guard for the international distress and safety frequency 2182 kHz and the international Digital Selective Calling (DSC) distress and safety frequency 2187.5 kHz. This closure also terminated the marine information and weather broadcasts transmitted on 2670 kHz. This termination decision was made after a review of CG medium frequency (MF) communications sites revealed significant antenna and infrastructure support degradation that put the CG at risk of not being able to receive and respond to calls for assistance on the 2 MHz distress frequencies.
 - (b) For VHF FM Radiotelephone. Set transmitter to VHF FM Channel 16 and transmit the distress message as outlined in (c) below.
 - (c) Transmit the distress message consisting of the word MAYDAY repeated three times followed by the vessel's identification repeated three times. Immediately continue by giving the position; nature of distress; number of people on board; nature of assistance required and any other information which may facilitate rescue authorities. Pause to await acknowledgment and if nothing is heard within one minute, repeat the same again until acknowledged. Speak the distress message clearly and calmly.
- 4. Radio distress signals via satellite:
 - (a) For satellite terminals equipped with a distress button. Activate the button and follow displayed menu instructions.
 - (b) For satellite terminals without a distress button. Place a call to nearest Rescue Coordination Center or system operator and provide identification, position, nature of distress, number of persons on board and type of assistance requested.
- 5. Radio distress signals via Digital Selective Calling (DSC): The distress call should be composed to include ship's position information, the time at which the position was taken, and the nature of distress. If the DSC radio is connected to a navigation receiver, position and time-of-position should already be included. The distress call should be transmitted on VHF Channel 70 (156.525 MHz), or the HF frequencies 4207.5, 6312, 8414.5, 12577 and 16804.5 kHz. An acknowledgment of the distress call should be received on the DSC frequency. Once an acknowledgment has been received, the radio distress procedures via radiotelephone (above) should be followed on the associated voice channel: VHF Channel 16 (156.800 MHz), 4125, 6215, 8291, 12290 and 16420 kHz. For DSC distress calls on VHF Channel 70, the radio distress procedures via radiotelephone should be followed on the associated voice channel if an acknowledgment is not received after 5 min.
- 6. Simple to follow instructions for the operation of auto alarms, radiotelephone, DSC and satellite communications equipment should be clearly posted in the radio rooms of all ships. Procedures outlined here are purposely brief. Complete information on emergency radio procedures is contained in Chapter 4 of Radio Navigational Aids (Pub. 117).
- 7. Procedures for canceling false distress alerts: If a distress alert is inadvertently transmitted, the following steps shall be taken to cancel the distress alert:
 - (a) VHF Digital Selective Calling:
 - (1) Reset the equipment immediately;
 - (2) Set to Channel 16; and
 - (3) Transmit a broadcast message to "All stations" giving the ship's name, call sign or registration number, and MMSI, and cancel the false distress alert.
 - (b) HF Digital Selective Calling:
 - (1) Reset the equipment immediately;
 - (2) Tune for radiotelephony on the distress and safety frequency in each band in which a false distress alert was transmitted; and
 - (3) Transmit a broadcast message to "All stations" giving the ship's name, call sign or registration number, and MMSI, and cancel the false distress alert frequency in each band in which a false distress alert was transmitted.

(41) INTERNATIONAL DISTRESS SIGNALS. (Continued).

- (c) INMARSAT ship earth station: Immediately notify the appropriate Rescue Coordination Center that the alert is canceled by sending a distress priority message by way of the same land earth station through which the false distress alert was sent. Provide ship name, call sign or registration number, and INMARSAT identity with the canceled alert message.
- (d) EPIRB: Once an EPIRB is switched on, whether accidental or intentionally, the user should make every reasonable attempt to communicate with SAR authorities by other means to advise them of the situation before turning the EPIRB off.
- (e) General and other distress alerting systems: Notwithstanding paragraphs (a) through (e) of this section, ships may use additional appropriate means available to them to inform the nearest appropriate U.S. Coast Guard rescue coordination center that a false distress alert has been transmitted and should be canceled.

(Repetition NTM 1(41)19)

(IMO/USCG)

(42) WORLDWIDE NAVIGATIONAL WARNING SERVICE (WWNWS).

The Worldwide Navigational Warning Service (WWNWS) was established in 1977 through the joint efforts of the International Hydrographic Organization (IHO) and the International Maritime Organization (IMO). The WWNWS is a coordinated global service for the promulgation of information on hazards to navigation which might endanger international shipping.

The WWNWS is an internationally and nationally coordinated service for the promulgation of maritime safety information, which includes navigational warnings that contain urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea. Maritime safety information is of vital concern to all ships. It is therefore essential that common standards are applied to the collection, editing and dissemination of this information. Only by doing so will the mariner be assured of receiving the information they need, in a form which they understand, at the earliest possible time. Such information includes the following: failure and/or changes to major navigational aids, newly discovered wrecks or natural hazards including icebergs in or near main shipping lanes, hazardous military operations and areas where search and rescue, anti-pollution operations, acts of piracy and cable-laying or other underwater activities are taking place.

The WWNWS divides the world into 21 Navigation Warning Areas (NAVAREAS) (see graphic page, I-1.49). A NAVAREA is a geographical sea area established for the purposes of coordinating the collection of maritime safety information and the broadcast of navigational warnings.

Within each NAVAREA one national authority, designated the NAVAREA Coordinator, assumes responsibility for the coordination and promulgation of navigational warnings. Designated "National Coordinators" of other coastal states in a NAVAREA are responsible for collecting and forwarding information to the NAVAREA Coordinator. In the Baltic, a Sub-area Coordinator has been established to filter information prior to passing to the NAVAREA Coordinator.

NAVAREA Coordinators are responsible for the exchange of information as appropriate with other coordinators, including that which should be further promulgated by charting authorities in Notice to Mariners. Broadcast schedules appear in the International Maritime Organization's Master Plan of Shore-Based Facilities for the Global Maritime Distress and Safety System (GMDSS.1/Circ.22), Annex 8, and in the lists of radio signals published by various hydrographic authorities (in the U.S., Pub. 117). Transmissions usually occur frequently enough during the day to fall within at least one normal radio watch period, and the information is repeated with varying frequency as time passes until either the danger has passed or the information on it has appeared as a Notice to Mariners.

NAVAREA I (United Kingdom)
 United Kingdom Hydrographic Office
 Admiralty Way
 Taunton
 Somerset TA1 2DN
 United Kingdom
 Phone: 44 1823 353448
 Fax: 44 1823 322352
 Email: navwarnings@btconnect.com
 Web site: <https://www.admiralty.co.uk/maritime-safety-information/radio-navigational-warnings>

Baltic Sea Sub-Area Coordinator
 Swedish Maritime Administration
 NtM/BALTICO
 SE-601 78 Norrköping
 Sweden
 Phone: 46 771 63 06 05
 Email: ufs@sjofartsverket.se
 Web site: <http://www.sjofartsverket.se/baltico>

(42) WORLDWIDE NAVIGATIONAL WARNING SERVICE (WWNWS). (Continued).

NAVAREA II (France)
 Department "Information et Ouvrages Nautiques"
 Service Hydrographique et Océanographique de la Marine
 13 Rue du Chatellier, CS 92803
 29228 Brest Cedex2
 France
 Phone: 33 2 56 31 24 24 (Duty Officer, H24)
 33 6 24 80 08 92 (Duty Officer, spare)
 Fax: 33 2 56 31 25 84
 Email: coord.navarea2@shom.fr (H24)
 coord.navarea2@gmail.com (spare)
 Web site: <http://diffusion.shom.fr/navarea-en-vigueur>

NAVAREA III (Spain)
 Director del Instituto Hidrográfico de la Marina
 Plaza de San Severiano No 3
 11007 Cadiz
 Spain
 Phone: 34 956 599409/599414
 Fax: 34 956 599396/545347
 Email: avisosihm@fn.mde.es
 ihmesp@fn.mde.es
 Web site: http://www.armada.mde.es/ihm/Aplicaciones/Navareas/Index_Navareas_xml_eng.htm

NAVAREA IV AND XII (United States)
 Maritime Safety Office
 Mail Stop N64-SH
 7500 Geoint Drive
 Springfield,
 Virginia 22150-7500
 United States of America
 Phone: 1 571 557 5455
 Fax: 1 800 DMA NAVY (362 6289)
 Email: NAVSAFETY@nga.mil
 Web site: <https://msi.nga.mil/NavWarnings>

NAVAREA V (Brazil)
 Head of Safety of Navigation Information Division
 Rua Barão de Jaceguay, s/nº
 Ponta d'Areia - Niteroi - RJ
 CEP-24048-900
 Brazil
 Phone: 55 21 2189-3023/3210
 Fax: 55 21 2189-3210/2620-0073
 Email: ana.silva@chm.mar.mil.br
 segnav@chm.mar.mil.br
 Web site: <https://www.marinha.mil.br/chm/>

NAVAREA VI (Argentina)
 Maritime Safety Department
 Servicio Hidrografía Naval
 Avenida Montes de Oca 2124
 C 1270ABV-Buenos Aires
 Argentina
 Phone: 54 11 4301-2249/4301-0061/67 Ext 4028
 Fax: 54 11 4301-2249
 Email: snautica@hidro.gov.ar
 shn_organint@hidro.gov.ar
 Web site: <http://www.hidro.gob.ar/Nautica/INv.asp>

NAVAREA VII (South Africa)
 Hydrographer, SA Navy
 Hydrographic Office
 Private Bag X1
 Tokai
 7966 Cape Town
 Republic of South Africa
 Phone: 27 21 787 2408 or 787 2445/2444
 Fax: 27 21 787 2233 or 787 2228 (24hrs)
 Email: hydrosan@iafrica.com
 navcomcen.cape@sanavy.co.za
 Web site: <http://www.sanho.co.za/>

NAVAREA VIII (India)
 Joint Director of Hydrography
 Maritime Safety Information Services (MSIS)
 National Hydrographic Office
 107-A, Rajpur Road
 P.B. No. 75, Dehradun
 Uttarakhand-248 001
 India
 Phone: 91 135 2747365
 Fax: 91 135 2748373
 Email: msis-inho@navy.gov.in
 (For urgent NAVAREA promulgation)
 inho@navy.gov.in
 Web site: <http://www.hydrobharat.nic.in>

NAVAREA IX (Pakistan)
 Area Coordinating Office NAVAREA IX
 PN Hydrographic Department
 11, Liaquat Barracks
 Karachi-75530
 Pakistan
 Phone: 92 21 48506821/48506152/485061511
 Fax: 92 21 9201623/99203246
 Email: hydrokp@paknavy.gov.pk
 hydrokp@gmail.com
 Web site: <http://www.paknavy.gov.pk/hydro/index.asp>

(42) WORLDWIDE NAVIGATIONAL WARNING SERVICE (WWNWS). (Continued).

NAVAREA X (Australia)
 Search and Rescue
 Australian Maritime Safety Authority
 GPO Box 2181
 Canberra, ACT, 2601
 Australia
 Phone: 61 2 6230 6811
 Fax: 61 2 6230 6868
 Email: rccaus@ams.gov.au
 Web site: <http://www.amsa.gov.au/safety-navigation/navigation-system/maritime-safety-information-database>

NAVAREA XI (Japan)
 Director, Notices to Mariners Office
 Hydrographic and Oceanographic Department
 Japan Coast Guard
 3-1-1, Kasumigaseki, Chiyoda-ku
 Tokyo 135-8932
 Japan
 Phone: 81 3 3595 3571
 Fax: 81 3 3595 3647
 Email: tuho@jodc.go.jp
jcg-tuho@navarea11.go.jp
 Web site: <http://www1.kaiho.mlit.go.jp/jhd-E.html>

NAVAREA XIII (Russian Federation)
 Chief, Notice to Mariners Division
 Department of Navigation and Oceanography
 Ministry of Defence, Russian Federation
 2 Atamanskaya St.
 St Petersburg 191167
 Russian Federation
 Phone/Fax: 7 812 717 59 00
 Email: unio_navarea@mil.ru
 Web site: http://structure.mil.ru/structure/forces/hydrographic/info/nav_war/more.htm?id=11837985@morfPressConference-New

NAVAREA XIV (New Zealand)
 New Zealand Hydrographic Authority
 Land Information New Zealand
 Radio New Zealand House
 155 The Terrace
 P O Box 5501
 Wellington 6145
 New Zealand
 Phone: 64 4 460 0110 (office hours)
 64 27 687 9536 (24 Hrs.)
 64 27 704 6994 (24 Hrs.)
 Fax: 64 4 498 3535
 Email: navareaxiv@linz.govt.nz
 Web site: <https://www.maritimenz.govt.nz/commercial/safety/maritime-radio/navigational-warnings.asp>

NAVAREA XV (Chile)
 Director, Hydrographic and Oceanographic Service of the
 Chilean Navy
 Errázuriz 254
 Playa Ancha
 Valparaíso
 Chile
 Phone: 56 32 2266666
 Fax: 56 32 2266542
 Email: navarea15@shoa.cl
 Web site: <http://www.shoa.mil.cl>

NAVAREA XVI (Peru)
 Director
 Dirección de Hidrografía y Navegación
 Calle Roca No. 118
 Chucuito, Callao
 Perú
 Phone: 51-1 207 8160
 Fax: 51-1 207 8178
 Email: dihidronav@dhn.mil.pe
fpenaranda@dhn.mil.pe
 Web site: <http://www.dhn.mil.pe>

NAVAREA XVII AND XVIII (Canada)
 Operational Support
 Canadian Coast Guard
 Centennial Towers
 200 Kent Street
 Ottawa
 Ontario K1A 0E6
 Canada
 Phone: 1 613 925 4471
 Fax: 1 613 925 4519
 Email: navarea17.18@innav.gc.ca
 Administrative matters:
 Phone: 1 613 990 7572
 Email: bakker1@dfo-mpo.gc.ca
 Web site: <http://www.ccg-gcc.gc.ca/>

NAVAREA XIX (Norway)
 Department of Maritime Safety
 Norwegian Coastal Administration
 Postbox 1502
 6025 Ålesund
 Norway
 Phone: 47 78 943000
 Fax: 47 78 989899
 Email: navarea19@kystverket.no
 Web site: www.navarea-xix.no

(42) WORLDWIDE NAVIGATIONAL WARNING SERVICE (WWNWS). (Continued).

NAVAREA XX AND XXI (Russian Federation)

Federal State Unitary Enterprise

“Rosmorport”

Bld. 7, 19 Sushevskaya Street

Moscow

127055

Russian Federation

Phone: 7 495 626-14-25 exts

(1060/1707/1746/1710)

Fax: 7 495 626-12-39

Email: navarea@rosmorport.ru

Chairman, IHO World-wide Navigational Warning Service

Mr. Peter Doherty

Mail Stop N64-SH

7500 Geoint Drive

Springfield, VA 22150-7500

Phone: 011 571 557 6746

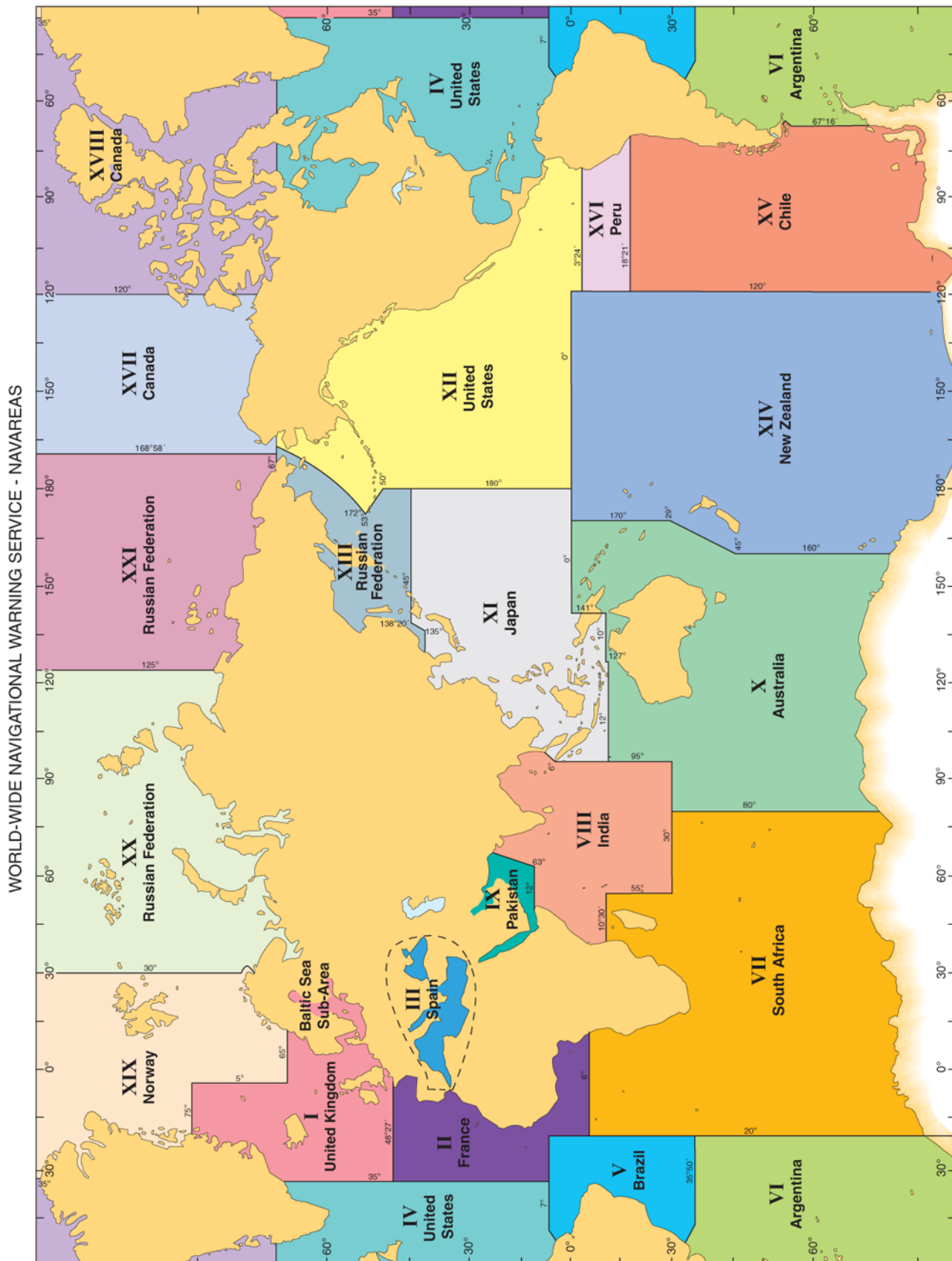
Fax: 011 571 558 3261

Email: Peter.M.Doherty@nga.mil

(Supersedes NTM 1(42)19)

(IHO/IMO/NGA)

(42) WORLDWIDE NAVIGATIONAL WARNING SERVICE (WWNWS). (Continued).



(43) WEATHER OBSERVATION REPORTS.

All ships are encouraged to participate in the international Voluntary Observing Ship (VOS) program. For information, and to arrange assistance from a U.S. National Weather Service Port Meteorological Officer (PMO) contact:

Voluntary Observing Ship Program
NOAA/NWS Headquarters
1325 East West Highway
Building SSMC2
Silver Spring, MD 20910
Telephone: (228) 688-1457
Fax: (228) 688-3923
email: vos@noaa.gov
Web site: <http://www.vos.noaa.gov>

Details on the coding and transmission of weather observations may be found in “Observing Handbook No. 1” provided to ships participating in the U.S. VOS program. The U.S. VOS program also makes available a PC software e-logbook known as TurboWin, which greatly assists in coding and transmitting VOS observations as well as providing ships the capability to participate in the USCG Automated Mutual Assistance Vessel Rescue System Program (AMVER) creating ships position reporting, globally. <http://amveruscg.blogspot.com/2012/01/what-is-amver.html>

Detailed information on the dissemination of National Weather Service marine products including radiofax, such as frequency and scheduling information may be found in NGA Publication 117, the British Admiralty List of Radio Signals Volume 3(2), and at <http://www.nws.noaa.gov/om/marine/home.htm> (includes links to products).

GENERAL INSTRUCTION FOR REPORTING WEATHER OBSERVATIONS

CODED WEATHER MESSAGES: All weather report messages by radio, email or Inmarsat will be coded in World Meteorological Organization (WMO) ship synoptic code FM13-X and/or BUFR

STANDARD SYNOPTIC OBSERVATION TIMES: The regular synoptic hours for reporting are 0000, 0600, 1200, and 1800 UTC. However, watch schedules and other ship functions sometimes make it impractical to meet the synoptic weather reporting schedule. Weather observations may also be submitted at the intermediate hours of 0300, 0900, 1500, and 2100 UTC. These should be reported as soon as possible, but no later than three (3) hours after the synoptic observation time. Hourly observations are accepted as well.

TIMELINESS AND REPORT VALUE: All weather reports should be transmitted as soon as possible to the National Weather Service. Weather reports can be ingested by computer forecast models for only for a limited time after the reporting hour. Major computer programs are run at all synoptic hours and a few programs are run every three (3) hours. Forecasters look at, and use, all timely reports in making their forecasts and warnings.

SPECIAL WEATHER OBSERVATIONS

TROPICAL STORMS/HURRICANES: Hurricane season has been designated June 1 through November 30 because of the number of tropical storms and hurricanes during the period. Many special programs are in operation during this season and it is requested that the observation schedule, when within 300 miles of a named tropical storm or hurricane, it is standard practice, worldwide, to transmit weather reports every three (3) hours (00, 03, 06, 09, etc.). Hourly reports when within a storm (wind speed 48 knots or higher) or special reports for conditions not forecast, much worse than forecast, or for sudden weather changes) should be sent whenever conditions warrant.

SPECIAL REQUESTS FOR OBSERVATIONS: The U.S. National Weather Service may request ships located in areas of suspected storm development to take special observations at more frequent intervals than the routine six (6) hourly synoptic observation times. If your ship happens to be in such an area, your report will be helpful even though conditions may not appear bad enough to warrant a special observation. If the National Hurricane Center or the Environmental Prediction Center contacts your ship directly for your local meteorological report, you can directly send them your response: ncep.nhc.hsu@noaa.gov or ncep.nhc.tafb@noaa.gov, Central Pacific Hurricane Center Honolulu w-hfo.operations@noaa.gov, and twc.ops@noaa.gov, which will go to the watch standers at the National Hurricane Centers as well as the Tropical Analysis and Forecast Branch, an integral part of the National Hurricane Center.

OBSERVATIONS DURING STORM CONDITIONS: Whenever TROPICAL STORM, TYPHOON, or HURRICANE conditions are encountered anywhere, “SAFETY OF LIFE AT SEA CONVENTION,” Chapter V, requires all ships to take special observations and transmit the report to the closest national meteorological service via the most convenient radio or Inmarsat station. In addition to this requirement, it is highly desirable that weather reports be transmitted hourly, if possible; but in any case, not less frequently than every three (3) hours.

(43) WEATHER OBSERVATION REPORTS. (Continued).

EXTRATROPICAL STORMS: Submit a weather report message as soon as the average wind equals or exceeds 48 knots. Report at least every three (3) hours when under STORM conditions.

COASTAL REPORTS: The weather starts changing as soon as the air moves from land out over the water. Ship weather reporting should continue as close to the coast as ship routine permits. When within 200 miles of the U.S. or Canadian coastlines, reports are requested every three (3) hours.

TRANSMISSION OF WEATHER REPORTS

INMARSAT-B and INMARSAT-C: Instructions may be found in "Observing Handbook No. 1" and http://www.vos.noaa.gov/vos_resource.shtml.

EMAIL TRANSMISSIONS: In addition to using INMARSAT, ships can transmit observations using email. Your weather observations can be emailed directly into the NWS gateway system. Send your emailed observations to: shipobs@noaa.gov. To send Weather Observations by e-mail you first must configure the E-Mail settings in TurboWin e-logbook. (Settings can be found under the Maintenance Section and is password protected. Contact your servicing PMO for the password.) If an E-Mail client, such as Outlook, Outlook Express or Thunderbird is already installed and configured on the computer, TurboWin will use the E-Mail client automatically. For full reference go to: http://www.vos.noaa.gov/vos_resource.shtml. The ship is responsible for paying email transmission costs

(Repetition NTM 1(43)19)

(NOAA/NWS)

(44) RADAR BEACONS (RACONS).

Radar beacons (RACONS) are radar responder devices designed to produce a distinctive image on the screens of ship's radar sets, thus enabling the mariner to determine his position with greater certainty than would be possible using a normal radar display alone.

The U.S. Coast Guard operates approximately 70 radar beacons (RACONS) as maritime navigational aids in the Great Lakes, and off the Atlantic, Pacific, and Gulf coasts. RACONS are used to mark and identify points on shore, channel separation, channel entrances under bridges, and uncharted hazards to navigation (the Morse letter "D", dash-dot-dot, has been reserved for this purpose). RACON marks displayed on a radar screen are Morse characters typically of length 1 to 2 miles, always start with a dash, and always extend radially outward from the radar target marked by the beacon. RACON locations and identifications are included on most marine navigation charts.

RACONS should be visible to most commercial shipboard radar systems on vessels 6-8 miles from the RACON installation, regardless of radar size. No additional receiving equipment is required. Some precautions are necessary, however, if use of RACONS is desired. Radars that operate in the 10 cm band (2900-3100 MHz) are usually installed as a second radar on larger vessels, and may not respond to RACONS. The Coast Guard now installs dual band (3 cm and 10 cm) RACONS in most locations. In addition, rain clutter control switches on radars must be switched off or, if necessary, on low to ensure that the RACON is visible. Finally, most RACONS operating in the U.S. are frequency agile RACONS. Pulse correlation circuitry (interference or clutter rejection on some radars) installed on most newer radars, if on, may prevent the radar from displaying some RACONS. This circuitry should be switched off.

(Repetition NTM 1(44)19)

(USCG)

(45) NAVTEX.

NAVTEX is an international automated medium frequency (518 kHz) direct-printing service for promulgation of navigational and meteorological warnings and forecasts, as well as urgent marine safety information to ships. It was developed to provide a low-cost, simple, and automated means of receiving this information aboard ships at sea within approximately 200 nautical miles of a shore transmitting site. NAVTEX receivers can be configured to display desired categories of messages and to prevent duplicate printing of previously received messages. Mariners who do not have NAVTEX receivers, but have SITOR radio equipment, can also receive these broadcasts by operating it in the FEC mode and tuning to 518 kHz. Internationally, NAVTEX may also broadcast on the alternate NAVTEX frequencies of 490 and 4209.5 kHz but U.S. NAVTEX stations do not broadcast on those frequencies. For further information concerning NAVTEX including broadcast schedules, consult Pub 117, the US Coast Navigation Center web site at: <https://www.navcen.uscg.gov/?pageName=NAVTEX>, or the IMO GMDSS Master Plan. Additional information on NAVTEX can be found on the National Weather Service's Marine Weather Services web-site at: <http://www.nws.noaa.gov/om/marine/navtex.htm>.

(45) NAVTEX. (Continued).

NAVAREA IV/XII, HYDROLANT, HYDROPAC, HYDROARC and ice information broadcasts are issued over HF SITOR/NBDP (Simplex Telex Over Radio/Narrow Band Direct Printing) from Coast Guard Stations in Boston, Point Reyes, Honolulu and Guam. Broadcasts are made on 6314 kHz, 8416.5 kHz, 12579 kHz, 16806.5 kHz and 22376 kHz. See NGA Pub. 117, Radio Navigational Aids, for schedules.

(Supersedes NTM 1(45)19)

(USCG/NWS)

(46) SATELLITE DETECTION OF DISTRESS SIGNALS.

The Cospas-Sarsat system is an international cooperative program using satellites to detect distress beacons operating in the 406.0 to 406.1 megahertz (MHz) frequency range. The Cospas-Sarsat system uses low earth orbiting (LEO) and geostationary orbiting (GEO) satellites. Together, these satellites enable distress signals to be received by the Cospas-Sarsat system from anywhere on the planet, 24 hours a day, 7 days a week, in many cases nearly instantaneously.

When a Cospas-Sarsat satellite receives a distress signal, it is relayed to a network of ground stations (LUTs) and Mission Control Centers (MCCs). The USMCC, operated by the National Oceanic and Atmospheric Administration (NOAA), processes signals originating in the United States' areas of responsibility, and sends alert information to the appropriate U.S. Rescue Coordination Center (RCC). There are three types of distress beacons: EPIRBs (Emergency Position Indicating Radio Beacons) for use in the maritime environment, ELTs (Emergency Locator Transmitters) used on aircraft and PLBs (Personal Locator Beacons) for personal use. Some EPIRBs and all ELTs are capable of automatic activation, where PLBs can only be activated manually.

EMERGENCY POSITION INDICATING RADIO BEACON (EPIRB).

The Emergency Position-Indicating Radio Beacon (EPIRB) is a device, usually carried aboard maritime craft, which transmits a signal that alerts search and rescue authorities and enables rescue units to locate the scene of the distress. Table 1 provides an overview of the different categories of EPIRBs currently authorized for use in the U.S. Classes A, B, and S EPIRBs are no longer permitted for use within the United States and should be replaced by Cat I or Cat II 406 MHz EPIRBs.

A properly maintained 406 MHz EPIRB detected by LEO or GEO satellites will enable the system to locate a distress to within 5km or better on a single burst. Some 406 MHz EPIRBs also contain GPS receivers, or accept GPS information from external GPS units, and encode the GPS position into the distress signal. This GPS-encoded position dramatically improves the location accuracy down to the 100-meter level and can, in some cases, drastically reduce the response time for rescue. For current carriage requirements, refer to Navigation and Vessel Inspection Circular No. 3-99. Any questions concerning requirements to carry EPIRBs or other safety equipment should be referred to the U.S. Coast Guard Office of Commercial Vessel Compliance (CVC) at: CG-CVC-1CorrespondenceInbox@uscg.mil. Questions regarding type approval of EPIRBs or their hydrostatic release units should be directed to the Division of Lifesaving and Fire Safety (CG-ENG-4) at: TypeApproval@uscg.mil.

TABLE 1

CLASS	FREQUENCY	DESCRIPTION	DETECTION
Cat I	406 MHz with 121.5 MHz homing signal	Float free automatically activated beacon	Polar, medium, and geostationary orbiting satellites
Cat II	406 MHz with 121.5 MHz homing signal	Manually activated	Polar, medium, and geostationary orbiting satellites

PERSONAL LOCATER BEACON (PLB)

The Personal Locator Beacon (PLB) is a portable, individual-use distress beacon that operates much the same as an EPIRB. These beacons are designed to be carried by an individual person. Unlike some EPIRBs, they can only be activated manually. Like EPIRBs, all U.S. PLBs also have a built-in, low-power homing beacon that transmits on 121.5 MHz. This allows rescue forces to home in on a beacon once the 406 MHz satellite system has provided its 5km position for the immediate area of distress. Some PLBs also have a GPS receiver installed which encodes the position into the distress signal.

(46) SATELLITE DETECTION OF DISTRESS SIGNALS. (Continued).**FALSE ALERTS**

Distress beacon false alarms are a major problem. The emergency beacon user must be aware of how inadvertent activations can quickly overburden search and rescue resources, resulting in costly responses and creating the potential for loss of life. Inadvertent ELT, PLB, and EPIRB activations should be reported immediately; for accidental activations of ELT's and PLB's, call the Air Force Rescue Coordination Center at 1-800-851-3051, and for EPIRB's, contact the Coast Guard at 1-855-406-USCG (8724). Minimize false alerts with proper handling, storage, and disposal of distress beacons; understand and comply with manufacturer's operating and disposal instructions for your particular distress beacon; and tune a radio to 121.5 MHz to monitor the frequency/detect any inadvertent activation. Again, report any inadvertent activation of distress beacons immediately.

MAINTENANCE

Emergency beacon owners should test their beacons in accordance with manufacturer instructions, and examine them for water tightness, battery expiration date and registration expiration date.

406 MHz emergency beacons can be tested at any time using the beacon's self-test switch only. The 121.5 MHz homing frequency can be detected by an FM radio tuned to 99.5 MHz or an AM radio tuned to any vacant frequency and located close to the emergency beacon.

BEACON REGISTRATION

406 MHz beacon registration has been mandatory since 13 September 1994 by Federal Communications Commission regulations. All U.S. coded 406 MHz distress beacons **MUST** be registered with the National Oceanic and Atmospheric Administration (NOAA) which maintains the U.S. beacon registration database. Registration is free of charge, and must be renewed every two (2) years. When a 406 MHz alert is received, the system automatically checks the beacon registration data base for an ID match and appends vital registration information (when available) to the alert message that is sent to the responsible RCC. Registration information can be used in conjunction with the geostationary satellites immediate alerting capability to allow a SAR response 45-90 minutes sooner than otherwise possible - a significant response advantage. In rare circumstances where the Cospas-Sarsat system is not able to calculate a distress position, registration data may provide the only link to rescue. It is therefore imperative that the information in NOAA's registration database is verified by the beacon owner. Updates or corrections can be made at any time by using the contact information below.

If you purchase a new or a used U.S. coded 406 MHz emergency beacon, you **MUST** register it with NOAA. If you change any contact information (such as your phone number, address, or your emergency contact information) you **MUST** update your registration data with NOAA. If you sell your emergency distress beacon you **MUST** notify NOAA immediately.

You may register or update your beacon information online at: <http://www.beaconregistration.noaa.gov>. You may also submit a 406 MHz emergency beacon registration form via mail or fax to:

DOC/NOAA
SARSAT BEACON REGISTRATION
NSOF, E/SPO53
1315 East West Hwy
Silver Spring, MD 20910-3282

Fax: (301) 817-4565

Web site: <https://www.beaconregistration.noaa.gov/rgdb>

Call (301) 817-4515 or toll-free (888) 212-SAVE (7283) for further information on registering 406 MHz emergency beacons.

Once a beacon is registered, NOAA will send a proof-of-registration letter to the beacon owner to confirm registration and as ready evidence of compliance. EPIRB and PLB owners will also receive a decal that should be placed on the designated location on the beacon. NOAA also contacts all registered beacon owners on a two year schedule to maintain database accuracy. This two year contact is by email only if an email is provided in the registration; if no email is provided in the registration then the contact will be made through the US Postal Service to the registration address. This service is free of charge. Please keep your registration current - IT MAY SAVE YOUR LIFE.

(Supersedes NTM 1(46)19)

(USCG/NOAA)

(47) HF AND VHF RADIOTELEPHONE AND RADIOTELEX MARINE SAFETY BROADCASTS.

Urgent and routine broadcasts of marine safety information are announced on VHF Channel 16 (156.8 MHz) and made on Channel 22A (157.1 MHz), the ship station transmit frequency portion of Channel 22, of Appendix 18 of the International Telecommunications Union (ITU) Radio Regulations.

The U.S. Coast Guard (USCG) normally broadcasts selected coastal weather and local navigational warnings on VHF FM Channel 22A (157.1 MHz). In areas where NOAA Weather Radio broadcasts provide complete overlapping coverage of the U.S. Coast Guard VHF network, the U.S. Coast Guard may elect to broadcast warnings only and not routinely broadcast NWS marine forecasts.

The USCG does not support Medium Frequency (MF) services and encourages the public mariner to use more modern safety and distress services which can be more reliably received by the U.S. Coast Guard.

The USCG will continue to maintain a continuous watch on VHF FM channel 16 (156.8 MHz) and on existing voice and DSC frequencies in the 4/6/8/12 and 16 MHz bands as described in the Coast Guard Navigation Center website: <https://www.navcen.uscg.gov/?pageName=cgcommsCall>.

Questions and comments concerning VHF marine safety broadcasts should be addressed to the local Coast Guard District staff, or to:

United States Coast Guard
COMMANDANT (CG-652)
Stop 7710
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7710

(Supersedes NTM 1(47)19)

(USCG)

(48) INLAND NAVIGATION RULES.

CARRIAGE: The operator of each self-propelled vessel, 12 meters or more in length, is required to carry on board and maintain for ready reference, a copy of the Inland Navigation Rules. The U.S. Coast Guard (USCG) has developed a more printer friendly edition of the combined Inland Navigation Rules and Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS), that allows mariners to meet this basic carriage requirement in addition to those other methods described by this section. The "Amalgamated Version" of the Rules follows, and, provides a more printer friendly method (~20 pages) to access the information traditionally found in the U.S. Coast Guard Navigation Rules and Regulations Handbook. The Amalgamated Edition of the 72 COLGRES and Inland Navigation Rules are maintained and updated by the USCG Office of Navigation Systems (the same office that produces/updates the handbook). Mariners may print their own copy from the USCG NAVCEN website: <https://www.navcen.uscg.gov/?pageName=NavRulesAmalgamated>.

Another copy of this Amalgamation is also provided in Appendix B of each volume of National Oceanic and Atmospheric Administration's (NOAA) - United States Coast Pilot: <https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html>. If you prefer the traditional side-by-side International/Inland format, The Navigation Rules and Regulations Handbook (ISBN: 9780160925665) is available to download for free at: https://www.navcen.uscg.gov/pdf/navRules/Handbook/CG_NRHB_20190212.pdf. The Government Publishing Office provides a print-on-demand service, as do several commercial publishers.

As per USCG Navigation and Vessel Inspection Circular NVIC 01-16 Ch-1, electronic carriage of the Inland Navigation Rules is not currently authorized. However, the potential for allowing electronic carriage of the Nav Rules as equivalent to hard copy carriage (for the purposes of carriage requirements only) is currently under review by the USCG.

CHANGES: Changes are published, as they occur, in the Notice to Mariners; and appear in Summary of Corrections (Volume 5). A record of changes is maintained online at: https://www.navcen.uscg.gov/pdf/CG_NRHB_20181106_Corrigendum.pdf. For questions concerning the Navigation Rules: Email: cgnav@uscg.mil Phone: (202) 372-1565.

(Supersedes NTM 1(48)19)

(USCG)

(49) GUIDELINES FOR WGS DATUM CONVERSION.

1. The following information is provided to assist navigators in converting geographic positions from World Geodetic System 1972 (WGS 72) to World Geodetic System 1984 (WGS 84) and vice versa:
 - a. Positions obtained from satellite navigation systems or measured from charts referred to the World Geodetic System 1972 must be moved 0.01 minute eastward and 0.00 minute northward to be placed on the World Geodetic System 1984.
 - b. Positions obtained from satellite navigation systems (or charts) referred to the World Geodetic System 1984 must be moved 0.01 minutes westward and 0.00 minutes southward to be placed on the World Geodetic System 1972.

(49) GUIDELINES FOR WGS DATUM CONVERSION. (Continued).

2. Individuals who need somewhat more precise values may use the following tables to minimize the error due to the truncation of transformed coordinates.
3. Users with a need for the most accurate transformation from WGS 72 to WGS 84 may use the following transformation equations:

$$\begin{aligned}\text{Latitude Shift} &= (4.5 \cos \phi / a \sin 1'') + (f \sin 2 \phi / \sin 1'') \\ &= 0.1455 \cos \phi + 0.0064 \sin 2 \phi \text{ seconds northward}\end{aligned}$$

$$\text{Longitude Shift} = 0.554 \text{ seconds eastward}$$

Where: ϕ = latitude

f = difference in flattening of the ellipsoids = 0.3121057×10^7

a = semi-major axis of WGS 72 ellipsoid = 6,378,135 meters.

The datum shift from WGS 84 to WGS 72 is computed using the same equation but the direction of the computed shift is reversed—e.g. the latitude shift is southward and the longitude shift is westward.

4. Since the maximum shift only amounts to approximately 17 meters in longitude and 4 meters in latitude on the ground, the shift need not be used to plot positions on charts at scales smaller than 1:50,000.

**POSITIONS REFERRED TO WORLD GEODETIC SYSTEM 1972 MUST BE MOVED AS
INDICATED TO BE IN AGREEMENT WITH WORLD GEODETIC SYSTEM 1984**

90N	0.0000 MINUTES NORTH AND 0.0092 MINUTES EAST
85N	0.0002 MINUTES NORTH AND 0.0092 MINUTES EAST
80N	0.0005 MINUTES NORTH AND 0.0092 MINUTES EAST
75N	0.0007 MINUTES NORTH AND 0.0092 MINUTES EAST
70N	0.0009 MINUTES NORTH AND 0.0092 MINUTES EAST
65N	0.0011 MINUTES NORTH AND 0.0092 MINUTES EAST
60N	0.0013 MINUTES NORTH AND 0.0092 MINUTES EAST
55N	0.0015 MINUTES NORTH AND 0.0092 MINUTES EAST
50N	0.0017 MINUTES NORTH AND 0.0092 MINUTES EAST
45N	0.0018 MINUTES NORTH AND 0.0092 MINUTES EAST
40N	0.0020 MINUTES NORTH AND 0.0092 MINUTES EAST
35N	0.0021 MINUTES NORTH AND 0.0092 MINUTES EAST
30N	0.0022 MINUTES NORTH AND 0.0092 MINUTES EAST
25N	0.0023 MINUTES NORTH AND 0.0092 MINUTES EAST
20N	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
15N	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
10N	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
5N	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
0N	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
5S	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
10S	0.0024 MINUTES NORTH AND 0.0092 MINUTES EAST
15S	0.0023 MINUTES NORTH AND 0.0092 MINUTES EAST
20S	0.0022 MINUTES NORTH AND 0.0092 MINUTES EAST
25S	0.0021 MINUTES NORTH AND 0.0092 MINUTES EAST
30S	0.0020 MINUTES NORTH AND 0.0092 MINUTES EAST
35S	0.0019 MINUTES NORTH AND 0.0092 MINUTES EAST
40S	0.0018 MINUTES NORTH AND 0.0092 MINUTES EAST
45S	0.0016 MINUTES NORTH AND 0.0092 MINUTES EAST
50S	0.0015 MINUTES NORTH AND 0.0092 MINUTES EAST
55S	0.0013 MINUTES NORTH AND 0.0092 MINUTES EAST
60S	0.0011 MINUTES NORTH AND 0.0092 MINUTES EAST
65S	0.0009 MINUTES NORTH AND 0.0092 MINUTES EAST
70S	0.0008 MINUTES NORTH AND 0.0092 MINUTES EAST
75S	0.0006 MINUTES NORTH AND 0.0092 MINUTES EAST
80S	0.0004 MINUTES NORTH AND 0.0092 MINUTES EAST
90S	0.0000 MINUTES NORTH AND 0.0092 MINUTES EAST

(49) GUIDELINES FOR WGS DATUM CONVERSION. (Continued).

POSITIONS REFERRED TO WORLD GEODETIC SYSTEM 1984 MUST BE MOVED AS
INDICATED TO BE IN AGREEMENT WITH WORLD GEODETIC SYSTEM 1972

90N	0.0000	MINUTES SOUTH AND	0.0092	MINUTES WEST
85N	0.0002	MINUTES SOUTH AND	0.0092	MINUTES WEST
80N	0.0005	MINUTES SOUTH AND	0.0092	MINUTES WEST
75N	0.0007	MINUTES SOUTH AND	0.0092	MINUTES WEST
70N	0.0009	MINUTES SOUTH AND	0.0092	MINUTES WEST
65N	0.0011	MINUTES SOUTH AND	0.0092	MINUTES WEST
60N	0.0013	MINUTES SOUTH AND	0.0092	MINUTES WEST
55N	0.0015	MINUTES SOUTH AND	0.0092	MINUTES WEST
50N	0.0017	MINUTES SOUTH AND	0.0092	MINUTES WEST
45N	0.0018	MINUTES SOUTH AND	0.0092	MINUTES WEST
40N	0.0020	MINUTES SOUTH AND	0.0092	MINUTES WEST
35N	0.0021	MINUTES SOUTH AND	0.0092	MINUTES WEST
30N	0.0022	MINUTES SOUTH AND	0.0092	MINUTES WEST
25N	0.0023	MINUTES SOUTH AND	0.0092	MINUTES WEST
20N	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
15N	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
10N	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
5N	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
0N	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
5S	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
10S	0.0024	MINUTES SOUTH AND	0.0092	MINUTES WEST
15S	0.0023	MINUTES SOUTH AND	0.0092	MINUTES WEST
20S	0.0022	MINUTES SOUTH AND	0.0092	MINUTES WEST
25S	0.0021	MINUTES SOUTH AND	0.0092	MINUTES WEST
30S	0.0020	MINUTES SOUTH AND	0.0092	MINUTES WEST
35S	0.0019	MINUTES SOUTH AND	0.0092	MINUTES WEST
40S	0.0018	MINUTES SOUTH AND	0.0092	MINUTES WEST
45S	0.0016	MINUTES SOUTH AND	0.0092	MINUTES WEST
50S	0.0015	MINUTES SOUTH AND	0.0092	MINUTES WEST
55S	0.0013	MINUTES SOUTH AND	0.0092	MINUTES WEST
60S	0.0011	MINUTES SOUTH AND	0.0092	MINUTES WEST
65S	0.0009	MINUTES SOUTH AND	0.0092	MINUTES WEST
70S	0.0008	MINUTES SOUTH AND	0.0092	MINUTES WEST
75S	0.0006	MINUTES SOUTH AND	0.0092	MINUTES WEST
80S	0.0004	MINUTES SOUTH AND	0.0092	MINUTES WEST
90S	0.0000	MINUTES SOUTH AND	0.0092	MINUTES WEST

(Repetition NTM 1(49)19)

(NGA)

(50) ANTI-SHIPING ACTIVITY MESSAGES.

The Anti-Shipping Activity Message (ASAM) database, a part of the Maritime Safety Web site is a National Geospatial-Intelligence Agency service for mariners providing reports of hostile actions directed against ships. The ASAM database was developed at the request of the U.S. Interagency Working Group on Piracy and Maritime Terrorism. It contains random reports of various forms of aggression against shipping around the world. Events are categorized by date and by geographic area and are based on the NGA subregion system. The user can submit an ASAM, with the full particulars of an incident to be reported, or search the existing ASAM database by user-defined queries via the Maritime Safety Web site:

<https://msi.nga.mil/Piracy>

Upon receipt of the ASAM at NGA, the text is reviewed and evaluated for further action, edited, and stored in the ASAM database for access by all customers.

The database can be used as a voyage planning tool by providing cautionary information to ship owners and masters concerning security conditions in and near ports and narrow channels around the world. ASAMs can also be downloaded as KMZ, Arc shapefiles and/or personal Geodatabase zip files.

(50) ANTI-SHIPPING ACTIVITY MESSAGES. (Continued).

Examples of ASAM Reports in this file include the ACHILLE LAURO incident, robberies of ships transiting the Malacca Straits, attacks on fishing boats and merchant ships sailing off the coast of Western Sahara, and certain events occurring in and around the Persian Gulf.

When sending a hostile action report, the user of ASAM should provide NGA with as much of the following information as is possible:

1. Date of Occurrence;
2. Geographic Location;
3. Known or Suspected Aggressor;
4. Victim (Ship's) Name;
5. A detailed description of the occurrence being reported.

For further information on the ASAM database, users may contact (571) 557-8080 or write:

MARITIME SAFETY OFFICE
MAIL STOP N64-SFH
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
7500 GEOINT DRIVE
SPRINGFIELD, VA 22150-7500

Note that the ASAM file is only an indicator of hostile actions reported to NGA and is not a complete listing of all hostile actions that have occurred worldwide. NGA strongly urges the mariner to assist in the population of the ASAM database by sending reports of hostile actions.

(Supersedes NTM 1(50)19)

(NGA/SFHG)

(51) CAUTION ON ANNOUNCEMENT OF NEW CHARTS AND PUBLICATIONS.

CAUTION: DO NOT USE A NEW CHART OR PUBLICATION UNTIL IT IS ANNOUNCED IN NOTICE TO MARINERS. There may be occasions when a new edition of a chart or publication is received prior to the official announcement of its release being published in the U.S. Notice to Mariners. Since Notice to Mariners corrections are for specific editions of products, it is imperative that the user neither discard the previous edition nor use the new edition until this official announcement is received. Further, since Notice to Mariners corrections are for specific editions of products, it is critical that the user update only the specifically-referenced product edition. Additionally, users of the NGA Web site are advised that announcements of new editions in this system appear approximately one week ahead of the date of the published Notice to Mariners.

(Repetition NTM 1(51)19)

(NGA/SFHG)

(52) GLOBAL POSITIONING SYSTEM (GPS) AND DIFFERENTIAL GPS (DGPS) INFORMATION.

The Global Positioning System (GPS) is a satellite-based radionavigation system with continuous worldwide coverage. It provides position, navigation, and timing (PNT) signals to users across the globe. GPS is operated and controlled by the U.S. Department of Defense (DoD) under United States Air Force (USAF) management. The USAF develops, maintains, and operates the space and control segments. United States Code has established that the GPS Standard Positioning Service (SPS) will be available for peaceful civil, commercial, and scientific uses on a continuous worldwide basis free of direct user fees. The U.S. Department of Transportation is the Government's interface for civil users of GPS and works closely with the U.S. Coast Guard to disseminate information to the public. In an effort to meet the needs of civil users, the Coast Guard operates the Navigation Information Service (NIS), as a part of the Coast Guard Navigation Center (NAVCEN) located in Alexandria, Virginia. GPS information provided includes: planned, current, or recent satellite outages, GPS constellation changes, Operational Advisory messages, system status, YUMA/SEM Almanac data, and GPS testing notices. Whenever possible, advance notice of GPS satellite outages will be provided by the DoD and made available by the U.S. Coast Guard. The DoD provides at least 48-hour advance notice for any planned disruption of the Standard Positioning Service (SPS) in peacetime. Specific information regarding Air Force dissemination of GPS information to the public can be found in GPS Interface Control Document (ICD) ICD-GPS-240. The NAVCEN website is updated when new information is received. NIS services are described below:

(52) GLOBAL POSITIONING SYSTEM (GPS) AND DIFFERENTIAL GPS (DGPS) INFORMATION. (Continued).

1. GPS constellation and status information is available on the NAVCEN website at: <https://navcen.uscg.gov>. Notice Advisories to Navstar Users (NANU) and the daily GPS Operational Advisory are also provided through an email subscription service. Watchstanders are available 24 hours a day for assistance via phone (703) 313-5900.
2. The NIS disseminates GPS Operational Advisory information through USCG broadcast stations using VHF-FM voice and NAVTEX broadcasts. The broadcasts provide GPS users in the marine environment with satellite advisory information that could affect GPS navigational accuracy. Information is provided in message format via an established system of message dissemination. NIS provides the GPS Operational Advisory Broadcast information to NGA for broadcast in NAVA-REA, HYDROLANT, HYDROPAC and HYDROARC messages. These messages are generally geared to the deep draft mariner. NGA also publishes a Weekly Notice to Mariners (NTM) containing USCG Marine Information Broadcasts and NGA broadcast warnings for a seven-day period. NAVCEN also publishes GPS information on a weekly basis on the NAVCEN website at: https://www.navcen.uscg.gov/pdf/gps/gpsnotices/GPS_Interference.pdf. The NIS also responds to reports of GPS disruptions by receiving and processing reports made by civil GPS users through the NAVCEN website at: <https://www.navcen.uscg.gov/?pageName=gpsUserInput>.

To comment on any of these services or ask questions about GPS status, contact the NIS at:

COMMANDING OFFICER
USCG NAVCEN MS 7310
7323 TELEGRAPH ROAD
ALEXANDRIA, VA 20598-7310
Phone: (703) 313-5900
GPS Status Recording: (703) 313-5907
Email: TIS-PF-NISWS@uscg.mil
Website: <https://navcen.uscg.gov>
Online Contact Form: <https://www.navcen.uscg.gov/?pageName=contactUs>.

The Civil GPS Service Interface Committee (CGSIC) was established to address issues and problems that relate to the civil use of GPS. The CGSIC is an official interface between civil GPS users and the GPS operators in DoD. The U.S. Department of Transportation, Office of the Assistant Secretary for Research and Technology, Chairs the CGSIC. The U.S. Coast Guard Navigation Center (NAVCEN) is the Deputy Chair and administrator.

The CGSIC meets annually and is open to anyone interested in civil GPS issues. Additional pertinent information is released throughout the year via an e-mail mailing list. There is no fee to attend a CGSIC meeting or to join the mailing list. Full presentations from CGSIC meetings are available on the CGSIC portion of the GPS.gov website. Input from CGSIC meetings is provided to United States GPS authorities for consideration in GPS policy development and GPS service operation. Visit the GPS.gov website at: <https://www.gps.gov/cgsic/>.

Additional information can be provided by contacting:

CGSIC EXECUTIVE SECRETARIAT
COMMANDING OFFICER
USCG NAVCEN MS 7310
7323 TELEGRAPH ROAD
ALEXANDRIA, VA 20598-7398
Phone: (703) 313-5900
Website: <https://navcen.uscg.gov>
Online Contact Form: <https://www.navcen.uscg.gov/?pageName=contactUs>.

DISCONTINUANCE OF DGPS SERVICE

The U.S. Coast Guard will discontinue service from its remaining 38 Differential Global Positioning Service (DGPS) over the next three years. This staged reduction of the remaining DGPS broadcast service sites will begin in 2018 and end with the curtailment of the Coast Guard broadcast of GPS corrections over medium frequency in 2020.

Due to the increasing accuracy and integrity of the Global Positioning System (GPS), the Coast Guard no longer has a mission requirement for DGPS. Specifically, GPS provides sufficient positional accuracy to meet international navigation requirements for harbor approaches and to position Federal Aids to Navigation (ATON). Additionally, other commercial and government GPS augmentation systems are available for GPS users. The accuracy of un-augmented GPS increasingly exceeds

(52) GLOBAL POSITIONING SYSTEM (GPS) AND DIFFERENTIAL GPS (DGPS) INFORMATION. (Continued).

the 10-meter accuracy requirements for harbor navigation and harbor approaches.

The DGPS service has begun discountenance in early 2018 and will continue in a phased manner by FY 2020. The Coast Guard will release the actual broadcast termination dates via local Notice to Mariners. Information concerning DGPS status and termination status is disseminated through local USCG Broadcast Notice to Mariners, NAVTEX broadcasts, and via the website: <https://www.navcen.uscg.gov/?pageName=dgpsMain>.

(Repetition NTM 1(52)19)

(USCG)

(53) DIGITAL SELECTIVE CALLING DISTRESS ALERT.

Digital Selective Calling (DSC) is a capability offered with some VHF and HF maritime radios, intended to initiate calls and provide distress alert information to the U.S. Coast Guard and other rescue coordination centers. DSC is a major element of the Global Maritime Distress and Safety System (GMDSS), an International Maritime Organization-mandated telecommunications system required on vessels subject to the provisions of the Safety of Life at Sea Convention (SOLAS). All SOLAS vessels are required to interconnect their GPS with their DSC radios to provide an accurate position in the event of sending a distress alert. The interconnection of the DSC radio with the GPS is required for SOLAS vessels and is required by the International Telecommunications Union for non-SOLAS vessels. When a DSC distress call is received the radio shall be changed to the corresponding voice working channel. Continue listening on the working channel to ensure communications between the Coast Guard and ship in distress is established. In the event communications are not heard between the vessel in distress and the Coast Guard, advise the Coast Guard by any means available.

Coast Guard Communications Command and other select Coast Guard Stations operate VHF, HF and DSC, and can be reached using the Maritime Mobile Service Group Identity (MMSI) 003669999. The United States has declared GMDSS Sea Area A1. After careful consideration, the United States has determined it will NOT declare a GMDSS Sea Area A2 now or in the future. Continue listening on the working channel to ensure communications between the Coast Guard and ship in distress is established. In the event communications are not heard between the vessel in distress and the Coast Guard, advise the Coast Guard by any means available.

(Repetition NTM 1(53)19)

(USCG)

(54) VESSEL SQUAT IN SHALLOW WATER.

The following discussion is primarily aimed towards mariners who are navigating ocean-going commercial vessels on approaches to ports, where water depths are beginning to shoal (less than 3 times the ship's draft). The discussion describes the phenomenon of "squat" and is intended to help mariners recognize circumstances where it could significantly affect the navigational draft of their vessels.

In August 1992, a 950-foot passenger liner transiting past Martha's Vineyard ran over two uncharted boulders at a speed of nearly 25 knots. The vessel's deepest calculated draft was 32 ft 4 inches at the bow; the general charted water depth in the area was 39 feet, although the water depths over the boulders were determined to be 33.4 and 34.2 feet. One major contributing factor was that neither the master nor pilot adequately judged the considerable squatting effect caused by the high-speed transit in relatively shallow waters (which were only about 1.22 times the ship's draft). The casualty investigation determined that squat had increased the bow draft by at least 2.7 feet.

DISCUSSION OF SQUAT: The term "squat" describes the combination of sinkage (overall settling of the hull) and trim (the bow up/down rotation of the hull). This phenomenon occurs in waters of any depth, but is particularly affected by proximity to the sea floor. Therefore, the effects of squat become more pronounced in shallow and/or restricted waters (such as canals or dredged channels). As a ship moves forward in shallow water, the displaced water must quickly flow around and under the hull to fill the void left behind. This accelerated water flow affects the pressure distribution along the hull. Consequently, the vessel squats, effectively increasing its draft and trim. Depending upon the vessel's speed and hull form, the ship may trim by either the bow or the stern. Generally, full-bodied hulls (where the block coefficient C_b is greater than 0.7, such as tankers) tend to trim by the bow, whereas fine-bodied hulls (such as container ships) tend to trim by the stern.

SHALLOW WATER EFFECTS: Shallow water affects a ship in two manners: squat (which increases the effective draft at bow and/or stern), and maneuverability (which reduces maneuvering responses compared to open, deep water performance). These effects increase with vessel speed and decreasing water depth.

CALCULATION OF SQUAT: Squat is a function of the vessel's speed through the water, the ratio of ship draft to water depth, the ratio of cross-sectional areas of the hull and channel, the block coefficient of the hull, and other factors. Formulas for

(54) VESSEL SQUAT IN SHALLOW WATER. (Continued).

predicting squat for any particular ship are complex and may not be practical for direct use by mariners. However, a useful “rule of thumb” can be used as long as mariners understand its limitations, as discussed below. In general, shallow water effects can begin to appear when water depth is less than 3 times the vessel’s draft, and can become significant when the water depth is less than 1.5 times the draft. For a ship in unrestricted shallow water (i.e., not within the confines of a dredged channel or canal), a conservative rule-of-thumb for estimating squat is:

$$S = 0.033C_bV^2$$

[where: S = squat (*ft*), V = ship speed, including any head current (*knots*), and C_b = block coefficient of hull]. For example: at 15 knots, the squat for a container ship ($C_b = 0.60$) proceeding against a 1-knot head current would be approximately 5.1 feet and for a tanker ($C_b = 0.85$) would be approximately 7.2 feet.

The estimated squat should be added to the deepest calculated draft of the vessel (bow or stern). This rule-of-thumb conservatively overestimates the squat of a ship and is therefore considered to be safe for operational decisions.

However, the above rule-of-thumb equation is valid only when the ship’s speed is not excessive for the water depth. Specifically, the speed must be less than:

$$V < 2.52 \times \text{SQRT}(d)$$

[where V = ship speed (*kts*), and $\text{SQRT}(d)$ = square root of the water depth “ d ” (*ft*)]. For example: in 50 feet of water, the above squat estimate is valid only if the ship’s speed is less than 17.8 knots. If the ship’s speed is faster than the limiting speed, then the squat prediction is no longer reliable and a greater squat should be assumed.

As the ship moves into shallower water, the limiting speed will decrease. For example, in 30 feet of water, the limiting speed for the rule-of-thumb decreases to 13.8 knots. Therefore, if the ship maintains a constant speed as it proceeds into shallower water, it may eventually exceed the limiting speed and experience a significant increase in squat:

If the block coefficient C_b is not known, it may be approximated as follows:

$$C_b = 35\text{Disp}/(L \times B \times T)$$

[where Disp = full-load displacement (*long tons*), L = length between perpendiculars (*ft*), B = beam (*ft*), and T = full load draft (*ft*)]. For example, the block coefficient C_b of a container ship 810’ L x 106’ B x 36’ T with a full-load displacement of 51,710 Ltons is approximately 0.59.

UNDERKEEL CLEARANCE: When evaluating the underkeel clearance in shallow waters, mariners are advised to also take into account the wave-induced motions of the ship (heave and pitch), the uncertainty within their own draft & trim calculations, as well as a prudent margin for uncertainty in the charted water depths (even modern hydrographic surveys may not locate all sea floor obstructions or the shallowest depths). In particular, sudden changes in water depth (such as passing over a shoal area) can cause transient squat effects that can be more substantial than predicted. Similarly, sudden changes in ship speed (acceleration or deceleration) can also cause transient changes in squat. For broad-beamed ships with a relatively “tender” rolling periods (such as modern, post-Panamax container ships), rolling motions can significantly increase drafts at the bilges, in addition to the effects of squat.

MANEUVERABILITY AND SPEED: In addition to squat, mariners should also be aware that shallow water may increase turning diameter of the vessel. Modeling of tankers has shown an increase in turning diameter of 60% to 100% in water less than 1.25 times the ship’s draft. Hydrodynamic effects such as yawing and sheering should also be taken into account in shallow and restricted waters, especially when passing another vessel.

Also, the vessel will require substantially more revolutions to maintain the same speed (during sea trials with a 270-foot destroyer drawing 8 feet of water, the ship required 400 rpm to reach 22 knots in 100 feet of water, but nearly 500 rpm to maintain the same speed in 45 feet of water).

RESTRICTED WATERS: When the ship is transiting shallow restricted waters (such as a dredged channel within a shallow bay), the hydrodynamic flow around the hull is confined by the banks of the channel, creating a different pressure distribution and aggravating the squat condition (usually by increasing the stern squat). The squat estimated by the above “rule of thumb” should be doubled. Maneuverability is also further degraded; which is of particular concern when passing (meeting or overtaking) another vessel in the waterway or when maneuvering near banks or in channel curves.

(54) VESSEL SQUAT IN SHALLOW WATER. (Continued).

RECOGNIZING SHALLOW WATER EFFECTS: Signs that a ship has entered shallow water conditions can include one or more of the following:

- Vibration increases suddenly,
- Engine loads down and revolutions decrease,
- Wavemaking increases, especially at the bow,
- Ship becomes more stable and slower to respond to controls,
- Echo sounders indicate a change in clearance or depth,
- The shaft horsepower (shp) speed decreases at the same engine revolutions,
- Water flow around the ship changes, and water color darkens (possibly indicating entrained mud).

REGULATIONS: The Code of Federal Regulations (CFR) requires that the person directing the movement of the vessel set the vessel's speed with consideration for the tendency of the vessel underway to squat and suffer impairment of maneuverability when there is small underkeel clearance [33 CFR 164.11(p)(3)]. In addition, the International Maritime Organization recommends that ships be provided with a bridge poster, a pilot card, and a maneuvering booklet. These should include information on the squat and maneuvering characteristics for that particular vessel [see also USCG Navigation Safety Inspection Circular 7-89].

For more information, contact:

Commandant, U.S. Coast Guard
Naval Architecture Division (CG-ENG-2)
2703 Martin Luther King Jr Ave, S.E.
Washington, D.C. 20593-7509
Telephone: (202) 372-1370

(Repetition NTM 1(54)19)

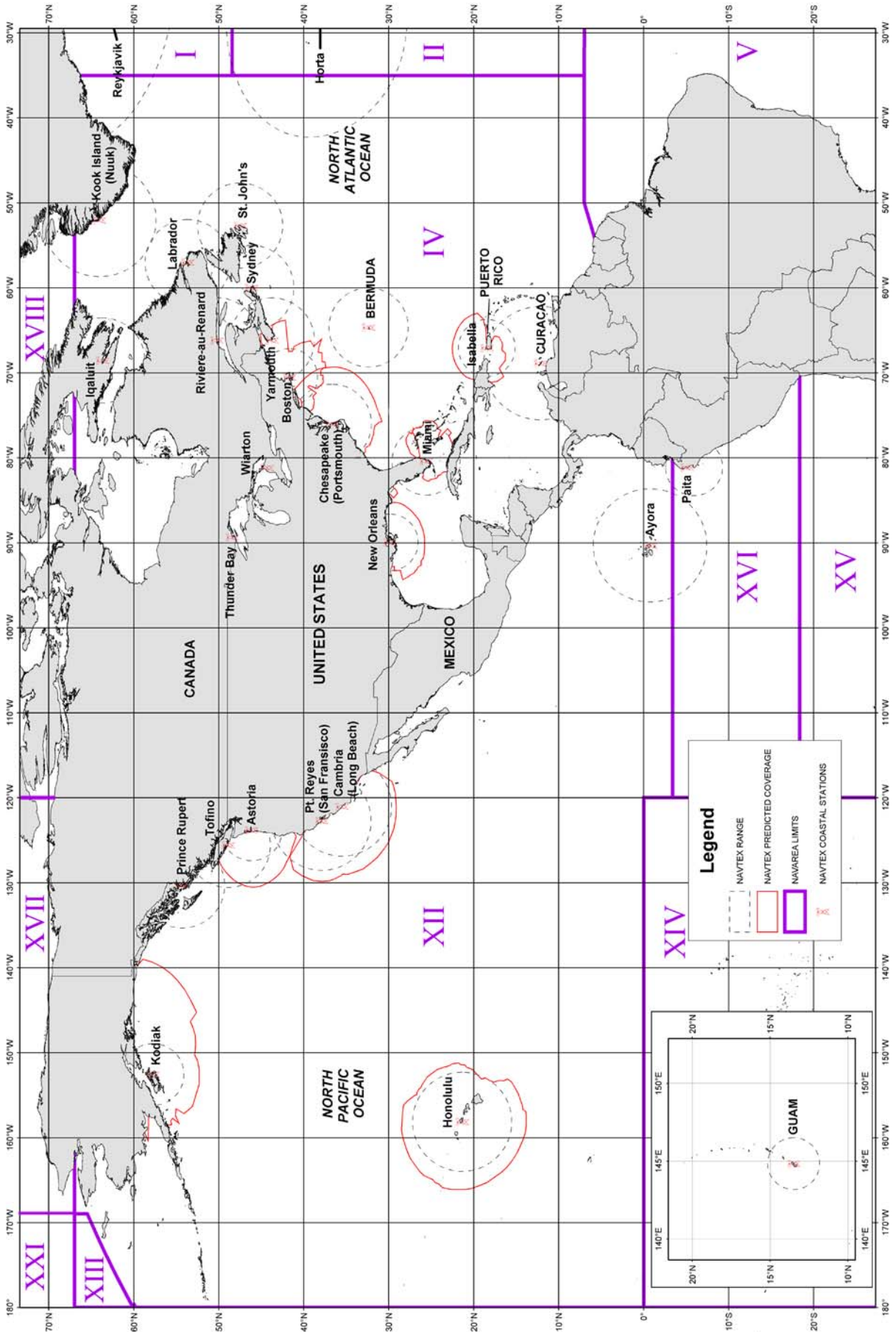
(USCG)

(55) PROMULGATION OF MARITIME SAFETY INFORMATION BY U.S. INFORMATION PROVIDERS.

The purpose of this information is to provide mariners with the details of the promulgation of Maritime Safety Information (MSI) via the Global Maritime Distress and Safety System (GMDSS) by U.S. information providers, namely the National Geospatial-Intelligence Agency (NGA), the U.S. Coast Guard (USCG), and the National Weather Service (NWS).

Mariners should consult PUB 117, the SafetyNet Users Handbook (available at: http://www.iho.int/mtg_docs/International_Organizations/IMO/SafetyNET.pdf); IMO GMDSS Master Plan, or the U.S. Coast Guard Navigation Center web site at: <https://www.navcen.uscg.gov>.
(Repetition NTM 1(55)19)

(USCG)



(56) COAST GUARD SAFETY INFORMATION AVAILABLE ON INTERNET.

USCG Navigation Center website provides information for radionavigation and maritime telecommunications systems. Access to general information and, as appropriate, current operational status, and effective policies for Global Positioning System (GPS), Nationwide Differential GPS (NDGPS), Universal Shipborne Automatic Identification System (AIS), Long Range Identification and Tracking (LRIT), and the Global Maritime Distress and Safety System (GMDSS), including NAVTEX, Digital Selective Calling (DSC), Inmarsat SafetyNET, and other Maritime Safety Information (MSI) broadcasts can be made directly, at no charge, via the Internet at: <https://www.navcen.uscg.gov>.

Various marine safety information products can be obtained via email subscription through the USCG Navigation Center Web site at: <https://www.navcen.uscg.gov/?pageName=feeds>. In addition, information regarding annual Light Lists in PDF format as well as weekly Light List information in PDF and XML format can be found at: <https://www.navcen.uscg.gov/?pageName=lightLists>. Mariners are encouraged to report all degradation, outages, or other incidents or anomalies of radionavigation services to the U.S Coast Guard Navigation Center at: <https://navcen.uscg.gov> or phone: (703) 313-5900.

(Repetition NTM 1(56)19)

(USCG)

(57) NATIONAL OCEAN CLAIMS.

The following list shows national claims of maritime jurisdiction. Publication of this material is solely for information relative to the navigational safety of shipping and in no way constitutes legal recognition by the United States. The information has been compiled from the best available sources.

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Albania	12*	---	15	Defined by coordinates, 200m or E
Algeria	12*	24	32-52	Equidistant
Angola	12	24	200	200NM or CM
Antigua and Barbuda**	12*	24	200	200NM or CM
Argentina	12* (1)	24	200	200NM or CM
Australia	12 (2)	24	200	200NM or CM
Bahamas, The**	12	---	200	200m or E
Bahrain	12	24	---	---
Bangladesh	12*	18 (3)	200	CM
Barbados	12*	---	200	200NM or CM
Belgium	12	24	Defined by coordinates (4)	Equidistant (4)
Belize	12 (5)	---	200	---
Benin	12 (82)	---	200 (82)	200 (82)
Bosnia and Herzegovina	--- (6)	---	---	---

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Brazil	12* (7)	24	200 (7)	200NM or CM
Brunei	12	---	200 (8)	200NM or CM (83)
Bulgaria	12 (9)	24	200	200m or E (9)
Burma	12* (10)	24 (10)	200	200NM or CM
Cambodia	12*	24 (11)	200	200NM (11)
Cameroon	12	24	200 (12)	200NM or CM
Canada	12 (13)	24	200	200NM or CM
Cabo Verde**	12*	24	200	Defined by coordinates (95)
Chile	12	24	200	200/350NM (14)
China	12*	24 (15)	200 (15)	200NM or CM
Colombia	12	24 (93)	200	200NM
Comoros**	12	---	200	200NM or CM
Congo, Republic of the	12*	---	200	200NM or CM
Congo, Democratic Republic of the (formerly Zaire)	12		200 (16)	200NM/350NM (16)
Cook Islands	12	---	200	200NM or CM
Costa Rica	12	---	200 (17)	200NM or CM
Côte d'Ivoire	12	24	200	Defined by coordinates
Croatia	12*	---	200 (18)	200m or E
Cuba	12 (19)	24	200	200NM or CM
Cyprus	12	24	200 (89)	200m or E
Denmark	12* (20)	24	200	200m or E
Djibouti	12 (21)	24	200	---
Dominica	12	24	200	---
Dominican Republic**	12 (22)	24	200	200NM or CM
Ecuador	12	---	200	200NM (23)
Egypt	12* (24)	24 (24)	200 (89)	200m or E

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
El Salvador	12 (25)	24	200	200NM
Equatorial Guinea	12	---	200	200NM or CM
Eritrea	12 (26)	---	(26)	---
Estonia	12 (27)		Defined by coordinates	Defined by coordinates
Fiji**	12	24	200	200m or E
Finland	12* (28)	14	Defined by coordinates	200m or E
France	12 (29)	24	200 (29)	200m or E
Gabon	12	24	200	200NM or CM
Gambia, The	12	18	200	Defined by coordinates (95)
Georgia	12	24	Defined by coordinates; Equidistant (30)	Defined by coordinates; Equidistant (30)
Germany	12	---	200	200m or E
Ghana	12	24	200	Defined by coordinates
Greece	6/10 (31)	---	---	200m or E
Grenada	12*	---	200	200NM
Guatemala	12 (32)	---	200	200m or E
Guinea	12 (Defined by coordinates)	24 (Defined by coordinates)	200 (Defined by coordinates)	Defined by coordinates (95)
Guinea-Bissau	12	---	200	Defined by coordinates (95)
Guyana	12*	24	200	200NM or CM
Haiti	12 (33)	24 (33)	200	E
Honduras	12 (34)	24	200	200NM or CM
Iceland	12	---	200	200NM or CM
India	12*	24 (35)	200	200NM or CM

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Indonesia**	12* (36)	--- (84)	200	200NM or CM
Iran	12*	24 (37)	Equidistant (37)	Equidistant(37)
Iraq	12	--- (85)	---	(not specified)
Ireland	12	24	200	Partially defined by coordinates
Israel	12	---	Equidistant	E
Italy	12 (38) (86)	24	Equidistant	200m or E
Jamaica**	12	24	200	200NM or CM
Japan	12 (39)	24	200	200NM or CM
Jordan	3	---	---	---
Kenya	12 (40)	---	200	Defined by coordinates
Kiribati**	12 (Defined by coordinates)	24 (Defined by coordinates)	200 (Defined by coordinates)	Defined by coordinates
Korea, North (DPRK)	12* (41)	50 (41)	200	200NM
Korea, South (ROK)	12* (42)	24	200	200NM or CM
Kuwait	12	24	Equidistant	Equidistant
Latvia	12 (43)	---	200 (90)	200m or E
Lebanon	12	---	Defined by coordinates	---
Liberia	12	24	200	200m or E
Libya	12* (44)	---	Equidistant (91)	CS
Lithuania	12* (Defined by coordinates)	24 (Defined by coordinates)	Defined by coordinates	Equidistant; defined by coordinates
Madagascar	12	24	200	200NM (46)
Malaysia	12 (47)	---	200	200m or E
Maldives**	12*	24	200	Defined by coordinates
Malta	12*	24	25	200m or E

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Marshall Islands**	12 (Defined by coordinates)	24 (Defined by coordinates)	200 (Defined by coordinates)	---
Mauritania	12 (48)	24	200	Defined by coordinates (95)
Mauritius	12*	24	200	200NM or CM
Mexico	12 (49)	24	200	200NM or CM
Micronesia, Federated States of	12	---	200	200NM or CM
Monaco	12	---(88)	--- (88)	(88)
Montenegro (Formerly Serbia and Montenegro)	12* (50)	---	---	200m or E
Morocco	12	24	200	200m or E
Mozambique	12	24	200	200NM or CM
Namibia	12	24	200	200NM or CM
Nauru**	12	24	200	200
Netherlands	12* (51)	24	Defined by coordinates	200NM or CM
New Zealand	12 (52)	24	200 (52)	200NM or CM
Nicaragua	200*/12* (87)	25*/24 (87)	200	200m or CM
Nigeria	12*	---	200	200m or E
Niue	12 (Defined by coordinates)	24 (Defined by coordinates)	200 (Defined by coordinates)	200NM
Norway	12 (53)	24 (53)	200	200NM or CM
Oman	12*	24	200	200NM or E
Pakistan	12* (54)	24 (54)	200	200NM or CM
Palau	12	24	200	200NM or CM
Panama	12 (55)	24	200	200NM or CM
Papua New Guinea**	12	---	200	200m or E
Peru	200 (56)	---	200	200
Philippines**	12 (57)	---	200	E
Poland	12* (58)	---	200 (58)	Not specified

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Portugal	12 (59)	24	200	200m or E
Qatar	12	24	Defined by coordinates (60); Equidistant	Defined by coordinates (60); Equidistant
Romania	12*	24	200	200m or E
Russia	12 (61)	24	200	200NM or CM
Saint Kitts and Nevis	12	24	200	200NM or CM
Saint Lucia	12	24	200	200NM or CM
Saint Vincent and the Grenadines**	12*	24	200	200m
Samoa	12	24	200	200NM or CM
Sao Tome and Principe**	12	24	200 (Defined by coordinates)	200NM or CM
Saudi Arabia	12 (62)	24 (62)	Not specified	CM; not specified
Senegal	12	24	200	Defined by coordinates (95)
Seychelles**	12*	24	200	200NM or CM
Sierra Leone	12	24	200	Defined by coordinates (95)
Singapore	12 (63)	---	--- (63)	---
Slovenia	12* (64)	---	Defined by coordinates (64)	Defined by coordinates (64)
Solomon Islands**	12	---	200	Defined by coordinates
Somalia	12 (94)	---	200 (Defined by coordinates)	Defined by coordinates
South Africa	12	24	200	200NM or CM
Spain	12 (65)	24	200 (65)	200NM or CM
Sri Lanka	12* (66)	24 (66)	200	200NM or CM
Sudan	12*	18 (67)	---	200m or E
Suriname	12	---	200	200NM or CM
Sweden	12 (68)	---	Equidistant	200m or E

(57) NATIONAL OCEAN CLAIMS. (Continued).

Country	Territorial Sea	Contiguous Zone	Fisheries or Economic Zone	Continental Shelf
Syria	12*	24	200	200m or E
Tanzania	12	---	200	200NM or CM
Thailand	12 (69)	24	200	Defined by coordinates
Timor-Leste	12	24	200	200NM or CM
Togo	30	---	200	200NM or CM
Tonga	12 (70)	---	200	200m or E
Trinidad and Tobago**	12	24	200	200NM or CM
Tunisia	12 (71)	24	--- (72)	---
Turkey	6-12 (73)	---	200 (73)	---
Tuvalu**	12	24	200	200NM
Ukraine	12 (74)	---	200	200m or E
United Arab Emirates	12*	24	200 (75)	200NM or Equidistant
United Kingdom	12		200 (76)	200NM, CM or Equidistant
United States	12	24	200 (77)	200NM or CM
Uruguay	12 (78)	24	200	200NM or CM
Vanuatu**	12	24	200	Defined by coordinates
Venezuela	12	24 (79)	200	200m or E
Vietnam	12* (80)	24 (80)	200	200NM or CM
Yemen	12* (81)	24 (81)	200	200NM or CM

Abbreviations:

CS - Continental Shelf (no specified limits)

CM - Continental Margin

E - Limit of Exploitation

m - meters (depth)

NM - nautical miles

* Indicates a state which requires advance permission or notification for innocent passage of warships in the territorial sea. The United States does not recognize this requirement.

** Indicates an archipelagic state.

(57) NATIONAL OCEAN CLAIMS. (Continued).

FOOTNOTES

The numbers presented in the table reflect a claim regarding the breadth of a zone contained in national legislation - regardless of whether this legislation contains an additional specific reference to the need for delimitation of maritime boundaries with adjacent or opposite states. Therefore there are instances where a state claim exceeds the maximum possible breadth due to the distance to opposite states.

Security Zone - A state claim to control activity beyond its territorial sea for security reasons unrelated to that state's police powers in its territory, including its territorial sea. This Summary lists only those Security Zones which presently claim to restrict navigation and overflight activities conducted exclusively beyond their claimed territorial seas. A claim of right of surveillance beyond the territorial sea or a claim of the right of "hot pursuit" in enforcing violations of law which occur in a state's territorial sea, inland waters, or land territory does not constitute a claimed Security Zone.

Fishery zones not extending beyond a claimed territorial sea or EEZ are encompassed within the territorial sea or EEZ and not listed separately.

Many coastal nations have established straight baselines or have asserted historic waters claims. These footnotes mention some of the more significant ones. It exceeds the scope of this Summary, however, to provide an exhaustive list of baseline and historic waters claims. Accordingly, users should refer to other sources of information to obtain a complete compendium of maritime claims.

1. Argentina. Claims San Matias Gulf (Golfo San Matias), Nuevo Gulf (Golfo Nuevo) and San Jorge Gulf (Golfo San Jorge) as internal waters and claims, jointly with Uruguay, the Rio de la Plata estuary as internal waters.

2. Australia. Claims Anxious, Rivoli, Encounter and Lacepede Bays as historic waters.

3. Bangladesh. Contiguous Zone also considered a Security Zone. Nuclear-powered vessels and vessels transporting nuclear materials or other radioactive substances are required to give notice prior to entering territorial sea.

4. Belgium. EEZ limits set by coordinates found in the Act concerning the EEZ of Belgium in the North Sea of April 1999. Fishery zone and CS extend to median line equidistant from baseline of neighbors.

5. Belize. From the mouth of the Sarstoon River to Ranguana Cay, Belize's territorial sea is 3NM; according to Belize's Maritime Areas Act, 1992, the purpose of this limitation is "to provide a framework for the negotiation of a definitive agreement on territorial differences with the Republic of Guatemala."

6. Bosnia and Herzegovina. No information on maritime claims is available.

7. Brazil. Claims to require permission for more than 3 warships of same flag to be in territorial sea at same time. Military exercises can be carried out in EEZ only with Brazil's consent. The U.S. does not recognize this restriction and protested in 1983 and 1988, and conducted an operational assertion in FY 2011.

8. Brunei. 200NM or median EEZ.

9. Bulgaria. In territorial sea and internal waters, foreign submarines shall be required to navigate on the surface. Innocent passage of warships limited to designated sea lanes. CS limits will be established by agreement between states with adjacent or opposite coasts on Black Sea on basis of international law.

10. Burma. Claims as internal waters all waters inside a 223NM baseline closing Gulf of Martaban as well as waters inside straight baselines connecting coastal islands. Contiguous Zone also considered a Security Zone.

11. Cambodia. Contiguous Zone also considered a Security Zone. Continental Shelf: "All activities by foreigners", for "whatever end" are regulated. The U.S. does not recognize these claims.

12. Cameroon. EEZ will stretch from the external boundary of the territorial sea to the limit placed under its jurisdiction by international law.

13. Canada. Claims as internal waters all waters between its islands in the Arctic; also claims Hudson Bay as a historic bay.

14. Chile. Claimed continental shelves for Easter Island and Sala y Gomez Island, extending 350 nautical miles from their respective baselines.

15. China. Claims right to create safety zone around any structure in EEZ, right to require prior authorization to lay submarine cables and pipelines, and right to broad powers to enforce laws in the EEZ. Contiguous Zone also considered a Security Zone.

16. Congo. Congo, Dem. Rep. of the. Claimed 200nm EEZ as allowed under the 1982 Law of the Sea Convention; 1983. Recommends coordination with neighboring states; 1992. Claims 350nm Continental Shelf measured from baseline, or to 100nm from 2,500m isobath; 2009.

17. Costa Rica. Permit required for foreign flag fishing vessels to transit Costa Rican waters.

18. Croatia. Requires 24hr notice in advance of a foreign warship exercising innocent passage. Prohibits more than three foreign warships from transiting the territorial sea in innocent passage.

19. Cuba. Claims straight baselines enclosing varying distances of water between Cape Frances (Cabo Frances), the Isle of Pines (Isla de la Juventud) (notable are those enclosing 21-35.6N and 79-50.5W), Breton Cay (Cayo Breton) and Cape Cruz (Cabo Cruz) as internal waters.

(57) NATIONAL OCEAN CLAIMS. (Continued).

20. Denmark. No prior notification required in straits, unless more than 3 warships at once. Includes Greenland and Faroe Islands. Straight baselines have the effect of enclosing waters between the Faroe Islands. Drogden and Hollenderdyb claimed as internal waters. 3NM territorial sea for Greenland. 12NM territorial sea for Faroe Islands.

21. Djibouti. Nuclear-powered vessels and vessels transporting nuclear materials or other radioactive substances are required to give notice prior to entering territorial sea.

22. Dominican Republic. Claims Samana, Ocoa, Neiba, Escocesa and Santo Domingo Bays as historic bays; Samana, Ocoa and Neiba bays qualify as juridical bays.

23. Ecuador will make use of its right to extend its continental shelf to a distance of 350NM from the baselines of the Galapagos Archipelago

24. Egypt. Contiguous Zone also considered a Security Zone. Claims right to prior permission for entry of nuclear-powered vessels or vessels carrying nuclear materials and foreign ships carrying hazardous or other wastes.

25. El Salvador. Claims Gulf of Fonseca (Golfo de Fonseca) as a historic bay.

26. Eritrea; Concerning Territorial Sea and EEZ: Adopted certain provisions of Ethiopian Proclamation No. 137. Jurisdiction claimed to the limit of the pearl and sedentary fishery grounds

27. Estonia. Nuclear-powered ships must apply for permission 30 days in advance to enter territorial sea. Innocent passage prohibited for ships carrying radioactive materials, explosives and marine pollutants defined as hazardous and certain oil and fertilizer products unless those cargoes are loaded or unloaded in an Estonian port.

28. Finland. In the Gulf of Finland territorial sea is 3NM.

29. France. Territorial sea limits apply to all French dependencies. EEZ claim includes the following French dependencies: Clipperton Island, French Guiana, French Polynesia, French Southern and Antarctic Lands, Guadeloupe, Glorios Islands, Juan de Nova Island, Europa Island, Bassas da India, Martinique, New Caledonia, St. Pierre and Miquelon, Tromelin Island, and Wallis and Futuna.

30. Georgia. National legislation establishes the limits only by reference to the delimitation of maritime boundaries with adjacent or opposite states.

31. Greece. Territorial airspace claim extends to 10NM for control of civil aviation. The U.S. does not recognize territorial airspace claims that exceed the territorial sea claim. The U.S. protested in CY 1983, 1984, and 1985; and conducted operational assertions in FY 1983 and 1984 (overflights).

32. Guatemala. Claims Gulf of Amatique (Bahia de Amatique) as a historic bay.

33. Haiti. Draws territorial sea limits in a manner which implies straight baselines including across the mouth of the Gulf of Gonave (Golfo de la Gonave). Contiguous Zone also considered a Security Zone.

34. Honduras. Claims Gulf of Fonseca (Golfo de Fonseca) as a historic bay.

35. India. Contiguous Zone also considered a Security Zone. Claims Gulf of Mannar and Palk Bay as historic waters.

36. Indonesia. Submarines must navigate above water level and show national flag. Nuclear vessels and vessels carrying nuclear material must carry documents and adhere to international special preventative measures.

37. Iran. Claims security jurisdiction in Contiguous Zone. EEZ and CS extend to median line equidistant from baseline of neighbors.

38. Italy. Claims the Gulf of Taranto (Golfo di Taranto) as a historic bay.

39. Japan. Claims straight baselines. A high seas corridor remains in 5 "international straits": Tsugaru Strait (Tsugarukaikyo), La Perouse Strait, Osumi Strait (Osumi-kaikyo) and East and West channels of Tsushima.

40. Kenya. Established straight baseline system. Claims Ungwana Bay as a historic bay.

41. Korea, North (DPRK). Measures claims from claimed straight baselines, not coastline. Claims a 50/200NM Security Zone within which all foreign vessels and aircraft are banned without permission; it extends to 50NM in the Sea of Japan and to the limit of EEZ in the Yellow Sea.

42. Korea, South (ROK). Claims straight baselines. A high seas corridor remains in Korea Strait.

43. Latvia. Banned foreign warships with nuclear powered engines or cargo from entering territorial seas or ports without providing 30 days prior notice and permission.

44. Libya. Claims the Gulf of Sidra as a historic bay. All merchant ships required to give prior notice of innocent passage.

45. Lithuania. EEZ limit established by reference to the delimitation by agreement with states with adjacent or opposite coasts.

46. Madagascar. CS 200NM or 100NM from 2500m-depth isobath.

47. Malaysia. Prior authorization requirement for nuclear-powered ships or ships carrying nuclear material to enter the territorial sea.

48. Mauritania. Claims 89NM straight baseline from Cape Blanc (Cap Blanc) to Cape Timiris (Cap Timiris).

(57) NATIONAL OCEAN CLAIMS. (Continued).

49. Mexico. No more than 3 foreign warships will be authorized in Mexican ports on each coast at the same time, and no more than one in any given port. Port calls by more than one training vessel can be authorized only if permission is requested three months in advance. Nuclear-powered and nuclear-armed ships are not allowed to enter Mexican territorial waters or dock in Mexican ports.

50. Montenegro. No official information on maritime claims is available. This information corresponds to the limits and claims of the previous national entity, Serbia and Montenegro, and is therefore not authoritative.

51. Netherlands. Considers the Westerschelde internal waters through which passage requires prior permission. Includes Aruba and the Netherlands Antilles.

52. New Zealand. Includes Tokelau. Prohibits entry of nuclear-powered and nuclear armed ships into its ports.

53. Norway. Territorial sea claim includes Jan Mayen and Svalbard. Contiguous Zone claim applies only to Norway.

54. Pakistan. Foreign supertankers, nuclear-powered ships and ships carrying nuclear materials are required to give prior notification for entry into territorial sea. Contiguous Zone also considered a Security Zone.

55. Panama. Claims Gulf of Panama as a historic bay.

56. Peru. The 200nm limit is called the 'Maritime Dominion' of Peru. Peru claims sovereignty and jurisdiction without prejudice to the freedom of international communication, "in conformity with the laws and treaties ratified by the state."

57. The Philippines declared 33 islands, cays, shoals and reefs, contained in a delimited area (Kalayaan) of the Spratly Islands, to be Philippine territory; Presidential Decree No. 1596.

58. Poland. Claims a closing line across Gulf of Gdansk and a fishing zone to the median line in the Baltic. EEZ is determined by lines connecting extreme points of specified lateral limits.

59. Portugal. Established straight baselines for various areas along continental coast and Madeira and Azores island groups. Claims Tagus and Sado estuaries and associated bays as historic waters.

60. Qatar. Extends to median line with neighboring states.

61. Russia. In a Joint Statement with Ukraine declared that the Sea of Azov and Strait of Kerch are historic internal waters of the two nations.

62. Saudi Arabia. Claims power to regulate nuclear-powered vessels in the territorial sea and to require prior authorization for such vessels. Contiguous Zone also considered a Security Zone.

63. Singapore. Singapore has stated that it will negotiate agreed maritime boundary delimitations with neighboring countries whose territorial sea and exclusive economic zone claims overlap with Singapore's.

64. Slovenia. Foreign warships require 24-hour advance notice for innocent passage through territorial sea and must use designated sea lanes only. Territorial Sea and Continental Shelf boundaries are defined by coordinates through agreements w/ the former Yugoslavia.

65. Spain. Claims to control transit passage by aircraft and exercise pollution control over vessels in international strait. Claims 200NM Economic Zone in Atlantic only. Fishery zone in the Mediterranean defined by coordinates.

66. Sri Lanka. Contiguous Zone also considered a Security Zone. Claims Palk Bay, Palk Strait and Gulf of Mannar as historic waters.

67. Sudan. Contiguous Zone also considered a Security Zone.

68. Sweden. Territorial sea claim is less than 12NM (but varying) in certain areas of the Skagerrak, the Kattegat and the Baltic.

69. Thailand. Claims inner Gulf of Thailand as a historical bay to 12°35'45"N.

70. Tonga. Claims 12NM territorial sea for Minerva Reef.

71. Tunisia. Claims straight baselines enclosing Gulf of Tunis (Khalij Tunis) and Gulf of Gabes (Khalij Gabes) as internal waters.

72. Tunisia. EEZ limits to be fixed in coordination with neighboring states.

73. Turkey. Claims a 12NM territorial sea in the Black Sea and in the Mediterranean and a 6NM territorial sea in the Aegean. EEZ is claimed in the Black Sea.

74. Ukraine. In a Joint Statement with Russia declared that the Sea of Azov and Strait of Kerch are historic internal waters of the two nations.

75. United Arab Emirates. EEZ extends to agreed CS boundaries or to median lines.

76. United Kingdom. Fishery claims include Ascension, Bermuda, British Virgin Islands, Cayman Islands, Ducie and Oeno Atolls, Henderson Island, Pitcairn Island, St. Helena, Tristan da Cunha, Turks and Caicos Islands. Has also established a fishing zone around the Falkland/Malvinas Islands; although 200NM wide, the zone is only enforced to a distance of 150NM. Established Environment (Protection and Preservation) Zone for the British Indian Ocean Territory.

77. United States. EEZ applies to Northern Marianas (consistent with the Covenant), American Samoa, Guam, Puerto Rico, U.S. Virgin Islands and other U.S. possessions and territories.

78. Uruguay. Claims, jointly with Argentina, the Rio de la Plata estuary as internal waters.

(57) NATIONAL OCEAN CLAIMS. (Continued).

79. Venezuela. Claims a 24NM Contiguous Zone in Decree No. 1,446 of 17 November 2014; this supersedes the claimed 15NM Security Zone.

80. Vietnam. Claims half of the Gulf of Tonkin as historic internal waters and uses straight baselines for measuring the territorial sea. Baselines purport to enclose portions of the South China Sea up to approximately 75NM in width as internal waters. Contiguous Zone also considered a Security Zone.

81. Yemen. Claims notice requirement for warships, nuclear-powered vessels and vessels transporting nuclear materials or other radioactive substances prior to entering the territorial sea. Contiguous Zone also considered a Security Zone.

82. Benin. In December 1998, a representative of the Benin Foreign Ministry provided an informal statement to U.S. State Department that Benin now claims a 12nm Territorial Sea and a 200nm-EEZ. However, the 1976 decree remains on the UN Law of the Sea website, and the UN continues to list the claim as 200nm.

83. Brunei. Claims continental shelf, but has not published delimitation.

84. Indonesia. Claimed to restrict "stopping, dropping anchor, and/or cruising about without legitimate reason" in high seas" adjoining Indonesian territorial waters; "adjoining officially interpreted to extend up to 100 miles seaward of Indonesian territorial waters. This claim is not recognized by the U.S.

85. Iraq. Mentions Contiguous Zone, but does not declare coordinates or width.

86. Italy. Closed Strait of Messina to vessels 10,000 tons or more carrying oil and other pollutants. This prohibition is not recognized by the U.S.

87. Nicaragua. Has claimed a 200NM Territorial Sea since 1979, and a 25NM Security Zone since 1983. Upon ratification of LOS Convention in 2000, Nicaragua declared it would amend domestic law to conform to LOS Convention. Current status of the claim is uncertain.

88. Monaco. Sovereign rights over the seas beyond Territorial Sea limit, in accordance with conditions prescribed in international convention on the law of the sea.

89. Egypt. Cyprus and Egypt signed an agreement on the delimitation of their respective exclusive economic zones.

90. Latvia. Delimitation agreement with Sweden.

91. Libya. Delimitation agreements with neighboring states.

92. Congo, Republic of the. Reportedly rolled back the 200nm Territorial Sea limit back to 12nm during the LOS ratification in 2008.

93. Colombia. Extends the breadth of the contiguous zone beyond 24nm in some areas surrounding islands in the Caribbean Sea. The U.S. does not recognize these claims. In 2014, the U.S. requested Colombia conform Decree No. 1946 to international law regarding these claims.

94. Somalia: Somali Maritime Law - Law No. 5 of 26 January 1989, purports to repeal the 1959 Maritime Law, (which established a 200 Territorial Sea Limit). It is assumed that the Territorial Sea is at 12nm, which conforms to U.N. guidelines and provisions. However, Law No. 5 has yet to be received by the U.N., and its contents and affirmations yet to be confirmed.

95. Joint Submission to the Commission on the Limits of the Continental Shelf in Respect of Area in the Atlantic Ocean Adjacent to the Coast of West Africa for: Cabo Verde, The Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra Leone.

(Supersedes NTM 1(57)19)

(DEPT. OF STATE/NGA)

(58) U.S. ECONOMIC SANCTIONS.

This section is meant to alert mariners and trade professionals to the existence of U.S. sanctions. Sanctions are based on U.S. foreign policy and national security concerns and are primarily administered by the U.S. Treasury Department's Office of Foreign Assets Control ("OFAC"). OFAC administers sanctions programs against targeted foreign countries, as well as terrorists, international narcotics traffickers, proliferators of weapons of mass destruction, and others. The Department of Commerce administers sanctions regarding the exportation of goods and technology (sometimes shared authority with OFAC). The regulations governing OFAC administered sanctions programs are found in chapter V of title 31, Code of Federal Regulations. For current details about OFAC and U.S. sanctions, it is important to visit the Treasury Department's sanctions website at: <http://www.treas.gov/ofac>.

(Repetition NTM 1(58)19)

(DEPT. OF TREASURY)

(59) MARITIME INDUSTRY REPORTING OF A SUSPECTED OR ACTUAL TERRORIST INCIDENT.

In addition to oil and hazardous substance releases, the National Response Center (NRC) must be notified of any suspected or actual terrorist incident (e.g., chemical, radiological, biological, or etiological discharge into the environment) anywhere in the United States and its territories, particularly one affecting transportation systems. Coast Guard units that receive reports of suspected or actual incidents should ensure such reports are reported to the NRC at 800-424-8802 or (202) 267-2675.

Individuals are encouraged to visit the NRC Web site: (<http://www.nrc.uscg.mil>) for reporting requirements and other helpful information.

(Repetition NTM 1(59)19)

(USCG)

(60) ELECTRONIC VESSEL NOTICE OF ARRIVAL (eNOA) SUBMISSION.

The Coast Guard's Notice of Arrival (NOA) rule was published in February 2003 and requires ships to submit accurate vessel, crew, passenger, and cargo information to the Coast Guard's National Vessel Movement Center (NVMC) prior to arrival in a U.S. port or place. Time frames for submitting this information are based on a vessel's voyage time. Failure to submit a NOA prior to arrival in a U.S. port or place is a violation of the regulation and may result in civil or criminal penalties or denial of a vessel to enter port. Even if a NOA is submitted, failure to submit one using the methods specified in the regulation or without accurate or complete data may result in significant delays, so industry is reminded to be familiar with submission requirements.

Vessels and their respective maritime stakeholders should review the NOA regulations found in 33 Code of Federal Regulations (CFR) Part 160, Subpart C, to ensure submission of complete and accurate reports and minimize any disruption to trade.

The regulation requires NOAs to be submitted to the NVMC via multiple means to include email, or one of three electronic methods. The electronic methods are an easy way to complete the requirements and comply with the regulation. All required information can be entered via the electronic Notice of Arrival and Departure (eNOAD), available on the NVMC Web site at: <http://www.nvmc.uscg.gov>, and consisting of the following three formats:

- A Web site that can be used to submit NOA information directly to the NVMC;
- Raw eXtensible Markup Language (XML) formatted documents that conform to the eNOAD schema, provided for those interested in creating their own application; this format would draw information from their existing systems to submit, via web service, XML formatted data to comply with NOA requirements;
- A Microsoft InfoPath template, designed for those wanting to input NOA data offline (when not connected to the Internet) for submission later via their Internet connection or as an email attachment to the NVMC.
- An XLS Workbook 7.0 for 33 CFR 160 reporting requirements and an XLS OCS Workbook 1.0 for 33 CFR 146 requirements, both available under the Downloads tab of the NVMC website.

Vessels should remember that the eNOAD serves as a collection for the Coast Guard's Notice of Arrival requirements and U.S. Custom and Border Protection's (USCBP) Advanced Passenger Information System (APIS) requirements, which were published on 5 April 2005. Submissions received through one of the three eNOAD formats fulfill both agencies' requirements.

Submitting a NOA via fax, telephone, or regular email does not meet CBP vessel APIS requirements published in 19 CFR Part 4.

On January 13, 2011 the U.S. Coast Guard issued a final rule for 33CFR 146 to establish Notice of Arrival ("NOA") requirements for "units" (i.e. U.S. and foreign flag vessels, floating facilities, and mobile offshore drilling units ("MODUs")) engaging in Outer Continental Shelf ("OCS") activities in order to enhance U.S. maritime domain safety and security awareness on the OCS. Previously, only MODUs were required to make NOA reports offshore; this new regulation became effective February 14, 2011 and can be found at: www.nvmc.uscg.gov under the Regulations tab.

The responsibility for ensuring that an NOA/D report is provided to the NVMC remains with the vessel owner/operator or agent. The NVMC Web site www.nvmc.uscg.gov offers information on both agencies' requirements, methods of submission, and frequently asked questions (FAQs). The NVMC can be contacted at: sans@nvmc.uscg.gov or by telephone at 1-800-708-9823 or 304-264-2502 for more information. For NOA regulatory issues, contact the U.S. Coast Guard Headquarters Advance NOA Program Manager LCDR Mike Lendvay at 202-372-1218. The U.S. Customs and Border Protection submission and regulation guide may be found at the USCBP web site: http://www.cbp.gov/linkhandler/cgov/travel/inspections_carriers_facilities/apis/air_vessel_guides/vessel_guide.ctt/vessel_guide.pdf. The CBP Questions/Customer Service General Inquiries phone number is 1-877-CBP-5511 (1-877-227-5511).

(Repetition NTM 1(60)19)

(USCG)

(61) AMERICA'S WATERWAY WATCH.

The U. S. Coast Guard and the Coast Guard Auxiliary national awareness program, America's Waterway Watch, asks those who work, live, or recreate on or near the water to be aware of suspicious activity that might indicate threats to our country's homeland security. Americans are urged to adopt a heightened sensitivity toward unusual events and individuals they may encounter in or around ports, docks, marinas, riversides, beaches, or communities.

Anyone observing suspicious activity is asked to note details and contact the National Response Center at: 1-877 24 WATCH (9-2824). In the case of immediate danger to life or property, call local authorities at 911. The Coast Guard cautions people not to approach or challenge anyone acting in a suspicious manner.

Suspicious activities include:

- People appearing to be engaged in surveillance of any kind;
- Unattended vessels or vehicles in unusual locations;
- Lights flashing between boats;
- Unusual diving activity;
- Unusual number of people onboard a vessel;
- Unusual night operations;
- Recovering or tossing items into/onto the waterway or shoreline;
- Operating in or passing through an area that does not typically have such activity.

Watch for vessels and individuals in locations:

- Under and around bridges, tunnels, or overpasses;
- Near commercial areas or services like ports, fuel docks, cruise ships, or marinas;
- Near industrial facilities like power plants and oil, chemical, or water intake facilities;
- Near military bases and vessels, other government facilities, or security zones.

More information, downloadable file of brochures, decals, posters, and wallet size cards are available at: <http://aww.uscg.mil/>. Additionally, the Coast Guard has partnered with the Nationwide Suspicious Activity Reporting Initiative (NSI) to develop online, maritime specific, suspicious activity identification and reporting training. This training can be accessed at: <http://nsi.ncirc.gov/hsptregistration/maritime/>.

For more information about the America's Waterway Watch program, contact Mr. Ryan Owens at (202) 372-1108.

(Repetition NTM 1(61)19)

(USCG)

(62) LOSS OF INMARSAT-C SAFETY MESSAGES.

This advisory notifies users of Inmarsat-C ship earth stations that urgent marine information, weather warning and navigational warning broadcast messages, distress-related messages, as well as routine messages may be lost on certain older equipment if a printer is not connected to and maintained with the Inmarsat-C terminal, or if floppy drive maintenance is not regularly performed on the terminal. Additionally, certain non-GMDSS-approved software (e.g., windows-based software) may freeze up if this maintenance is not performed.

(Repetition NTM 1(62)19)

(USCG)

(63) AUTOMATIC IDENTIFICATION SYSTEM.

Automatic Identification System (AIS) is a maritime navigation safety communications system standardized by the International Telecommunication Union (ITU), adopted by the International Maritime Organization (IMO), that: provides vessel information, including the vessel's identity, type, position, course, speed, navigational status and other safety-related information automatically to appropriately equipped shore stations, other ships, and aircraft; receives automatically such information from similarly fitted ships; monitors and tracks ships; and exchanges data with shore-based facilities. In the United States, AIS carriage extends beyond the IMO requirements and to every commercial self-propelled: (1) Vessel of 65 ft or more in length (regardless of service type); (2) Towing vessel of 26 ft or more in length and more than 600 hp; (3) Vessel certificated to carry more than 150 passengers; (4) Vessel engaged in dredging ops likely to affect or restrict commercial navigation; and, (5) Vessel engaged in the movement of certain dangerous cargo, flammable or combustible liquids carried in bulk.

Notice. The Coast Guard continues to see an unacceptable number of AIS vessels reporting improper 'Navigational Status'

(63) AUTOMATIC IDENTIFICATION SYSTEM. (Continued).

when at anchor or moored; doing so reduces their reporting rate to once every 3 minutes vice every few seconds, which mitigates network congestion and improves everyone's AIS range. Further, many vessels are broadcasting inaccurate AIS information, stemming from improper operation or encoding of their AIS; particularly regarding their Maritime Mobile Service Identifies (MMSI), IMO number, call-sign, name, dimensions, destination and ETA, etc. To assist AIS users in performing this task correctly, the Coast Guard has developed an Encoding Guide which provides details and examples on how to properly encode each AIS data parameter. This Guide is available on the U.S. Coast Guard Navigation Center website at: <https://www.navcen.uscg.gov/AIS>. Note, this Guide has been revised, such that, it will require certain users, i.e. tugs and push-boats, to correct certain data parameters, i.e. vessel type and dimensions. *Improper use of AIS may subject a vessel to civil penalties.*

Warning. AIS is another available means to determine risk of collision. However, assumptions should not be made on the basis of AIS information alone, which unfortunately is fraught with inaccurate or out-dated information. Further, as with any source of navigation information it should not be solely relied upon in making navigational and collision-avoidance decisions (also see Navigation Rule 7). While AIS allows for safety related ship-to-ship text messaging to communicate with others, such as passing arrangements, these communications do NOT relieve users from the requirements set forth in the Vessel Bridge-to-Bridge Radiotelephone regulations (33 CFR §26) or relieve a vessel from the sound or display signals requirements of the Navigation Rules.

Report: To report a problem or for further information regarding AIS, including plans to extend U.S. carriage requirements to most commercial ships transiting U.S. navigable waters, visit: <https://www.navcen.uscg.gov/?pageName=nAISProblem> or email: cgnav@uscg.mil.

(Repetition NTM 1(63)19)

(USCG)

(64) CELLULAR TELEPHONE USE FOR MARITIME DISTRESS NOTIFICATION.

Cellular telephone ownership and coverage areas have expanded greatly in recent years. Many areas in the coastal maritime environment have some cellular service coverage. The Coast Guard has seen a significant increase in distress notifications via cellular telephone call from the mariner.

The Coast Guard urges mariners to regard cellular telephone capability as a backup to, not a replacement for, VHF-FM radio capability or other internationally recognized maritime distress signal. While the Coast Guard responds to cellular calls the same as any other distress notification, cellular telephones have a number of inherent disadvantages when used in a maritime search and rescue environment. These include:

- Other mariners in the local area cannot hear the call;
- Maritime coverage areas for cellular service are sporadic since most coverage is not designed to cover the marine environment;
- To contact a Coast Guard unit directly, the caller must have a list of phone numbers;
- 911 operators may or may not know proper procedures for handling a maritime distress case;
- Responding rescue forces cannot use direction finding equipment to locate the distressed mariner;
- Cell phones usually have limited battery endurance;
- Responding rescue forces may not have the ability to call the cellular telephone from the rescue platform.

If a mariner makes a distress call by cellular telephone, in addition to the information requested for any distress notification (such as location, type of vessel, type of distress, number of persons, etc.), it is important that the mariner also provide his/her cellular telephone number and a land based backup number.

(Repetition NTM 1(64)19)

(USCG)

(65) DISCOLORED WATER.

Discolored water is an area of seawater having a color distinctly different from the surrounding water. These observations will normally be of seawater having a color other than the blues and greens typically seen. Variations of the colors – including red, yellow, green and brown, as well as black and white have been reported. This may be due to dumping (pollution), the existence of shoals, or underwater features such as submerged volcanoes. In near-shore areas, discoloration often results from disturbance of sediment, e.g., disturbances by propeller wash. Discolorations may appear in patches, streaks, or large areas and may be caused by concentrations of inorganic or organic particles or plankton.

In normally deep waters, discolored water can be a strong indication of undersea growth of coral reefs, submerged volcanoes, seamounts, pinnacles and the like. As these features grow in size and dimension, their only indication may be in the form of discolored water on the surface of the sea. Mariners must be prudent in such waters, as they will normally be in areas that are not well surveyed and outside of established routes for oceangoing vessels.

NGA does not maintain a database of such occurrences worldwide. In areas of active submerged volcanoes, discolored

(65) DISCOLORED WATER. (Continued).

water is a common occurrence and all such reports are charted or included in a Notice to Mariners correction. Mariners are urged to submit new reports of discolored water to the nearest NAVAREA Coordinator via coast radio stations (for NAVAREA IV and NAVAREA XII, by email to navsafety@nga.mil). Reports can also be submitted via the NGA Maritime Safety Web site (<https://msi.nga.mil/submit-report>).

The legend "Discolored water" appears on many NGA charts, particularly those of the Pacific Ocean where underwater volcanic activity is known to occur. In such areas, shoal water or discolored water may suddenly appear where only deep water has been historically depicted. Most of these legends remain on the charts from the last century, when very few deep sea soundings were available and less was known about the causes of discolored water. Few reports of discolored water have proved on examination to be caused by shoals. Nonetheless, due to the isolated areas normally in question, mariners should always give prudent respect to what may lie beneath the surface.

Today, such reports can be compared with the accumulated information for the area concerned. A more thorough assessment can be made using imagery if the water conditions and depth (roughly less than 100 feet) allow.

Mariners are therefore encouraged, while having due regard to the safety of their vessels, to approach sightings and areas of discolored water to find whether or not the discoloration is due to shoaling. If there is good reason to suppose the discoloration is due to shoal water, a report should be made as noted above.

Volcanic activity. On occasion, volcanic eruptions may occur beneath the surface of the water. These submarine eruptions may occur more frequently and may be more widespread than has been suspected in the past. Sometimes the only evidence of a submarine eruption is a noticeable discoloration of the water, a marked rise in sea surface temperature, or floating pumice.

Mariners witnessing submarine volcanic activity have reported trails of steam with a foul sulfurous odor rising from the sea surface and unusual sounds heard through the hull, including shocks resembling a sudden grounding. A subsea volcanic eruption may be accompanied by rumbling and hissing, as hot lava meets the cooler sea.

In some cases, reports of discolored water at the sea surface have been investigated and found to be the result of newly-formed volcanic cones on the sea floor. These cones can grow rapidly and constitute a hazardous shoal in only a few years.

Variations in Color. The normal color of the sea in the open ocean in middle and low latitudes is an intense blue or ultramarine. The following variations in appearance occur elsewhere:

- In coastal regions and in the open sea at higher latitudes, where the minute floating animal and vegetable life of the sea (plankton) is in greater abundance, the blue of the sea is modified to shades of green and bluish-green. This discoloration results from a soluble yellow pigment discharged by the plant constituents of the plankton.
- When plankton is found in dense concentrations, the color of the organisms themselves may discolor the sea, giving it a more or less intense brown or red color. The Red Sea, Gulf of California, the region of the Peru Current, South African waters, and the Malabar Coast of India are particularly liable to this variation, seasonally.
- Plankton is sometimes suddenly exterminated by changes in sea conditions, producing a dirty brown or grayish-brown discoloration. This occurs on an unusually extensive scale at times off the Peruvian coast, where the phenomenon is called "Aguaje."
- Larger masses of animate matter, such as fish spawn or floating kelp may produce other kinds of temporary discoloration.
- Mud carried down by rivers produces discoloration which, in the case of the great rivers, may affect a large sea area, such as the Amazon River outfall. Soil or sand particles may be carried out to sea by wind or dust storms, and volcanic dust may fall over a sea area. In all such cases, the water is more or less muddy in appearance.
- Submarine earthquakes may also produce mud or sand discoloration in relatively shallow water, and crude oil has sometimes been seen to gush up. The sea may be extensively covered with floating pumice after a volcanic eruption.
- Isolated shoals in deep water may make the water appear discolored, the color varying with the depth of the water. The play of the sun and cloud on the sea may often produce patches appearing at a distance convincingly like shoal water.

Visibility. The distance at which coral reefs can be seen is dependent upon the observer's height of eye, the state of the sea, and the relative position of the sun. When the sea is glassy calm, it is extremely difficult to distinguish the color difference between shallow and deep water. The best conditions for sighting reefs result from a relatively high position, with the sun above 20 degrees elevation and behind the observer, and a sea ruffled by a slight breeze. Under these conditions, with a height of eye of 10-15 meters it is usually possible to sight patches at a depth of less than 6-8 meters from a distance of a few hundred yards.

The use of polarized lenses is strongly recommended, as they make the variations in color of the water stand out more clearly.

(65) DISCOLORED WATER. (Continued).

If the water is clear, patches with depths of less than 1 meter will appear to be light brown in color; those with depths of 2 meters or more appear to be light green, deepening to a darker green for depths of about 6 meters, and finally to a deep blue for depths over 25 meters. Cloud shadows and shoals of fish may be quite indistinguishable from reefs, but it may be possible to identify them by their movement.

The edges of coral reefs are usually more uniform on their windward or exposed sides and are therefore more easily seen, while the leeward sides are frequently characterized by detached coral heads that are more difficult to see clearly. Water over submerged coral reefs is normally a light blue.

Due to the uncertainty of what discolored water may indicate, mariners are always urged to exercise extreme caution when in its vicinity. New reports of discolored water should be reported immediately with resulting chart, publication and radio/satellite warnings issued as appropriate.

(Repetition NTM 1(65)19)

(NGA)

(66) INTERNATIONAL MARITIME BUREAU (IMB) MARITIME SECURITY HOTLINE.

The International Maritime Bureau (IMB) Piracy Reporting Center has established a dedicated hotline for seafarers, port workers, shipping agents, shipyard personnel, brokers, stevedores, and all concerned parties to report any information that they may have seen, heard, known of, etc., relating to maritime crime and/or security, including terrorism, piracy and other illegal activities. Maritime crime and security concerns us all and with your help, the IMB can try to minimize the risks and help save lives and property. All information received will be treated in strict confidence and will be passed on to the relevant authorities for further action.

The IMB Maritime Security Hotline can be contacted 24 hours a day at:

Telephone: + 60 3 2078 5763

Fax: + 60 3 2078 5769

email: imbkl@icc-ccs.org / piracy@icc-ccs.org

24 Hours Anti Piracy HELPLINE Tel: + 60 3 2031 0014

Web site: <https://icc-ccs.org/index.php/piracy-reporting-centre/report-an-incident>

(Repetition NTM 1(66)19)

(IMB)

(67) TRANSPORTATION WORKER IDENTIFICATION CREDENTIAL (TWIC).

TWIC was established by Congress through the Maritime Transportation Act of 2002 (MTSA) and is administered by the Transportation Security Administration (TSA) and U.S. Coast Guard (USCG). TWICs are tamper-resistant biometric credentials issued to credentialed merchant mariners operating onboard MTSA regulated vessels, as well as workers who require unescorted access to secure areas of facilities, vessels, and outer continental shelf facilities.

To obtain a TWIC, an individual must visit an enrollment center where they will pay the enrollment fee, provide biographic Information, a complete set of fingerprints, and sit for a digital photograph. Pre-enrollment is highly encouraged as it is designed to save the applicant time and provides the ability to make an appointment. TSA's "OneVisit" program allows applicants to choose to have their TWIC cards mailed directly to their home, or other location, instead of returning to an enrollment center to pick up their TWIC. This applies to new or renewed enrollment cards or replacements for lost, stolen, or damaged cards. If you choose to receive your card by mail you will only be required to make one visit to an enrollment center to complete the enrollment process. When you receive your card it will be activated and ready to use. A mailer with the card's preset Personal Identification Number (PIN) will be sent to you separately. If you receive your card by mail and want to change your preset PIN you can visit any enrollment center to have it set to your selected PIN at no cost. You may also select your PIN if you choose to pick up your card at an enrollment center.

For more information on the TWIC program including enrollment locations please visit TSA's websites at <http://www.tsa.gov/for-industry/twic>.

(Supersedes NTM 1(67)19)

(USCG)

(68) LONG RANGE IDENTIFICATION AND TRACKING (LRIT) SYSTEM.

Long Range Identification and Tracking (LRIT) system regulatory requirements can be found in the U.S. Code of Federal Regulations, Title 33: Navigation and Navigable Waters, Part 169 – Ship Reporting Systems. Specific LRIT system requirements can be found on the U.S. Coast Guard's Navigation Center website at:

<https://www.navcen.uscg.gov/?pageName=lritMain>.

(68) LONG RANGE IDENTIFICATION AND TRACKING (LRIT) SYSTEM. (Continued).

The LRIT system provides for the global identification and tracking of ships worldwide. LRIT requirements were developed by the International Maritime Organization (IMO) and implemented in the Safety of Life at Sea (SOLAS) 1974 Convention under Regulation V/19-1. The U.S. Coast Guard serves as the Administration for adopting, implementing and enforcing LRIT regulatory and system requirements. The LRIT system consists of the ship borne LRIT information transmitting equipment, the Communication Service Provider(s), the Application Service Provider(s), the LRIT Data Center(s), including any related Vessel Monitoring System(s), the LRIT Data Distribution Plan and the International LRIT Data Exchange. LRIT data serves many purposes including, but not limited to: navigation safety, maritime security and domain awareness, environmental protection, vessel traffic services, search and rescue, weather forecasting and prevention of marine pollution.

The U.S. Coast Guard operates an International Data Exchange (IDE) in support of the IMO and international maritime member state countries. Also, the U.S. Coast Guard maintains a National Data Center (NDC) that monitors vessels that are 300 gross tons or greater on international voyages and either bound for a U.S. port or traveling within 1000 nautical miles of the U.S. coast.

Operators of U.S. flagged vessels subject to 33 CFR Part 169 LRIT regulations are encouraged to contact the U.S. Coast Guard from the websites listed above to discuss LRIT regulatory and conformance testing requirements. Vessels with existing GMDSS, SSAS, or LRIT capable equipment can demonstrate compliance with LRIT regulations through issuance of a Conformance Test Report (CTR) issued by the Application Service Provider (ASP). Vessels purchasing new LRIT stand-alone equipment with U.S. Coast Guard type approval (<http://cgmix.uscg.mil/equipment/>) along with a CTR is needed to demonstrate compliance with the LRIT regulations.

On behalf of the United States, the U.S. Coast Guard recognizes Pole Star Space Applications as the U.S. testing ASP. Previously issued CTRs issued by CLS America will remain valid. For more information on scheduling an LRIT conformance test, please visit the U.S. Coast Guard Navigation Center's website and contact page at:

<https://www.navcen.uscg.gov/?pageName=lritConformanceTestSched>, enter your contact information, and enter "Test Scheduling" in the comments field. A U.S. Coast Guard representative associated will reply.

(Supersedes NTM 1(68)19)

(USCG)

(69) COUNTER-PIRACY.

Under the authority of the U.S. Code of Federal Regulations (CFR), Title 33: Navigation and Navigable Waters, Part 101.405 – Maritime Security Directives, the U.S. Coast Guard issued MARSEC Directive 104-6 (Series) to provide direction to U.S. flagged vessels operating on high risk waters.

The general requirements include: the conduct of vessel specific threat assessments, measures taken to harden the vessel, consideration to utilizing security personnel, and submittal of a piracy annex to the Vessel Security Plan (VSP) for U.S. Coast Guard review and approval. MARSEC Directive 104-6, Annex 1, addresses special requirements for commercial vessels operating on the Horn of Africa and Gulf of Aden waters.

The U.S. Coast Guard and U.S. Maritime Administration (MARAD) maintain counter-piracy websites with detailed information including, but not limited to: anti-piracy guidelines, piracy reports, port security advisories, joint agency initiatives and international efforts on deterring piracy.

(Repetition NTM 1(69)19)

(USCG)

(70) SPACE WEATHER IMPACTS.

Different types of space weather can affect different types of technologies on Earth. Solar flares can produce strong X-rays that degrade or block high frequency radio waves used for radio communication during events known as Radio Blackout Storms. Solar Energetic Particles (energetic protons) can penetrate satellite electronics and cause electrical failure. These energetic particles also block radio communications at high latitudes during Solar Radiation Storms. Coronal Mass Ejections (CME) can cause geomagnetic storms on Earth and induce extra currents in the ground that can degrade power grid operations.

Geomagnetic storms can also modify the signal from radio navigation systems (GPS and GNSS) causing degraded accuracy. Geomagnetic storms also produce the aurora. Space weather affects people who depend on these technologies. For more information on space weather and its effects on radio and satellite communications visit: <https://www.swpc.noaa.gov/impacts>

(Supersedes NTM 1(70)19)

(NOAA)

(71) MARINER'S SAFETY ENDANGERED WHEN VHF RADIO DISTRESS ALERTS BY DIGITAL SELECTIVE CALLING (DSC) LACK LOCATION AND IDENTIFICATION INFORMATION.

U.S. Coast Guard rescue centers can receive instant distress alerts from commonly used DSC-capable VHF marine radios. However, approximately 90% of VHF DSC distress alerts received by the Coast Guard do not contain position information, and approximately 60% do not contain a registered identity. The Coast Guard cannot effectively respond to a DSC distress alert sent from such a radio. This means that search and rescue efforts may normally be suspended when:

- No communications with the distressed vessel can be established
- No further information or means of contacting the vessel can be obtained from other sources
- No positional information is known

HELP THE COAST GUARD HELP YOU

First: Obtain a Maritime Mobile Installation Identity (MMSI) and enter it into your radio. MMSI numbers are issued by the Federal Communications Commission (FCC) if your vessel otherwise requires a station license, or BOATUS (<http://www.boatus.com/mmsi>), Sea Tow (<https://www.seatow.com/tools-and-education/mmsi>), or the U.S. Power Squadrons (http://www.usps.org/php/mmsi_new/). Ensure any information originally provided is updated as changes occur. FCC regulations require DSC-equipped radios "use MMSI assigned by the Commission or its designees" (47 CFR 80.103(b)).

Then: Interconnect your radio to a GPS receiver using a two-wire NMEA 0183 interface on all DSC equipped marine radios and on most GPS receivers. Instructions should be provided in the radio and GPS operator's manual. Further information is provided and will be routinely updated at: <https://www.navcen.uscg.gov/?pageName=aboutDSC>.

(Repetition NTM 1(71)19)

(USCG)