



U.S. Department
of Transportation

United States
Coast Guard



**Merchant Marine Deck
Examination Reference Material**

REPRINTS FROM THE

**LIGHT LISTS
AND
COAST PILOTS**

DEPOSITORY ITEM
DOCUMENT
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EXAMINATIONS FOR MERCHANT MARINE LICENSES AND DOCUMENTS**

NOT TO BE USED FOR NAVIGATION



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COMMANDANT PUBLICATION P16721.38

Subj: MERCHANT MARINE DECK EXAMINATION REFERENCE MATERIAL,
REPRINTS FROM THE LIGHT LISTS AND COAST PILOTS.

1. PURPOSE. This publication contains reference material for use during an examination for a merchant marine deck license. It contains excerpts from Light Lists, Volumes 1 and 2, and Coast Pilots 2 and 3. This manual is current with the training charts used in the examinations.
2. DISCUSSION. Applicants for merchant marine deck licenses are tested to ensure their professional qualification. Some practical navigation questions are based on material in this publication, and applicants must refer to this publication to develop the correct answer.

PROCEDURE. This publication is available to applicants taking a deck merchant marine examination. The covers available for sale from the the Government Printing Office (GPO) are printed with red ink. The covers used in the Regional Examination Centers are printed with green ink. Applicants who purchase copies of this publication from the GPO may not use their personal copies during examinations.

ORDERING INFORMATION.

- a. Regional Examination Centers will be provided with an initial supply of this publication. Replacement and additional copies are available through standard distribution sources.

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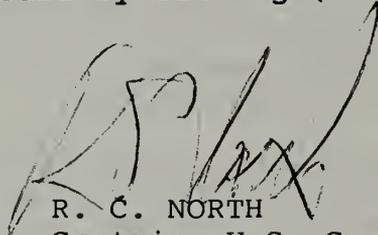
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- b. The public and other Coast Guard units may order copies of this publication from the GPO at the following address:

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R. C. NORTH
Captain, U.S. Coast Guard
Acting Chief, Office of Marine Safety,
Security and Environmental Protection

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INSTRUCTIONS

1. This reference contains extracts of the LIGHT LISTS and COAST PILOTS. Some practical navigation questions in the deck examination booklets require plotting on Training Charts to determine the answer. Navigational information necessary to aid in plotting these problems is contained in this manual.

2. Applicants may also refer to this manual when testing with any module except Rules of the Road. For example, if the question in a Navigation General module is, "You lose sight of Orient Point Light, on the eastern end of Long Island, at a distance of 9.0 miles. What is the approximate meteorological visibility?", then you must use the "Luminous Range Diagram" on page xxxiv of the LIGHT LIST found in PART 1, SECTION A.

3. This manual is in 2 parts to correspond with the Training Charts. Each part has a section A (Light List) and a section B (Coast Pilot). Each section has its own index and three sections are printed on colored paper. The other section is printed on white paper.

Part 1, Section A - Blue pages

Part 1, Section B - White pages

Part 2, Section A - Yellow pages

Part 2, Section B - Green pages

4. Applicants who wish to comment on any material in this publication should complete a Comment/Protest form for the question involved and give it to the examiner.

5. Individuals not taking an examination who wish to make a comment about this publication should send a written comment, citing this publication and the appropriate page and paragraph to:

Commandant (G-MVP-5)
U.S. Coast Guard
REPRINTS from LIGHT LISTS & COAST PILOTS
2100 Second Street SW
Washington, D.C. 20593-0001

All comments are welcomed and will be acknowledged. Valid comments will be incorporated into this publication.

MERCHANT MARINE DECK EXAMINATION REFERENCE MATERIAL

Reprints from

LIGHT LISTS and COAST PILOTS

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- SECTION A. LIGHT LIST - Volume I (blue pages)
SECTION B. COAST PILOT - 2 (white pages)

PART 2. CHESAPEAKE BAY ENTRANCE and approaches

- SECTION A. LIGHT LIST - Volume II (yellow pages)
SECTION B. COAST PILOT - 3 (green pages)

NOTE: For general information, regulations, and appendix refer to appropriate section in PART 1. This general information has been deleted from PART 2.

PART 1 - SECTION A

LIGHT LIST

Volume I - Atlantic Coast

covering

BLOCK ISLAND SOUND and EASTERN LONG ISLAND SOUND

including

general information on pages i to xxxiv

contents found on page iv

DEPARTMENT OF TRANSPORTATION, U.S. COAST GUARD

LIGHT LIST

Volume I

ATLANTIC COAST

St. Croix River, Maine to
Toms River, New Jersey

SeaSources.net
IMPORTANT

THIS PUBLICATION SHOULD BE CORRECTED
EACH WEEK FROM THE LOCAL NOTICES TO MARINERS
OR NOTICE TO MARINERS AS APPROPRIATE.

COMDTPUB P16502.1

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PREFACE

Lights and other marine aids to navigation, maintained by or under authority of the United States Coast Guard, on the Atlantic coast of the United States from St. Croix River, ME to Toms River, NJ are listed in this volume.

Included are all Coast Guard aids to navigation used for general navigation. Not included are Coast Guard mooring buoys and some buoys having no lateral significance such as special purpose, anchorage, fish net, and dredging.

PRIVATE AIDS TO NAVIGATION

Included—Class I: Aids to navigation on marine structures or other works which the owners are legally obligated to establish, maintain, and operate as prescribed by the Coast Guard.

Included—Class II: Aids to navigation exclusive of Class I, located in waters used by general navigation.

Not included—Class III: Aids to navigation exclusive of Class I and Class II, located in waters not ordinarily used by general navigation.

This list, published annually, is intended to furnish more complete information concerning aids to navigation than can be conveniently shown on charts. It is not intended to be used during navigation in place of charts or Coast Pilots and should not be so used. The charts should be consulted for the location of all aids to navigation. It may be dangerous to use aids to navigation without reference to charts.

This list is corrected to the date of the Notices to Mariners shown on the title page. Changes made to aids to navigation during the year are published in the Local Notice to Mariners and the Notice to Mariners. Important changes to aids to navigation are also broadcast by the U.S. Coast Guard through Coast Guard or Naval radio stations. Mariners should keep their Light List, as well as charts and other nautical publications, corrected from these notices and should consult all notices issued after the date of publication of the Light List.

IMPORTANT: A summary of corrections for this publication, which includes corrections from the dates shown on the title page to the date of availability, is published in the Local Notices to Mariners and the Notice to Mariners. These corrections must be applied, in order to bring the Light List up-to-date. Additionally, this publication should be corrected weekly from the Local Notice to Mariners or the Notice to Mariners as appropriate.

Mariners and others are requested to bring to the attention of the District Commander (see p. iii) or Commandant (G-NSR-3/14), U.S. Coast Guard, 2100 Second St., S.W., Washington, DC 20593-0001, any apparent errors or omissions in these lists.

RECORD OF CORRECTIONS PUBLISHED IN LOCAL/WEEKLY NOTICES TO MARINERS

YEAR 19__

1.....	14.....	27.....	40.....
2.....	15.....	28.....	41.....
3.....	16.....	29.....	42.....
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YEAR 19__

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2.....	15.....	28.....	41.....
3.....	16.....	29.....	42.....
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13.....	26.....	39.....	52.....

North American Datum of 1983: Through the use of satellites and other modern surveying techniques, it is now possible to establish global reference systems which provide more accurate geographic positions. Currently, several datums such as the North American Datum of 1927, U.S. Standard Datum, Old Hawaiian Datum, Puerto Rican Datum, Local Astronomic Datum, and others are in use. The National Oceanic and Atmospheric Administration (NOAA) has identified the North American Datum of 1983 (NAD 83) to replace the various datums in use on charts.

NOTE: The geographic positions listed in the Light List are referenced to the horizontal datum of the current edition of the chart identified in the heading preceding an entry. Corrections to the geographic positions listed will appear in the Local Notices to Mariners and the Notice to Mariners as new charts referencing NAD 83 are issued.

COAST GUARD DISTRICTS AND ADDRESSES OF DISTRICT COMMANDERS

DISTRICT	ADDRESS	WATERS OF JURISDICTION
FIRST	408 Atlantic Avenue Boston, MA 02110-3350 PHONE: DAY 617-223-8338 PHONE: NIGHT 617-223-8558	Maine, New Hampshire, Massachusetts, Vermont (Lake Champlain), Rhode Island, Connecticut, New York, to Toms River, New Jersey.
SECOND	1222 Spruce Street St. Louis, MO 63103-2835 PHONE: DAY 314-539-3714 PHONE: NIGHT 314-539-3709	Mississippi River System, except that portion of the Mississippi River south of Baton Rouge, Louisiana and the Illinois River north of Joliet, Illinois and the Tennessee-Tombigbee Waterway below Mile 411.9.
FIFTH	Federal Building 431 Crawford Street Portsmouth, VA 23704-5004 PHONE: DAY 804-398-6486 PHONE: NIGHT 804-398-6231	Toms River, New Jersey to Delaware, Maryland, Virginia, District of Columbia and North Carolina.
SEVENTH	Brickell Plaza Building 909 SE 1st Avenue Miami, FL 33131-3050 PHONE: DAY 305-536-5621 PHONE: NIGHT 305-536-5611	South Carolina, Georgia, Florida to 83°50'W, and Puerto Rico and adjacent islands of the United States.
	Commander Greater Antilles Section U.S. Coast Guard P.O. Box S-2029 San Juan, PR 00903-2029 PHONE: 809-729-6870	Immediate Jurisdiction of waters of Puerto Rico and adjacent islands of the United States.
EIGHTH	Hale Boggs Federal Building 501 Magazine Street New Orleans, LA 70130-3396 PHONE: DAY 504-589-6234 PHONE: NIGHT 504-589-6225	Florida from 83°50'W, thence westward, Alabama, Mississippi, Louisiana and Texas.
NINTH	1240 East 9th Street Cleveland, OH 44199-2060 PHONE: DAY 216-522-3991 PHONE: NIGHT 216-522-3984	Great Lakes and St. Lawrence River above St. Regis River.
ELEVENTH	Union Bank Building 400 OceanGate Blvd. Long Beach, CA 90822-5399 PHONE: DAY 310-499-5410 PHONE: NIGHT 310-499-5380	California.
THIRTEENTH	Federal Building 915 Second Avenue Seattle, WA 98174-1067 PHONE: DAY 206-553-5864 PHONE: NIGHT 206-553-5886	Oregon, Washington, Idaho, and Montana.
FOURTEENTH	Prince Kalaniana'ole Federal Bldg. 9th Floor, Room 9139 300 Ala Moana Blvd. Honolulu, HI 96850-4982 PHONE: DAY 808-541-2320 PHONE: NIGHT 808-541-2500	Hawaii, American Samoa, Marshall, Marianas, and Caroline Islands, and Subic Bay, Philippines.
SEVENTEENTH	P.O. Box 25517 Juneau, AK 99802-5517 PHONE: DAY 907-463-2245 PHONE: NIGHT 907-463-2000	Alaska.

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INTRODUCTION

Arrangement. Aids to navigation on the Atlantic coast from St. Croix River, ME to Toms River, NJ are listed in this volume.

Aids to navigation are arranged in geographic order from north to south along the Atlantic coast. Seacoast aids to navigation are listed first, followed by entrance and harbor aids to navigation listed from seaward to the head of navigation.

Names of aids to navigation are printed as follows to help distinguish at a glance the type of aid to navigation listed:

Seacoast Lights, Secondary Lights, and Large Navigational Buoys

Radiobeacons

Fog Signals

RIVER, HARBOR, AND OTHER LIGHTS

Lighted Buoys

Daybeacons and Unlighted Buoys

Light List numbers are assigned to all aids to navigation in order to facilitate reference in the Light List and to resolve ambiguity when referencing aids to navigation. Aids to navigation are numbered by fives in accordance with their order of appearance in each volume of the Light List. Other numbers and decimal fractions are assigned where newly established aids to navigation are listed between previously numbered aids to navigation. The Light Lists are renumbered periodically to assign whole numbers to all aids to navigation.

International numbers are assigned to certain aids to navigation in cooperation with the International Hydrographic Organization. They consist of an alphabetic character followed by three or four numeric characters. A cross reference listing appears after the index.

Description of Columns

- Column (1) Light List number.
- Column (2) Name of the aid to navigation. A dash (-) is used to indicate the bold heading is part of the name of the aid. When reporting defects or making reference to such aids to navigation in correspondence, the full name of the aid to navigation, including the geographic heading, should be given.
- Bearings are in degrees true, read clock wise from 000° through 359°. Bearings on rangelines are given in degrees and minutes.
- Column (3) Geographic position in latitude and longitude. **NOTE:** Latitude and longitude is approximate, to the nearest tenth of a minute, and is intended only to facilitate locating the aid to navigation on the chart.
- Column (4) Light characteristic for lighted aids to navigation. Morse characteristic for radiobeacons.
- Column (5) Height above water from the focal plane of the fixed light to mean high water, listed in feet. For metric conversion, see table inside rear cover.

Column (6) The nominal range of lighted aids to navigation is listed in nautical miles, except for Lake Champlain which is listed in statute miles. Nominal range is further listed by color for alternating lights. The nominal range is not listed for ranges, directional lights or private aids to navigation. Effective range for radiobeacons is listed in nautical miles.

Column (7) Structural characteristic of the aid to navigation, including: daymark (if any), description of fixed structure, color and type of buoy, height of structure above ground.

Column (8) General remarks, including: fog signal characteristic, RACON characteristic, light sector's arc of visibility, radar reflector if installed on fixed structure, emergency lights, seasonal remarks, and private aid to navigation identification.

Abbreviations used in the Light Lists.

Al	- Alternating	lt	- Light
bl	- blast	LNB	- Large Navigational Buoy
C	- Canadian	MHz	- Megahertz
ec	- Eclipse	Mo	- Morse Code
ev	- Every	Oc	- Occulting
F	- Fixed	ODAS	- Anchored Oceanographic Data Buoy
fl	- flash	Q	- Quick (Flashing)
Fl	- Flashing	Ra ref	- Radar reflector
FS	- Fog Signal	R	- Red
Fl(2)	- Group flashing	RBN	- Radiobeacon
G	- Green	s	- seconds
iso	- Interrupted	si	- Silent
kHz	- Isophase (Equal Interval)	SPM	- Single Point Mooring Buoy
LFI	- Kilohertz	W	- White
	- Long Flash	Y	- Yellow

RELATED PUBLICATIONS

Other Light Lists published by the Coast Guard

- VOLUME II, ATLANTIC COAST, describes aids to navigation from Toms River, New Jersey to Little River, South Carolina.
- VOLUME III, ATLANTIC AND GULF COASTS, describes aids to navigation from Little River, South Carolina to Econfina River, Florida.
- VOLUME IV, GULF OF MEXICO, describes aids to navigation from Econfina River, Florida to the Rio Grande, Texas
- VOLUME V, MISSISSIPPI RIVER SYSTEM, describes aids to navigation on the Mississippi River and its navigable tributaries.
- VOLUME VI, PACIFIC COAST AND PACIFIC ISLANDS, describes aids to navigation on the Pacific coast and outlying Pacific Islands.
- VOLUME VII, GREAT LAKES, describes aids to navigation on the Great Lakes and the St. Lawrence River above the St. Regis River.

Coast Guard Light Lists are sold by the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, DC 20402, by GPO Bookstores, and by GPO Sales Agents.

Charts, Coast Pilots, Tide Tables, and Tidal Current Tables covering the United States and its territories are published by the National Ocean Service (NOS), Rockville, MD 20852, and are for sale by NOS and authorized NOS Sales Agents.

Maps for the Mississippi River System are published by the various District Engineers, U.S. Army Corps of Engineers.

Sailing Directions covering the waters outside of the U.S. and its territories are published by the Defense Mapping Agency Hydrographic/Topographic Center.

Radio Navigational Aids (RAPUB 117) is published by the Defense Mapping Agency Hydrographic/Topographic Center. This publication lists selected radio stations (worldwide) that provide services to mariners. Included are stations transmitting radio navigation warnings, radio time signals, medical advice; chapters on distress, emergency and safety traffic; AMVER, and miscellaneous navigational instructions and procedures. Also included are descriptions of long range aids to navigation such as Loran and Omega. Discussions and instructions for use of radio navigational aids are also provided.

Sailing Directions and Radio Navigational Aids can be purchased from Defense Mapping Agency (DMA) Combat Support Center, Washington, DC 20315-0010, or authorized DMA Sales Agents.

NOTICES TO MARINERS

Broadcast Notices to Mariners are made by the Coast Guard through Coast Guard and Navy radio stations. These broadcast notices, which are broadcast on VHF-FM, NAVTEX, and other frequencies, are navigational warnings containing information of importance to the safety of navigation. Included are reports of deficiencies and changes to aids to navigation, the positions of ice and derelicts, and other important hydrographic information.

Radio stations broadcasting Notices to Mariners are listed in the National Ocean Service Coast Pilots and in the Defense Mapping Agency publication Radio Navigational Aids (RAPUB 117).

Local Notices to Mariners (U.S. regional coverage) are another means by which the Coast Guard disseminates navigation information for the United States, its territories, and possessions. A Local Notice to Mariners is issued by each Coast Guard district. It reports changes to, and deficiencies in, aids to navigation maintained by and under the authority of the Coast Guard. It contains other marine information such as channel depths, naval operations, regattas, etc., which may affect vessels and waterways within the jurisdiction of each Coast Guard district. Reports of channel conditions, obstructions, menaces to navigation, danger areas, new chart editions, etc., are also included in the Local Notice to Mariners.

These notices are essential to all navigators for the purposes of keeping their charts, Lights Lists, Coast Pilots and other nautical publications up-to-date. These notices are published as often

as required, but usually weekly. They may be obtained, free of charge, by making application to the appropriate Coast Guard district commander (see pg. iii). Vessels operating in ports and waterways in several districts will have to obtain the Local Notice to Mariners from each district in order to be fully informed.

Weekly Notices to Mariners (worldwide coverage) are prepared jointly by the Defense Mapping Agency Hydrographic/Topographic Center, the U.S. Coast Guard, and the National Ocean Service, and are published weekly by Defense Mapping Hydrographic/Topographic Center. The Weekly Notice to Mariners advises mariners of important matters affecting navigational safety including new hydrographic discoveries, changes in channels and aids to navigation. Also included are corrections to Light Lists, Coast Pilots, and Sailing Directions. Foreign marine information is also included. This notice is intended for mariners and others who have a need for information related to ocean-going operations. Because it is intended for use by ocean-going vessels, many corrections that affect small craft navigation and waters are not included. Information concerning small craft is contained in the Coast Guard Local Notices to Mariners only. The Weekly Notice to Mariners may be obtained, free of charge, upon request to: Director, Defense Mapping Agency, Combat Support Center, Code PMSA, Washington, DC 20315-0010.

Change of Address. Persons receiving the Local Notice to Mariners or the Weekly Notice to Mariners are requested to notify the appropriate agency of a change of address, or when the Notice to Mariners is no longer needed. Both the old and new address should be given in the case of an address change.

Notices to Mariners may be consulted at Coast Guard District Offices, National Ocean Service Field Offices, Defense Mapping Agency Hydrographic/Topographic Center offices and depots, local marine facilities, and chart sales agents.

REPORTING DEFECTS IN AIDS TO NAVIGATION

Mariners should realize the Coast Guard cannot keep the thousands of aids to navigation comprising the U.S. Aids to Navigation System under simultaneous and continuous observation and that it is impossible to maintain every aid to navigation operating properly and on its assigned position at all times. Therefore, for the safety of all mariners, any person who discovers an aid to navigation that is either off station or exhibiting characteristics other than those listed in the Light Lists should promptly notify the nearest Coast Guard unit. Radio messages should be prefixed "COAST GUARD" and transmitted directly to one of the U.S. Government radio stations listed in Chapter 4, Section 400B, Radio Navigational Aids (RAPUB 117).

Recommendations and requests pertaining to aids to navigation and to report aids to navigation that are no longer needed should be mailed to the Coast Guard district concerned (see pg. lii).

U.S. AIDS TO NAVIGATION SYSTEM

The waters of the United States and its territories are marked to assist navigation by the U.S. Aids to Navigation System. This system encompasses buoys and beacons, conforming to the

International Association of Lighthouse Authorities (IALA) buoyage guidelines, and other short range aids to navigation.

The U.S. Aids to Navigation System is intended for use with nautical charts. The exact meaning of a particular aid to navigation may not be clear to the mariner unless the appropriate nautical chart is consulted. Additional, important information supplementing that shown on charts is contained in the Light List, Coast Pilots, and Sailing Directions.

TYPES OF MARKS

Lateral marks are buoys or beacons that indicate the port and starboard sides of a route to be followed, and are used in conjunction with a "conventional direction of buoyage".

Generally, lateral aids to navigation indicate on which side of the aid to navigation a vessel should pass, when navigable channels are entered from seaward and a vessel proceeds in the conventional direction of buoyage. Since all channels do not lead from seaward, certain assumptions must be made so the system can be consistently applied. In the absence of a route leading from seaward, the conventional direction of buoyage generally follows a clockwise direction around land masses.

Virtually all U.S. lateral marks are located in IALA Region B and follow the traditional 3R rule of "red, right, returning". In U.S. waters, returning from seaward and proceeding toward the head of navigation is generally considered as moving southerly along the Atlantic coast, westerly along the Gulf coast and northerly along the Pacific coast. In the Great Lakes, the conventional direction of buoyage is generally considered westerly and northerly, except on Lake Michigan, where southerly movement is considered as returning from sea.

A summary of the port and starboard hand lateral mark characteristics is contained in the following table.

Characteristic	Port Hand Marks	Starboard Hand Marks
Color	Green	Red
Shape (buoys)	Cylindrical (can) or pillar	Conical (nun) or pillar
Dayboard or Topmark (when fitted)	Green square or cylinder	Red triangle or cone, point upward
Light Color (when fitted)	Green	Red
Reflector Color	Green	Red
Numbers	Odd	Even

Preferred channel marks are aids to navigation which mark channel junctions or bifurcations and often mark wrecks or obstructions. Preferred channel marks may normally be passed on either side by a vessel, but indicate to the mariner the preferred channel. Preferred channel marks are colored with red and green bands.

At a point where a channel divides, when proceeding in the

"conventional direction of buoyage", a preferred channel in IALA Region B may be indicated by a modified port or starboard lateral mark as follows:

Characteristic	Preferred channel to starboard	Preferred channel to port
Color	Green with one broad red band	Red with one broad green band
Shape (buoys)	Cylindrical (can) or pillar	Conical (nun) or pillar
Dayboard	Green square, lower half red	Red triangle, lower half green
Topmark (when fitted)	Green square or cylinder	Red triangular cone, point upward
Light (when fitted)		
Color	Green	Red
Rhythm	Composite group flashing (2+1)	Composite group flashing (2+1)
Reflector color	Green	Red

NOTE: U.S. lateral aids to navigation at certain Pacific islands are located within Region A and thus exhibit opposite color significance. Port hand marks are red with square or cylindrical shapes while starboard hand marks are green with triangular or conical shapes.

CAUTION: It may not always be possible to pass on either side of preferred channel aids to navigation. The appropriate nautical chart should always be consulted.

Non-lateral marks have no lateral significance but may be used to supplement the lateral aids to navigation specified above. Occasionally, daybeacons or minor lights outside of the normal channel will not have lateral significance since they do not define limits to navigable waters. These aids to navigation will utilize diamond-shaped dayboards and are divided into four diamond-shaped sectors. The side sectors of these dayboards are colored white, and the top and bottom sectors are colored black, red, or green as the situation dictates.

Safe water marks are used to mark fairways, mid-channels, and offshore approach points, and have unobstructed water on all sides. They can also be used by the mariner transiting offshore waters to identify the proximity of intended landfall. Safe water marks are red and white striped and have a red spherical topmark to further aid in identification. If lighted, they display a white light with the characteristic Morse code "A".

Isolated danger marks are erected on, or moored above or near, an isolated danger, which has navigable water all around it. These marks should not be approached closely without special caution. These marks were introduced in 1991.

Isolated danger marks are colored with black and red bands, and if lighted, display a group flashing (2) white light. A topmark consisting of two black spheres, one above the other, is fitted for both lighted and unlighted marks.

Special marks are not intended to assist in navigation, but rather to alert the mariner to a special feature or area. The feature should be described in a nautical document such as a chart, Light List, Coast Pilot or Notice to Mariner. Some areas which may be marked by these aids to navigation are spoil areas, pipelines, traffic separation schemes, jetties, or military exercise areas. Special marks are yellow in color and, if lighted, display a yellow light.

Information and regulatory marks are used to alert the mariner to various warnings or regulatory matters. These marks have orange geometric shapes against a white background. The meanings associated with the orange shapes are as follows:

- 1) An open-faced diamond signifies danger.
- 2) A diamond shape having a cross centered within indicates that vessels are excluded from the marked area.
- 3) A circular shape indicates that certain operating restrictions are in effect within the marked area.
- 4) A square or rectangular shape will contain directions or instructions lettered within the shape.

BUOYS AND BEACONS

The IALA maritime buoyage guidelines apply to buoys and beacons that indicate the lateral limits of navigable channels, obstructions and other dangers such as wrecks, and other areas or features of importance to the mariner. This system provides five types of marks: lateral marks, safe water marks, special marks, isolated danger marks and cardinal marks. (Cardinal marks are not presently used in the United States.) Each type of mark is differentiated from other types by distinctive colors, shapes and light rhythms. Examples are provided on the enclosed color illustrations.

Buoys are floating aids to navigation used extensively throughout U.S. waters. They are moored to the seabed by concrete sinkers with chain or synthetic rope moorings of various lengths connected to the buoy body.

Buoy positions represented on nautical charts are approximate positions only, due to the practical limitations of positioning and maintaining buoys and their sinkers in precise geographical locations. Buoy positions are normally verified during periodic maintenance visits. Between visits, atmospheric and sea conditions, seabed slope and composition, and collisions or other accidents may cause buoys to shift from their charted locations, or cause buoys to be sunk or capsized.

Buoy moorings vary in length. The mooring lengths define a "watch circle", and buoys can be expected to move within this circle. Actual watch circles do not coincide with the symbols representing them on charts.

CAUTION: Mariners attempting to pass a buoy close aboard risk

collision with a yawing buoy or with the obstruction which the buoy marks. Mariners must not rely on buoys alone for determining their positions due to factors limiting buoy reliability. Prudent mariners will use bearings or angles from fixed aids to navigation and shore objects, soundings and various methods of electronic navigation to positively fix their position.

Beacons are aids to navigation which are permanently fixed to the earth's surface. These structures range from lighthouses to small unlighted daybeacons, and exhibit a daymark to make these aids to navigation readily visible and easily identifiable against background conditions. The daymark conveys to the mariner, during daylight hours, the same significance as does the aid to navigation's light at night.

CAUTION: Vessels should not pass fixed aids to navigation close aboard due to the danger of collision with rip-rap or structure foundations, or with the obstruction or danger being marked.

LIGHTED AIDS TO NAVIGATION

Most lighted aids to navigation are equipped with controls which automatically cause the light to operate during darkness and to be extinguished during daylight. These devices are not of equal sensitivity, therefore all lights do not come on or go off at the same time. (Mariners should ensure correct identification of aids to navigation during twilight periods when some lighted aids to navigation are lit while others are not.)

The lighting apparatus is serviced at periodic intervals to assure reliable operation, but there is always the possibility of a light being extinguished or operating improperly.

The condition of the atmosphere has a considerable effect upon the distance at which lights can be seen. Sometimes lights are obscured by fog, haze, dust, smoke, or precipitation which may be present at the light, or between the light and the observer, and which is possibly unknown by the observer. Atmospheric refraction may cause a light to be seen farther than under ordinary circumstances. A light of low intensity will be easily obscured by unfavorable conditions of the atmosphere and little dependence can be placed on it being seen. For this reason, the intensity of a light should always be considered when expecting to sight it in thick weather. Haze and distance may reduce the apparent duration of the flash of a light. In some conditions of the atmosphere, white lights may have a reddish hue.

Lights placed at high elevations are more frequently obscured by clouds, mist, and fog than those lights located at or near sea level.

In regions where ice conditions prevail in the winter, the lantern panes of unattended lights may become covered with ice or snow, which will greatly reduce the visibility of the lights and may also cause colored lights to appear white.

The increasing use of brilliant shore lights for advertising,

illuminating bridges, and other purposes, may cause marine navigational lights, particularly those in densely inhabited areas, to be outshone and difficult to distinguish from the background lighting. Mariners are requested to report such cases in order that steps may be taken to improve the conditions.

The "loom" (glow) of a powerful light is often seen beyond the limit of visibility of the actual rays of the light. The loom may sometimes appear sufficiently sharp enough to obtain a bearing.

At short distances, some flashing lights may show a faint continuous light between flashes.

The distance of an observer from a light cannot be estimated by its apparent intensity. Always check the characteristics of lights so powerful lights, visible in the distance, are not mistaken for nearby lights (such as those on lighted buoys) showing similar characteristics of low intensity.

If lights are not sighted within a reasonable time after prediction, a dangerous situation may exist requiring prompt resolution or action in order to ensure the safety of the vessel.

The apparent characteristic of a complex light may change with the distance of the observer. For example, a light which actually displays a characteristic of fixed white varied by flashes of alternating white and red (the rhythms having a decreasing range of visibility in the order: flashing white, flashing red, fixed white) may, when first sighted in clear weather, show as a simple flashing white light. As the vessel draws nearer, the red flash will become visible and the characteristics will apparently be alternating flashing white and red. Later, the fixed white light will be seen between the flashes and the true characteristic of the light will finally be recognized - fixed white, alternating flashing white and red (F W A I W R).

If a vessel has considerable vertical motion due to pitching in heavy seas, a light sighted on the horizon may alternately appear and disappear. This may lead the unwary to assign a false characteristic and hence, to err in its identification. The true characteristic will be evident after the distance has been sufficiently decreased or by increasing the height of eye of the observer.

Similarly, the effects of wave motion on lighted buoys may produce the appearance of incorrect light phase characteristics when certain flashes occur, but are not viewed by the mariner. In addition, buoy motion can reduce the distance at which buoy lights are detected.

Sectors of colored glass are placed in the lanterns of some lights in order to produce a system of light sectors of different colors. In general, red sectors are used to mark shoals or to warn the mariner of other obstructions to navigation or of nearby land. Such lights provide approximate bearing information since observers may note the change of color as they cross the boundary between sectors. These boundaries are indicated in the Light List (Col. 8) and by dotted lines on charts. These bearings, as all bearings referring to lights, are given in true

degrees from 000° to 359°, as observed from a vessel toward the light. Altering course on the changing sectors of a light or using the boundaries between light sectors to determine the bearing for any purpose is not recommended. Be guided instead by the correct compass bearing to the light and do not rely on being able to accurately observe the point at which the color changes. This is difficult to determine because the edges of a colored sector cannot be cut off sharply. On either side of the line of demarcation between white, red, or green sectors, there is always a small arc of uncertain color. Moreover, when haze or smoke are present in the intervening atmosphere, a white sector might have a reddish hue.

The area in which a light can be observed is normally an arc with the light as the center and the range of visibility as the radius. However, on some bearings the range may be reduced by obstructions. In such cases, the obstructed arc might differ with height of eye and distance. When a light is cut off by adjoining land and the arc of visibility is given, the bearing on which the light disappears may vary with the distance of the vessel from which observed and with the height of eye. When the light is cut off by a sloping hill or point of land, the light may be seen over a wider arc by a vessel farther away than by one closer to the light.

The arc drawn on charts around a light is not intended to give information as to the distance at which it can be seen, but solely to indicate, in the case of lights which do not show equally in all directions, the bearings between which the variation of visibility or obstruction of the light occurs.

OIL WELL STRUCTURES

Oil well structures in navigable waters are not listed in the Light List. The structures are shown on the appropriate nautical charts. Information concerning the location and characteristics of those structures which display lights and sound signals not located in obstruction areas are published in Local and/or Weekly Notices to Mariners.

In general, during the nighttime, a series of white lights are displayed extending from the platform to the top of the derrick when drilling operations are in progress. At other times, structures are usually marked with one or more fixed or quick flashing white or red lights, visible for at least one nautical mile during clear weather. Obstructions which are a part of the appurtenances to the main structure, such as mooring piles, anchor and mooring buoys, etc., normally are not lighted. In addition, some of the structures are equipped with sound signals (bell, siren, whistle, or horn). When operating, bells sound one stroke every 15 seconds, while sirens, whistles, or horns sound a single two-second blast every 20 seconds.

CHARACTERISTICS OF AIDS TO NAVIGATION

LIGHT COLORS

Only aids to navigation with green or red lights have lateral

significance. When proceeding in the conventional direction of buoyage, the mariner in Region B, may see the following lighted aids to navigation:

Green lights on aids to navigation mark port sides of channels and locations of wrecks or obstructions which must be passed by keeping these lighted aids to navigation on the port hand of a vessel. Green lights are also used on preferred channel marks where the preferred channel is to starboard (i.e., aid to navigation left to port when proceeding in the conventional direction of buoyage).

Red lights on aids to navigation mark starboard sides of channels and locations of wrecks or obstructions which must be passed by keeping these lighted aids to navigation on the starboard hand of a vessel. Red lights are also used on preferred channel marks where the preferred channel is to port (i.e., aid to navigation left to starboard when proceeding in the conventional direction of buoyage).

White and yellow lights have no lateral significance. The purpose of aids to navigation exhibiting white or yellow lights may be determined by the shapes, colors, letters, and light rhythms.

Most aids to navigation are fitted with retroreflective material to increase their visibility in darkness. Red or green retroreflective material is used on lateral aids to navigation which, if lighted, will display lights of the same color.

LIGHT RHYTHMS

Light rhythms have no lateral significance. Aids to navigation with lateral significance exhibit flashing, quick, occulting or isophase light rhythms. Ordinarily, flashing lights (frequency not exceeding 30 flashes per minute) will be used.

Preferred channel marks exhibit a composite group-flashing light rhythm of two flashes followed by a single flash. Through 1989, some preferred channel marks may display the former interrupted quick flashing rhythm.

Safe water marks show a white Morse code "A" rhythm (a short flash followed by a long flash).

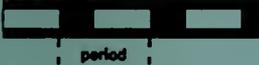
Isolated danger marks show a white flashing (2) rhythm (two flashes repeated regularly).

Special marks show yellow lights and exhibit a flashing or fixed rhythm; however, a flashing rhythm is preferred.

Information and regulatory marks, when lighted, display a white light with any light rhythm except quick flashing, flashing (2) and Morse code "A".

For situations where lights require a distinct cautionary significance, as at sharp turns, sudden channel constrictions, wrecks or obstructions, a quick flashing light rhythm will be used.

CHARACTERISTICS OF LIGHTS

Illustration	Type Description	Abbreviation
	<p>1. FIXED. A light showing continuously and steadily.</p>	F
	<p>2. OCCULTING. A light in which the total duration of light in a period is longer than the total duration of darkness and the intervals of darkness (eclipses) are usually of equal duration.</p>	
	<p>2.1 Single-occulting. An occulting light in which an eclipse is regularly repeated.</p>	Oc
	<p>2.2 Group-occulting. An occulting light in which a group of eclipses, specified in numbers, is regularly repeated.</p>	Oc(2)
	<p>2.3 Composite group-occulting. A light, similar to a group-occulting light, except that successive groups in a period have different numbers of eclipses.</p>	Oc(2+1)
	<p>3. ISOPHASE. A light in which all durations of light and darkness are equal.</p>	Iso
	<p>4. FLASHING. A light in which the total duration of light in a period is shorter than the total duration of darkness and the appearances of light (flashes) are usually of equal duration.</p>	
	<p>4.1 Single-flashing. A flashing light in which a flash is regularly repeated (frequency not exceeding 30 flashes per minute).</p>	Fl

CHARACTERISTICS OF LIGHTS (cont.)

Illustration	Type Description	Abbreviation
	4.2 Group-flashing. A flashing light in which a group of flashes, specified in number, is regularly repeated.	FI (2)
	4.3 Composite group-flashing. A light similar to a group flashing light except that successive groups in the period have different numbers of flashes.	FI (2+1)
	5. QUICK. A light in which flashes are produced at a rate of 60 flashes per minute.	
	5.1 Continuous quick. A quick light in which a flash is regularly repeated.	Q
	5.2 Interrupted quick. A quick light in which the sequence of flashes is interrupted by regularly repeated eclipses of constant and long duration.	IQ
	6. MORSE CODE. A light in which appearances of light of two clearly different durations (dots and dashes) are grouped to represent a character or characters in the Morse code.	Mo (A)
	7. FIXED AND FLASHING. A light in which a fixed light is combined with a flashing light of higher luminous intensity.	FFI
	8. ALTERNATING. A light showing different colors alternately.	AI RW

SHAPES

In order to provide easy identification, certain unlighted buoys and dayboards on beacons are differentiated by shape. These shapes are laterally significant only when associated with laterally significant colors.

Cylindrical buoys (referred to as "can buoys") and square dayboards mark the left side of a channel when proceeding from seaward. These aids to navigation are associated with solid green or green and red banded marks where the topmost band is green.

Conical buoys (referred to as "nun buoys") and triangular dayboards mark the right side of the channel when proceeding from seaward. These aids to navigation are associated with solid red or red and green banded marks where the topmost band is red.

Unless fitted with topmarks; lighted, sound, pillar, and spar buoys have no shape significance. Their meanings are conveyed by their numbers, colors, and light characteristics.

NUMBERS

All solid red and solid green aids to navigation are numbered, with red aids to navigation bearing even numbers and green aids to navigation bearing odd numbers. The numbers for each increase from seaward, proceeding in the conventional direction of buoyage. Numbers are kept in approximate sequence on both sides of the channel by omitting numbers where necessary.

Letters may be used to augment numbers when lateral aids to navigation are added to channels with previously completed numerical sequences. Letters will increase in alphabetical order from seaward, proceeding in the conventional direction of buoyage and are added to numbers as suffixes.

No other aids to navigation are numbered. Preferred channel, safe water, isolated danger, special marks, and information and regulatory aids to navigation may be lettered, but not numbered.

DAYBOARDS

In order to describe the appearance and purpose of each dayboard used in the U.S. System, standard designations have been formulated. A brief explanation of the designations and of the purpose of each type of dayboard in the system is given below, followed by a word description of the appearance of each dayboard type.

Designations:

1. First Letter – Shape or Purpose

- S Square used to mark the port (left) side of channels when proceeding from seaward.
- T Triangle used to mark the starboard (right) side of channels when proceeding from seaward.
- J Junction (square or triangle) used to mark (preferred channel) junctions or bifurcations in the channel, or wrecks or obstructions which may be passed on either side; color of top band has lateral significance for the preferred channel.
- M Safe water (octagonal) used to mark the fairway or

middle of the channel.

- C Crossing (western rivers only) diamond-shaped, used to indicate the points at which the channel crosses the river.
- K Range (rectangular) when both the front and rear range dayboards are aligned on the same bearing, the observer is on the azimuth of the range, usually used to mark the center of the channel.
- N No lateral significance (diamond or rectangular-shaped) used for special purpose, warning, distance, or location markers.

2. Second letter – Key color

G – Green R – Red

B – Black W – White

Y – Yellow

3. Third letter (color of center stripe; range dayboards only)

4. Additional information after a (-)

-I Intracoastal Waterway; a yellow reflective horizontal strip on a dayboard; indicates the aid to navigation marks the Intracoastal Waterway.

-SY Intracoastal Waterway; a yellow reflective square on a dayboard; indicates the aid to navigation is a port hand mark for vessels traversing the Intracoastal Waterway. May appear on a triangular daymark where the Intracoastal Waterway coincides with a waterway having opposite conventional direction of buoyage.

-TY Intracoastal Waterway; a yellow reflective triangle on a dayboard; indicates the aid to navigation is a starboard hand mark for vessels traversing the Intracoastal Waterway. May appear on a square daymark where the Intracoastal Waterway coincides with a waterway having opposite conventional direction of buoyage.

Example: The designation KRW-I indicates a range dayboard (K); key color red (R); with a white stripe (W); in the Intracoastal Waterway (-I).

Descriptions:

- SG Square green dayboard with a green reflective border.
- SG-I Square green dayboard with a green reflective border and a yellow reflective horizontal strip.
- SG-SY Square green dayboard with a green reflective border and a yellow reflective square.
- SG-TY Square green dayboard with a green reflective border and a yellow reflective triangle.
- SR Square red dayboard with a red reflective border. (IALA Region "A")
- TG Triangular green dayboard with a green reflective

	border. (IALA Region "A")	KBR-I	Rectangular black dayboard bearing a central red stripe and a yellow reflective horizontal strip.
TR	Triangular red dayboard with a red reflective border.	KBW	Rectangular black dayboard bearing a central white stripe.
TR-I	Triangular red dayboard with a red reflective border and a yellow reflective horizontal strip.	KBW-I	Rectangular black dayboard bearing a central white stripe and a yellow reflective horizontal strip.
TR-SY	Triangular red dayboard with a red reflective border and a yellow reflective square.	KGB	Rectangular green dayboard bearing a central black stripe.
TR-TY	Triangular red dayboard with a red reflective border and a yellow reflective triangle.	KGB-I	Rectangular green dayboard bearing a central black stripe and a yellow reflective horizontal strip.
JG	Dayboard bearing horizontal bands of green and red, green band topmost, with a green reflective border.	KGR	Rectangular green dayboard bearing a central red stripe.
JG-I	Square dayboard bearing horizontal bands of green and red, green band topmost, with a green reflective border and a yellow reflective horizontal strip.	KGR-I	Rectangular green dayboard bearing a central red stripe and a yellow reflective horizontal strip.
JG-SY	Square dayboard bearing horizontal bands of green and red, green band topmost, with a green reflective border and a yellow reflective square.	KGW	Rectangular green dayboard bearing a central white stripe.
JG-TY	Square dayboard bearing horizontal bands of green and red, green band topmost, with a green reflective border and a yellow reflective triangle.	KGW-I	Rectangular green dayboard bearing a central white stripe and a yellow reflective horizontal strip.
JR	Dayboard bearing horizontal bands of red and green, red band topmost, with a red reflective border.	KRB	Rectangular red dayboard bearing a central black stripe.
JR-I	Triangular dayboard bearing horizontal bands of red and green, red band topmost, with a red reflective border and a yellow horizontal strip.	KRB-I	Rectangular red dayboard bearing a central black stripe and a yellow reflective horizontal strip.
JR-SY	Triangular dayboard bearing horizontal bands of red and green, red band topmost, with a red reflective border and a yellow reflective square.	KRG	Rectangular red dayboard bearing a central green stripe.
JR-TY	Triangular dayboard bearing horizontal bands of red and green, red band topmost, with a red reflective border and a yellow reflective triangle.	KRG-I	Rectangular red dayboard bearing a central green stripe and a yellow reflective horizontal strip.
MR	Octagonal dayboard bearing stripes of white and red, with a white reflective border.	KRW	Rectangular red dayboard bearing a central white stripe.
MR-I	Octagonal dayboard bearing stripes of white and red, with a white reflective border and a yellow reflective horizontal strip.	KRW-I	Rectangular red dayboard bearing a central white stripe and a yellow reflective horizontal strip.
CG	Diamond-shaped green dayboard bearing small green diamond shaped reflectors at each corner.	KWB	Rectangular white dayboard bearing a central black stripe.
CR	Diamond-shaped red dayboard bearing small red diamond shaped reflectors at each corner.	KWB-I	Rectangular white dayboard bearing a central black stripe and a yellow reflective horizontal strip.
KBG	Rectangular black dayboard bearing a central green stripe.	KWG	Rectangular white dayboard bearing a central green stripe.
KBG-I	Rectangular black dayboard bearing a central green stripe and a yellow reflective horizontal strip.	KWG-I	Rectangular white dayboard bearing a central green stripe and a yellow reflective horizontal strip.
KBR	Rectangular black dayboard bearing a central red stripe.	KWR	Rectangular white dayboard bearing a central red stripe.
		KWR-I	Rectangular white dayboard bearing a central red stripe and a yellow reflective horizontal strip.
		NB	Diamond-shaped dayboard divided into four diamond-shaped colored sectors with the sectors at the side corners white and the sectors at the top and bottom corners black, with a white reflective border.

NG	Diamond-shaped dayboard divided into four diamond-shaped colored sectors with the sectors at the side corners white and the sectors at the top and bottom corners green, with a white reflective border.
NR	Diamond-shaped dayboard divided into four diamond-shaped colored sectors with the sectors at the side corners white and the sectors at the top and bottom corners red, with a white reflective border.
NW	Diamond-shaped white dayboard with an orange reflective border and black letters describing the information or regulatory nature of the mark.
ND	Rectangular white mileage marker with black numerals indicating the mile number (western rivers only).
NL	Rectangular white location marker with an orange reflective border and black letters indicating the location.
NY	Diamond-shaped yellow dayboard with a yellow reflective border.

These abbreviated descriptions are used in column (7) and may also be found on the illustration of U.S. Aids to Navigation System.

OTHER SHORT RANGE AIDS TO NAVIGATION

Lighthouses are placed on shore or on marine sites and most often do not show lateral markings. They assist the mariner in determining his position or safe course, or warn of obstructions or dangers to navigation. Lighthouses with no lateral significance usually exhibit a white light.

Occasionally, lighthouses use sectored lights to mark shoals or warn mariners of other dangers. Lights so equipped show one color from most directions and a different color or colors over definite arcs of the horizon as indicated on the appropriate nautical chart. These sectors provide approximate bearing information and the observer should note a change of color as the boundary between the sectors is crossed. Since sector bearings are not precise, they should be considered as a warning only, and used in conjunction with a nautical chart.

Large navigational buoys (LNBs) were developed to replace lightships and are placed at points where it is impractical to build lighthouses. The unmanned LNBs are 40 feet in diameter with light towers approximately 40 feet above the water. LNBs are equipped with lights, sound signals, radiobeacons, and racons. The traditional red color of LNBs has no lateral significance, but is intended to improve visibility.

Seasonal aids to navigation are placed into service or changed at specified times of the year. The dates shown in the Light List (Col. 8) are approximate and may vary due to adverse weather or other conditions.

Ranges are non-lateral aids to navigation systems employing dual beacons which when the structures appear to be in line, assist the mariner in maintaining a safe course. The appropriate nautical chart must be consulted when using ranges to determine whether the range marks the centerline of the navigable channel

and also what section of the range may be safely traversed. Ranges display rectangular dayboards of various colors and are generally, but not always lighted. When lighted, ranges may display lights of any color.

Sound signal is a generic term used to describe aids to navigation that produce an audible signal designed to assist the mariner in fog or other periods of reduced visibility. These aids to navigation can be activated by several means (i.e., manually, remotely, or fog detector). In cases where a fog detector is in use, there may be a delay in the automatic activation of the signal. Additionally, fog detectors may not be capable of detecting patchy fog conditions. Sound signals are distinguished by their tone and phase characteristics.

Tones are determined by the devices producing the sound, e.g., diaphones, diaphragm horns, sirens, whistles, bells, and gongs.

Phase characteristics are defined by the signal's sound pattern, i.e., the number of blasts and silent periods per minute and their durations. Sound signals sounded from fixed structures generally produce a specific number of blasts and silent periods each minute when operating. Buoy sound signals are generally activated by the motion of the sea and therefore do not emit a regular signal characteristic. It is common, in fact, for a buoy to produce no sound signal when seas are calm. Mariners are reminded that buoy positions are not always reliable.

The characteristic of a sound signal can be located in column (8) of the Light List. Unless it is specifically stated that a sound signal "Operates continuously", or the signal is a bell, gong, or whistle on a buoy, it can be assumed that the sound signal only operates during times of fog, reduced visibility, or adverse weather.

An emergency sound signal is sounded at some locations when the main and stand-by signals are inoperative. If the emergency signal is of a different type or characteristic than the main signal, its characteristic is listed in column (8) of this publication.

CAUTION: Mariners should not rely on sound signals to determine their position. Distance cannot be accurately determined by sound intensity. Occasionally, sound signals may not be heard in areas close to their location. Signals may not sound in cases where fog exists close to, but not at, the location of the sound signal.

VARIATIONS TO THE U.S. SYSTEM

Intracoastal Waterway aids to navigation: The Intracoastal Waterway runs parallel to the Atlantic and Gulf coasts from Manasquan Inlet, New Jersey to the Mexican border. Aids to navigation marking these waters have some portion of them marked with yellow. Otherwise, the coloring and numbering of the aids to navigation follow the same system as that in other U.S. waterways.

In order that vessels may readily follow the Intracoastal Waterway route, special markings are employed. These marks consist of a yellow square and yellow triangle and indicate which side the aid to navigation should be passed when following the conventional direction of buoyage. The yellow square indicates that the aid to navigation should be kept on the left side and the yellow triangle indicates that the aid to navigation should be kept on the right side.

NOTE: The conventional direction of buoyage in the Intracoastal Waterway is generally southerly along the Atlantic coast and generally westerly along the Gulf coast.

The **Western Rivers System**, a variation of the standard U.S. Aids to Navigation System described in the preceding sections, is employed on the Mississippi River and its tributaries above Baton Rouge, LA and on certain other rivers which flow toward the Gulf of Mexico.

The Western Rivers System varies from the standard U.S. system as follows:

- 1) Aids to navigation are not numbered.
- 2) Numbers on aids to navigation do not have lateral significance but, rather, indicate mileage from a fixed point (normally the river mouth).
- 3) Diamond shaped crossing dayboards, red or green as appropriate, are used to indicate where the river channel crosses from one bank to the other.
- 4) Lights on green aids to navigation show a single-flash characteristic which may be green or white.
- 5) Lights on red aids to navigation show a group-flash characteristic which may be red or white.
- 6) Isolated danger marks are not used.

Uniform State Waterway Marking System (USWMS): This system was developed in 1966 to provide an easily understood system for operators of small boats. While designed for use on lakes and other inland waterways that are not portrayed on nautical charts, the USWMS was authorized for use on other waters as well. It supplements the existing federal marking system and is generally compatible with it.

The conventional direction of buoyage is considered upstream or towards the head of navigation.

The USWMS varies from the standard U.S. system as follows:

- 1) The color black is used instead of green.
- 2) There are three aids to navigation which reflect cardinal significance:
 - a. A white buoy with red top represents an obstruction and the buoy should be passed to the south or west.
 - b. A white buoy with black top represents an obstruction and the buoy should be passed to the

north or east.

- c. A red and white vertically striped buoy indicates that an obstruction exists between that buoy and the nearest shore.

- 3) Mooring buoys are white buoys with a horizontal blue band midway between the waterline and the top of the buoy. This buoy may be lighted and will generally show a slow flashing white light.

BRIDGE MARKINGS

Bridges across navigable waters are generally marked with red, green and/or white lights for nighttime navigation. Red lights mark piers and other parts of the bridge. Red lights are also used on drawbridges to show when they are in the closed position.

Green lights are used on drawbridges to show when they are in the open position. The location of these lights will vary according to the bridge structure. Green lights are also used to mark the centerline of navigable channels through fixed bridges. If there are two or more channels through the bridge, the preferred channel is also marked by three white lights in a vertical line above the green light.

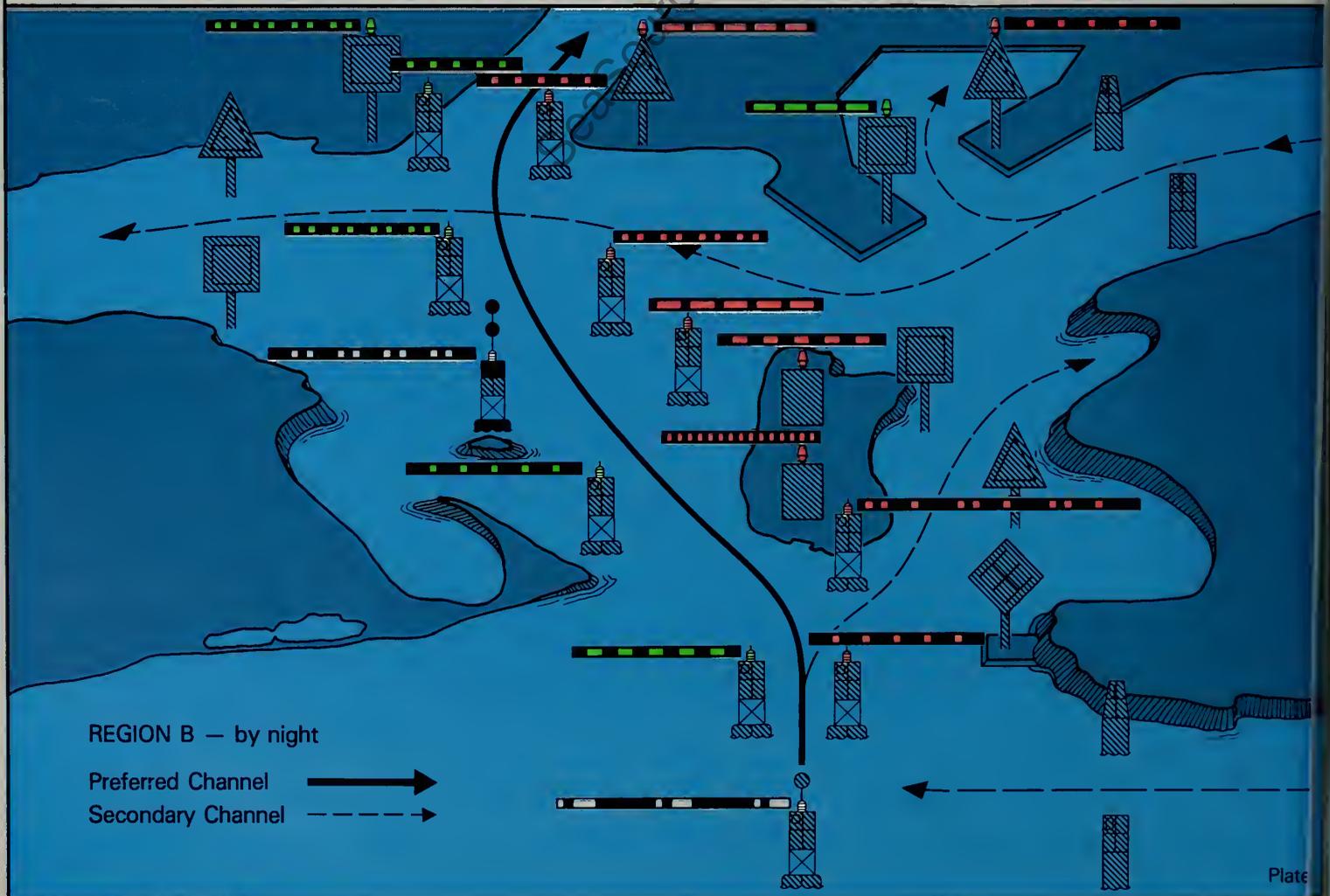
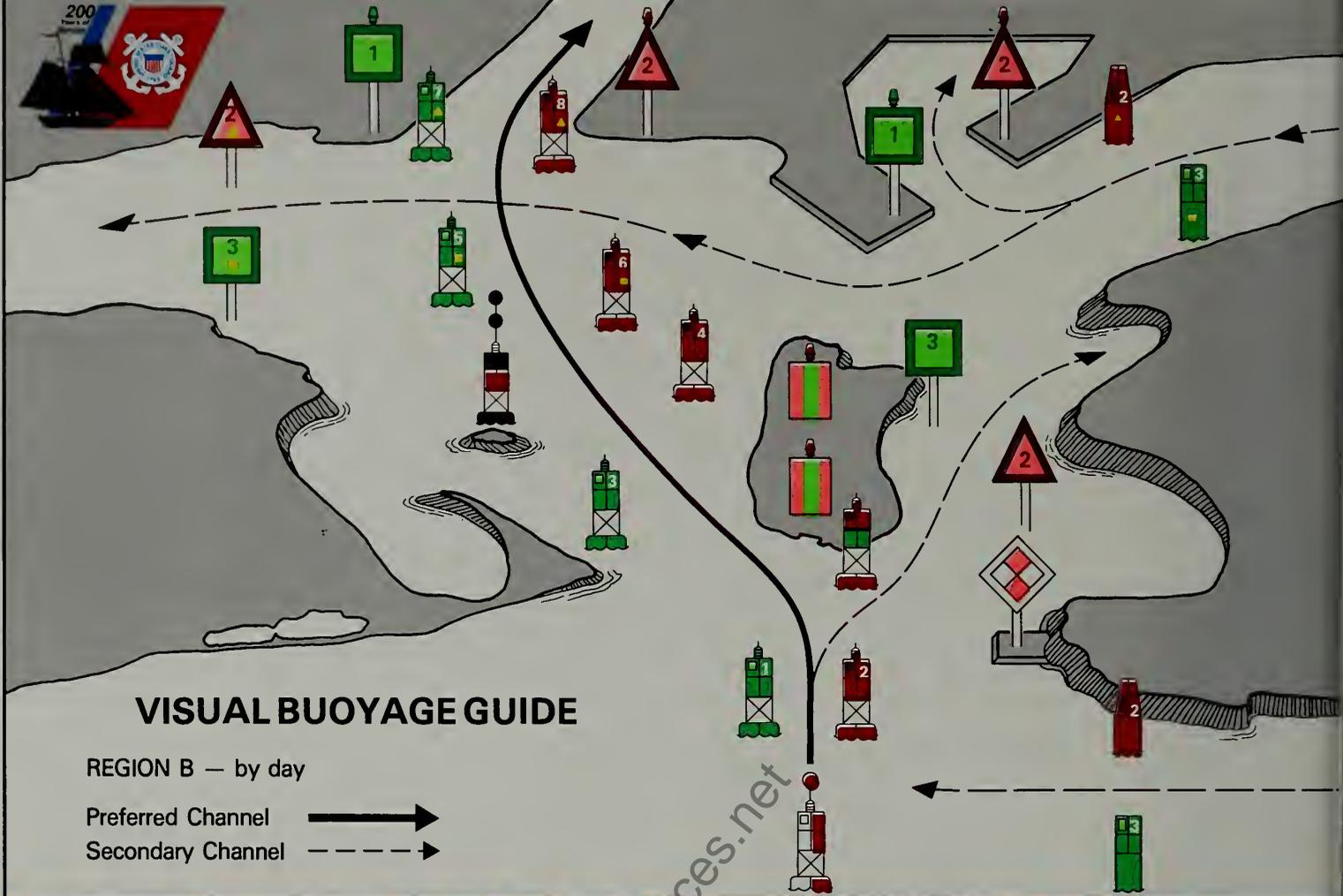
Red and green retro-reflective panels may be used to mark bridge piers and may also be used on bridges not required to display lights.

Main channels through bridges may be marked by lateral red and green lights and dayboards. Adjacent piers should be marked with fixed yellow lights when the main channel is marked with lateral aids to navigation.

Centerlines of channels through fixed bridges may be marked with a safe water mark and an occulting white light when lateral marks are used to mark main channels. The centerline of the navigable channel through the draw span of floating bridges may be marked with a special mark. The mark will be a yellow diamond with yellow retro-reflective panels and may exhibit a yellow light that displays a Morse code "B" (—...).

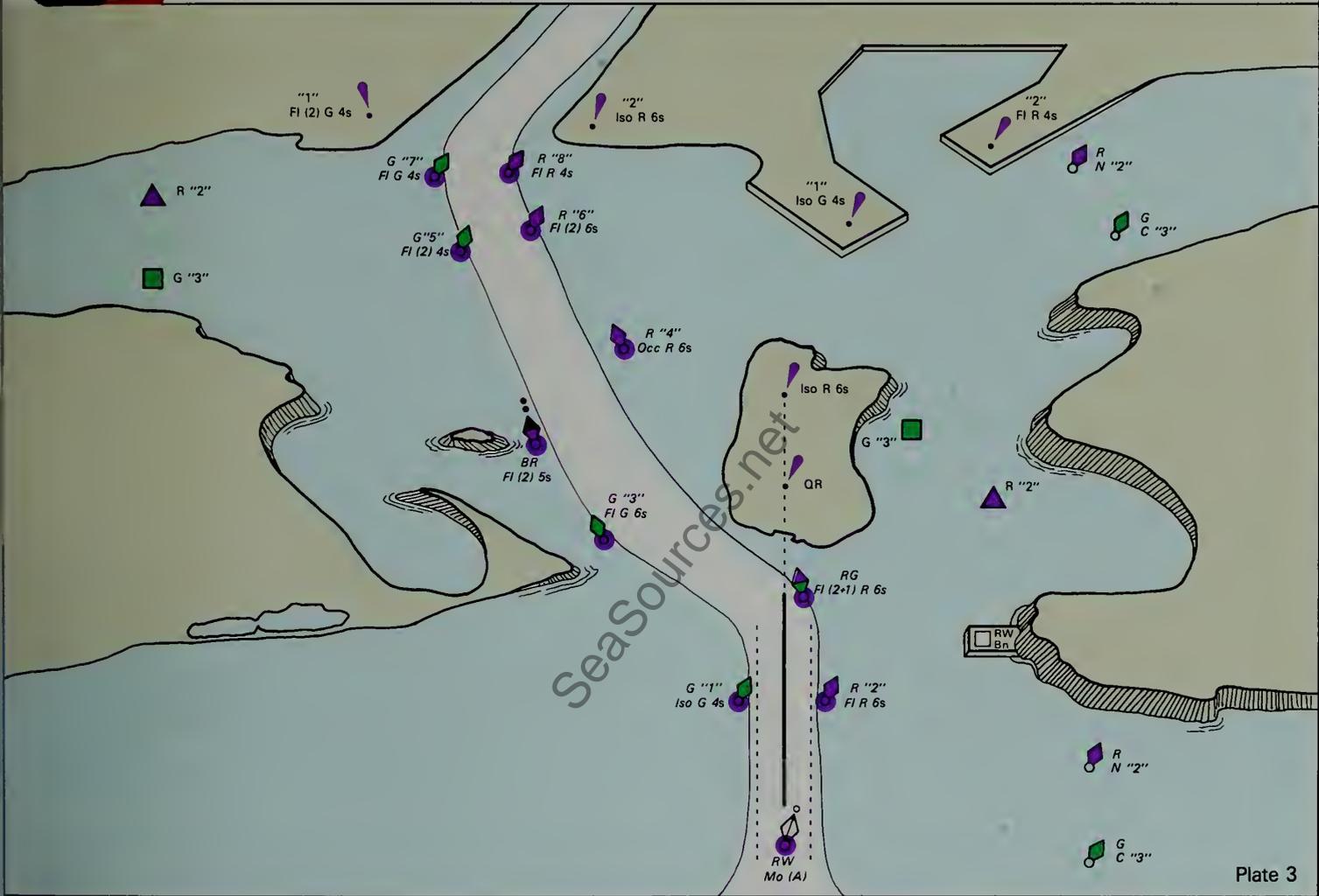
Clearance gauges may be installed to enhance navigation safety. The gauges are located on the right channel pier or pier protective structure facing approaching vessels. They indicate the vertical clearance available under the span.

Drawbridges equipped with radiotelephones display a blue and white sign which indicates what VHF radiotelephone channels should be used to request bridge openings.





FICTITIOUS NAUTICAL CHART



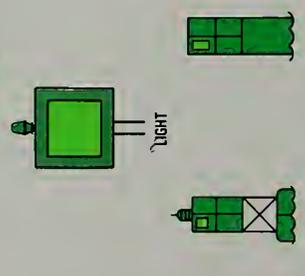


U.S. AIDS TO NAVIGATION SYSTEM

on the Western River System

AS SEEN ENTERING FROM SEAWARD

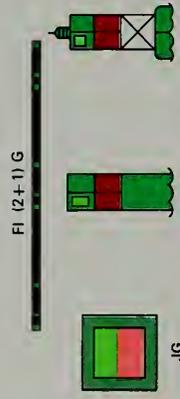
PORT SIDE
OR RIGHT DESCENDING BANK
OR GREEN OR WHITE LIGHTS (CROSSING)
FLASHING
150



LIGHTED BUOY
CAN
SG
PASSING DAYMARK
CROSSING DAYMARK

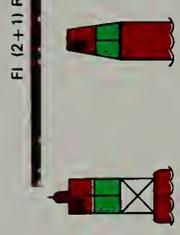
176.9
MILE BOARD

PREFERRED CHANNEL
TO STARBOARD
TOPMOST BAND GREEN



JG

MARK JUNCTIONS AND OBSTRUCTIONS
COMPOSITE GROUP FLASHING (2+1)

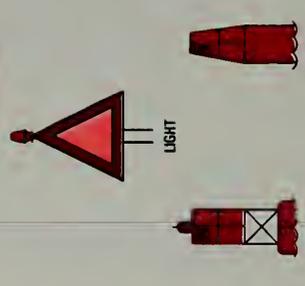


PREFERRED CHANNEL
TO PORT
TOPMOST BAND RED



JR

STARBOARD SIDE
OR LEFT DESCENDING BANK
OR RED OR WHITE LIGHTS (CROSSING)
FLASHING (2)
150



LIGHTED BUOY
NUN
CR
PASSING DAYMARK
CROSSING DAYMARK

123.5
MILE BOARD

RANGE DAYMARKS—MAY BE LETTERED

INFORMATION AND REGULATORY MARKERS
WHEN LIGHTED, INFORMATION AND REGULATORY MARKERS MAY DISPLAY ANY LIGHT RHYTHM EXCEPT QUICK FLASHING AND FLASHING (2).



NW WHITE LIGHT ONLY



DANGER

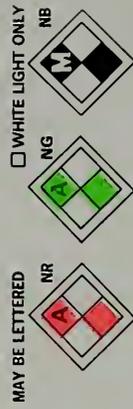


RESTRICTED



OPERATIONS

DAYMARKS HAVING NO LATERAL SIGNIFICANCE

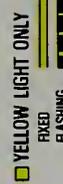


MAY BE LETTERED

NR

NG

NB



YELLOW LIGHT ONLY
FIXED FLASHING



NY

UNLIGHTED



LIGHTED



UNIFORM STATE WATERWAY MARKING SYSTEM

STATE WATERS AND DESIGNATED STATE WATERS FOR PRIVATE AIDS TO NAVIGATION

REGULATORY MARKERS



SWIM



ROCK



SLOW

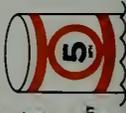
EXPLANATION MAY BE PLACED OUTSIDE THE CROSSED DIAMOND SHAPE, SUCH AS DAM, RAPIDS, SWIM AREA, ETC.



INFORMATION



DANGER



CONTROLLED AREA

MAY SHOW GREEN REFLECTOR OR LIGHT



3

MAY SHOW RED REFLECTOR OR LIGHT



4

MAY SHOW WHITE REFLECTOR OR LIGHT



7

FOR DISPLAYING INFORMATION SUCH AS DIRECTIONS, DISTANCES, LOCATIONS, ETC.

BUOY USED TO DISPLAY REGULATORY MARKERS
MAY SHOW WHITE LIGHT
MAY BE LETTERED

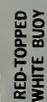


5

LATERAL SYSTEM



RED-STRIPED WHITE BUOY



RED-TOPPED WHITE BUOY



MOORING BUOY

DO NOT PASS BETWEEN BUOY AND NEAREST SHORE OR WEST OF BUOY

MAY BE NUMBERED

PASS TO NORTH OR WEST OF BUOY

WHITE WITH BLUE BAND
MAY SHOW WHITE REFLECTOR OR LIGHT

CARDINAL SYSTEM

ELECTRONIC AIDS TO NAVIGATION

Racones

Aids to navigation may be enhanced by the use of radar beacons (racons). Racons, when triggered by pulses from a vessel's radar, will transmit a coded reply to the vessel's radar. This reply serves to identify the racon station by exhibiting a series of dots and dashes which appear on the radar display emanating radially from the racon. This display will represent the approximate range and bearing to the racon. Although racons may be used on both laterally significant and non-laterally significant aids to navigation, the racon signal itself is for identification purposes only, and therefore carries no lateral significance. Racons are also used as bridge marks to mark the point of best passage.

All racons operate in the marine radar X-band from 9,300 to 9,500 MHz. Some frequency-agile racons also operate in the 2,900 to 3,000 MHz marine radar S-band.

Racones have a typical output of 100 to 300 milliwatts and are considered a short range aid to navigation. Reception varies from a nominal range of 6 to 8 nautical miles when mounted on a buoy to as much as 17 nautical miles for a racon with a directional antenna mounted at a height of 50 feet on a fixed structure. It must be understood that these are nominal ranges and are dependent upon many factors.

The beginning of the racon presentation occurs about 50 yards beyond the racon position and will persist for a number of revolutions of the radar antenna (depending on its rotation rate). Distance to the racon can be measured to the point at which the racon flash begins, but the figure obtained will be greater than the ship's distance from the racon. This is due to the slight response delay in the racon apparatus.

Radar operators may notice some broadening or spoking of the racon presentation when their vessel approaches closely to the source of the racon. This effect can be minimized by adjustment of the IF gain or sweep gain control of the radar. If desired, the racon presentation can be virtually eliminated by operation of the FTC (fast time constant) controls of the radar.

Radar Reflectors

Many aids to navigation incorporate special fixtures designed to enhance the reflection of radar energy. These fixtures, called radar reflectors, help radar equipped vessels to detect buoys and beacons which are so equipped. They do not however, positively identify a radar target as an aid to navigation.

Radiobeacons

As the first electronic system of navigation, radiobeacons provided offshore coverage and also became the first all-weather electronic aid to navigation. The Coast Guard operates about 200 radiobeacons located on the Atlantic, Gulf, and Pacific coasts, and on the Great Lakes. These radiobeacons are located at lighthouses, on large buoys and along the coasts. All positions are charted.

In order to use this system, the mariner needs a radio direction finder, which is a specifically designed radio receiver with a directional antenna. This antenna is used to determine the direction of the signal being emitted by the shore station, relative to the vessel.

The basic value of the radiobeacon system lies in its simplicity of operation and its relatively low user costs, even though the results obtained may be somewhat limited. The general problems and practices of navigation when using radiobeacons are very similar to those encountered when using visual bearings of lighthouses or other charted objects.

A radiobeacon is basically a short range navigational aid, with ranges from 10 to 175 nautical miles. Although bearings can be obtained at greater ranges, they will be of doubtful accuracy and should be used with caution. When the distance to a radiobeacon is greater than 50 miles, a correction is usually applied to the bearing before plotting on a Mercator chart. These corrections, as well as information on accuracy of bearings, plotting, and other matters are contained in the Defense Mapping Agency Hydrographic/Topographic Center publication, Radio Navigational Aids (RAPUB 117).

All radiobeacons operated and maintained by the U.S. Coast Guard are classified as either Sequenced or Continuous radiobeacons, and are usually organized into groups of six stations transmitting on a single frequency. Typically, one station in each group transmits for one minute out of six and is silent for the remaining five minutes. Continuous radiobeacons operate continuously through every minute of the hour. All Coast Guard-operated radiobeacons are assigned Morse code characteristics for ease in station identification.

The accuracy to be expected from radiobeacons depends to a large extent on the skill of the operator, the condition and type of equipment being used, the range from the stations, and the accuracy of the ship's calibration curve. The Coast Guard operates special calibration radiobeacons for use by the mariner. A comparison of visual bearings with radio bearings, will determine what, if any errors exist in the shipboard direction-finder installation. These calibration beacons transmit either continuously during scheduled hours or upon request.

The range at which a particular marine radiobeacon will be heard depends on atmospheric conditions and on the sensitivity of the receiver being used. The advertised service range of marine radiobeacons is expressed in miles: nautical miles for the Atlantic, Gulf, and Pacific coasts and statute miles for the Great Lakes.

In general, the better the sensitivity of a receiver (i.e., the lower the signal strength required to obtain satisfactory bearings) the better the receiver is for direction-finding purposes. Unless the receiver and antenna combination being used by the mariner is capable of obtaining a radio bearing on a signal as low as 50 microvolts per meter, full benefit will not be obtained from the system.

For example, a mariner using a direction-finder with a sensitivity of 50 microvolts per meter could obtain a bearing on a 50-mile radiobeacon located near New York at the advertised service range of 50 miles. However, using a direction-finder with a sensitivity of only 100 microvolts per meter, the mariner would not be able to obtain a bearing on the same 50-mile New York radiobeacon until approached to within approximately 25 miles of the radiobeacon station.

The selectivity of a receiver is important because it allows the direction finder to receive a desired signal on a particular frequency, while rejecting any undesired signals which may be present on adjacent frequencies.

Since the bandwidth of the transmitted radiobeacon signal is relatively narrow, being only 2.1 kilohertz, a narrow-band receiver, having good selectivity is well suited for direction-finding purposes. The narrow-band receiver should extract all of the useful information from the transmitted marine radiobeacon signal.

Although a wider-band receiver may also extract all of the useful information from the transmitted signal, it will also admit more noise and more undesired signals, if these signals are present on adjacent frequencies. The additional noise and undesired signal interference may reduce the usefulness of the desired signal and effectively reduce the service range of the radiobeacon below its advertised value. This is a receiver defect, not a system error.

Information regarding the location, and operation of marine radiobeacons is given on pages xxx – xxxii. Radiobeacons are individually listed in the Light List.

LORAN-C

LORAN, an acronym for LOng RANGE Navigation, is an electronic aid to navigation consisting of shore-based radio transmitters. The LORAN system enables users equipped with a LORAN receiver to determine their position quickly and accurately, day or night, in practically any weather.

A LORAN-C chain consists of three to five transmitting stations separated by several hundred miles. Within a chain, one station is designated as master while the other stations are designated as secondaries. Each secondary station is identified as either whiskey (W), x-ray (X), yankee (Y), or zulu (Z).

The master station is always the first station to transmit. It transmits a series of nine pulses. The secondary stations then follow in turn, transmitting eight pulses each, at precisely timed intervals. This cycle repeats itself endlessly. The length of the cycle is measured in microseconds and is called a Group Repetition Interval (GRI).

LORAN-C chains are designated by the four most significant digits of their GRI. For example, a chain with a GRI of 89.700 microseconds is referred to as 8970. A different GRI is used for each chain because all LORAN-C stations broadcast in the same 90 to 110 kilohertz frequency band and would otherwise interfere with one another.

The LORAN-C system can be used in either a hyperbolic or range mode. In the widely used hyperbolic mode, a LORAN-C line of position is determined by measuring the time difference between synchronized pulses received from two separate transmitting stations. In the range mode, a line of position is determined by measuring the time required for LORAN-C pulses to travel from a transmitting station to the user's receiver.

A user's position is determined by locating the crossing point of two lines of position on a LORAN-C chart. Many receivers have built-in coordinate converters which will automatically display the receiver's latitude and longitude. With a coordinate converter, a position can be determined using a chart that is not overprinted with LORAN-C lines of position.

CAUTION: The latitude/longitude computation on some models is based upon an all seawater propagation path. This may lead to error if the LORAN-C signals from the various stations involve appreciable overland propagation paths. These errors may put the mariner at risk in areas requiring precise positioning if the

proper correctors (ASF) are not applied. *Therefore, it is recommended that mariners using Coordinate Converters check the manufacturer's operating manual to determine if and how corrections are to be applied to compensate for the discontinuity caused by the overland paths.*

There are two types of LORAN-C accuracy: absolute and repeatable. Absolute accuracy is a measure of the navigator's ability to determine latitude and longitude position from the LORAN-C time differences measured. Repeatable accuracy is a measure of the LORAN-C navigator's ability to return to a position where readings have been taken before.

The absolute accuracy of LORAN-C is 0.25 nautical miles, 95% confidence within the published coverage area using standard LORAN-C charts and tables. Repeatable accuracy depends on many factors, so measurements must be taken to determine the repeatable accuracy in any given area. Coast Guard surveys have found repeatable accuracies between 30 and 170 meters in most ground wave coverage areas. LORAN-C position determination on or near the baseline extensions are subject to significant errors and, therefore, should be avoided whenever possible. The use of skywaves is not recommended within 250 miles of a station being used, and corrections for these areas are not usually tabulated.

If the timing or pulse shape of a master-secondary pair deviates from specified tolerances, the first two pulses of the secondary station's pulse train will blink on and off. The LORAN-C receiver sees this blinking signal and indicates a warning to the user. This warning will continue until the signals are once again in tolerance. A blinking signal is not exhibited during off-air periods, so a separate receiver alarm indicates any loss of signal. Never use a blinking secondary signal for navigation.

In coastal waters, LORAN-C should not be relied upon as the only aid to navigation. A prudent navigator will use radar, radio direction finder, fathometer and any other aid to navigation, in addition to the LORAN-C receiver.

LORAN-C Interference

Interference to LORAN-C may result from radio transmissions by public or private sources operating near the LORAN-C band of 90-110 kHz. Anyone using the LORAN-C system, who observes interference to LORAN-C, should promptly report it to one of the Coast Guard commands listed below. Include in such reports information regarding the date, time, identifying characteristics, strength of the interfering signals and your own vessel's position. These interference reports are very important and cooperation from users of LORAN-C will assist the Coast Guard in improving LORAN-C service.

Atlantic Ocean and Gulf of Mexico

Commander (Atl)
Atlantic Area, U.S. Coast Guard
Governors Island
New York, NY 10004-5000

Pacific Ocean

Commander (Ptl)
Pacific Area, U.S. Coast Guard
Coast Guard Island
Alameda, CA 94501-5100

All areas

Commandant (G-NRN)
U.S. Coast Guard
Washington, DC 20593-0001

LORAN-C Charts and Publications

Navigational charts overprinted with LORAN-C lines of position are published by the National Ocean Service (NOS), Distribution Branch (N/CG33), 6501 Lafayette Avenue, Riverdale, MD 207371199 and the Defense Mapping Agency (DMA), Combat Support Center, Code: PMSR, Washington, DC 20315-0010, and may be purchased directly from NOS or DMA, or through local chart sales agents.

A general source of LORAN-C information is the LORAN-C User Handbook written by the U.S. Coast Guard. This publication can be purchased from the Superintendent of Documents, Order Section, U.S. Government Printing Office, Washington, DC 20402.

GLOBAL POSITIONING SYSTEM (GPS)

The Global Positioning System (GPS) is a satellite-based Radionavigation System providing continuous worldwide coverage. It provides navigation, position, and timing information to air, marine, and land users. Current plans call for GPS to be fully operational in late 1993. The GPS is being developed and will be operated and controlled by the Department of Defense (DOD) under U.S. Air Force management. Although originally intended for military use only, federal radionavigation policy has established that GPS will be available for civil use. Due to the orbiting nature of the incomplete satellite constellation, GPS coverage currently varies in quality throughout the day from place to place. Computer programs are available from commercial sources so that interested users can determine the quantity and quality of GPS coverage at their particular location.

The USCG is the government interface for civil users of GPS and has established a GPS Information Center (GPSIC) to meet the needs of the civil user. The GPSIC is a Coast Guard facility located in Alexandria, Virginia. It provides voice broadcasts, data broadcasts, and on-line computer-based information services, which are all available 24 hours a day. Personal telephone service is currently available Monday-Friday from 08:00 AM to 4:00 PM, excluding holidays. The information provided includes present or future satellite outages and constellation changes, user instructions and tutorials, lists of service and receiver provider/users, and other GPS-related information.

Users are cautioned that, per DOD policy:

The GPS system is not yet fully operational. Signal availability and accuracy are subject to change due to an incomplete satellite constellation and operational test activities.

However, whenever possible, advance notice of when the GPS satellites should not be used will be provided by the DOD and made available by the U.S Coast Guard.

Information concerning the GPS constellation is provided on a "test and evaluation" basis only. GPS advisory services are updated only during the time 8:00 AM and 4:00 PM, Monday through Friday (except Federal holidays). GPSIC services are described below.

The GPSIC 24 hour voice recording is a 3-line telephone answering machine. Up to 3 callers can listen to the 90 second recording at the same time.

The Department of Commerce transmits recorded time information on WWV/WWVH 5, 10, 15, and 20 MHz frequencies. During the 40 second interval between time ticks, atmospheric and navigation information is announced by voice. Listen at minute 14 & 15 on WWV and minute 43 & 44 on WWVH for GPS status information.

The computer bulletin board system (BBS) is capable of handling 16 simultaneous callers and provides GPS information such as GPS Status Messages, Satellite Almanacs, Notice Advisories to Navstar Users and post-mission ephemeris data. Also included is status information on the OMEGA navigation System and the Coast Guard's Differential GPS System.

The GPSIC disseminates safety GPS advisories broadcast messages through USCG broadcast stations utilizing VHF-FM voice, HF-SSB voice, and NAVTEX broadcasts. The broadcasts provide the GPS user in the marine environment with the current status of the GPS satellite constellation, as well as any planned/unplanned system outages that could affect GPS navigational accuracy.

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

Commanding Officer	Phone: (703) 866-3806
U.S. Coast Guard ONSCEN	FAX: (703) 866-3825
7323 Telegraph Road	
Alexandria, VA 22310-3393	

GLOSSARY OF AIDS TO NAVIGATION TERMS

Adrift: Afloat and unattached in any way to the shore or seabed.

Aid to navigation: Any device external to a vessel or aircraft specifically intended to assist navigators in determining their position or safe course, or to warn them of dangers or obstructions to navigation.

Alternating light: A rhythmic light showing light of alternating colors.

Arc of visibility: The portion of the horizon over which a lighted aid to navigation is visible from seaward.

Articulated beacon: A beacon-like buoyant structure, tethered directly to the seabed and having no watch circle. Called articulated light or articulated daybeacon, as appropriate.

Assigned position: The latitude and longitude position for an aid to navigation.

Beacon: A lighted or unlighted fixed aid to navigation attached directly to the earth's surface. (Lights and daybeacons both constitute "beacons".)

Bearing: The horizontal direction of a line of sight between two objects on the surface of the earth.

Bell: A sound signal producing bell tones by means of a hammer actuated by electricity or, on buoys, by sea motion.

Bifurcation: The point where a channel divides when proceeding from seaward. The place where two tributaries meet.

Broadcast Notice to Mariners: A radio broadcast designed to provide important marine information.

Buoy: A floating object of defined shape and color, which is anchored at a given position and serves as an aid to navigation.

Characteristic: The audible, visual, or electronic signal displayed by an aid to navigation to assist in the identification of an aid to navigation. Characteristic refers to lights, sound signals, racons, radiobeacons, and daybeacons.

Commissioned: The action of placing a previously discontinued aid to navigation back in operation.

Composite group-flashing light: A group-flashing light in which the flashes are combined in successive groups of different numbers of flashes.

Composite group-occulting light: A light similar to a group-occulting light except that the successive groups in a period have different numbers of eclipses.

Conventional direction of buoyage: The general direction taken by the mariner when approaching a harbor, river, estuary, or other waterway from seaward, or proceeding upstream or in the direction of the main stream of flood tide, or in the direction indicated in appropriate nautical documents (normally, following a clockwise direction around land masses).

Daybeacon: An unlighted fixed structure which is equipped with a dayboard for daytime identification.

Dayboard: The daytime identifier of an aid to navigation presenting one of several standard shapes (square, triangle, rectangle) and colors (red, green, white, orange, yellow, or black.)

Daymark: The daytime identifier of an aid to navigation. (See column 7 of the Light List.)

Diaphone: A sound signal which produces sound by means of a slotted piston moved back and forth by compressed air. A "two-tone" diaphone produces two sequential tones with the second tone of lower pitch.

Directional light: A light illuminating a sector or very narrow angle and intended to mark a direction to be followed.

Discontinued: To remove from operation (permanently or temporarily) a previously authorized aid to navigation.

Discrepancy: Failure of an aid to navigation to maintain its position or function as prescribed in the Light List.

Discrepancy buoy: An easily transportable buoy used to temporarily replace an aid to navigation not watching properly.

Dolphin: A minor aid to navigation structure consisting of a number of piles driven into the seabed or riverbed in a circular pattern and drawn together with wire rope.

Eclipse: An interval of darkness between appearances of a light.

Emergency light: A light of reduced intensity displayed by certain aids to navigation when the main light is extinguished.

Establish: To place an authorized aid to navigation in operation for the first time.

Extinguished: A lighted aid to navigation which fails to show a light characteristic.

Fixed light: A light showing continuously and steadily, as opposed to a rhythmic light. (Do not confuse with "fixed" as used to differentiate from "floating.")

Flash: A relatively brief appearance of a light, in comparison with the longest interval of darkness in the same character.

Flash tube: An electronically controlled high-intensity discharge lamp with a very brief flash duration.

Flashing light: A light in which the total duration of light in each period is clearly shorter than the total duration of darkness and in which the flashes of light are all of equal duration. (Commonly used for a single-flashing light which exhibits only single flashes which are repeated at regular intervals.)

Floating aid to navigation: A buoy, secured in its assigned position by a mooring.

Fog detector: An electronic device used to automatically determine conditions of visibility which warrant the turning on and off of a sound signal or additional light signals.

Fog signal: See sound signal.

Geographic range: The greatest distance the curvature of the earth permits an object of a given height to be seen from a particular height of eye without regard to luminous intensity or visibility conditions.

Gong: A wave actuated sound signal on buoys which uses a group of saucer-shaped bells to produce different tones.

Group-flashing light: A flashing light in which a group of flashes, specified in number, is regularly repeated.

Group-occulting light: An occulting light in which a group of eclipses, specified in number, is regularly repeated.

Horn: A sound signal which uses electricity or compressed air to vibrate a disc diaphragm.

Inoperative: Sound signal or electronic aid to navigation out of service due to a malfunction.

Interrupted quick light: A quick flashing light in which the rapid alternations are interrupted at regular intervals by eclipses of long duration.

Isolated danger mark: A mark erected on, or moored above or very near, an isolated danger which has navigable water all around it.

Isophase light: A rhythmic light in which all durations of light and darkness are equal. (Formerly called equal interval light.)

Junction: The point where a channel divides when proceeding seaward. The place where a distributary departs from the main stream.

Large navigation buoy (LNB): A 40-foot diameter, automated disc-shaped buoy used to replace lightships. Most LNB's are used in conjunction with major Traffic Separation Schemes. All LNB's are equipped with Emergency lights.

Lateral system: A system of aids to navigation in which characteristics of buoys and beacons indicate the sides of the channel or route relative to a conventional direction of buoyage (usually upstream).

Light: The signal emitted by a lighted aid to navigation. The illuminating apparatus used to emit the light signal. A lighted aid to navigation on a fixed structure.

Light sector: The arc over which a light is visible, described in degrees true, as observed from seaward towards the light. May be used to define distinctive color difference of two adjoining sectors, or an obscured sector.

Lighted ice buoy (LIB): A lighted buoy without sound signal, and designed to withstand the forces of shifting and flowing ice. Used to replace a conventional buoy when that aid to navigation is endangered by ice.

Lighthouse: A lighted beacon of major importance.

Local Notice to Mariners: A written document issued by each U.S. Coast Guard district to disseminate important information affecting aids to navigation, dredging, marine construction, special marine activities, and bridge construction on the waterways within that district.

Luminous range: The greatest distance a light can be expected to be seen given its nominal range and the prevailing meteorological visibility (see page xxviii).

Mark: A visual aid to navigation. Often called navigation mark, includes floating marks (buoys) and fixed marks (beacons).

Meteorological visibility: The greatest distance at which a black object of suitable dimension could be seen and recognized against the horizon sky by day, or, in the case of night observations, could be seen and recognized if the general illumination were raised to the normal daylight level.

Mileage number: A number assigned to aids to navigation which gives the distance in sailing miles along the river from a reference point to the aid to navigation. The number is used principally in the Mississippi River System.

Nominal range: The maximum distance a light can be seen in clear weather (meteorological visibility of 10 nautical miles). Listed for all lighted aids to navigation except range lights, directional lights, and private aids to navigation.

Occulting light: A light in which the total duration of light in each period is clearly longer than the total duration of darkness and in which the intervals of darkness (occultations) are all of equal duration. (Commonly used for single-occulting light which exhibits only single occultations which are repeated at regular intervals.)

Ocean Data Acquisition System (ODAS): Certain very large buoys in deep water for the collection of oceanographic and meteorological information. All ODAS buoys are yellow in color and display a yellow light.

Off shore tower: Monitored light stations built on exposed marine sites to replace lightships.

Off station: A floating aid to navigation not on its assigned position.

Passing light: A low intensity light which may be mounted on the structure of another light to enable the mariner to keep the latter light in sight when passing out of its beam during transit.

Period: The interval of time between the commencement of two identical successive cycles of the characteristic of the light or sound signal.

Pile: A long, heavy timber driven into the seabed or riverbed to serve as a support for an aid to navigation.

Port hand mark: A buoy or beacon which is left to the port hand when proceeding in the "conventional direction of buoyage".

Preferred channel mark: A lateral mark indicating a channel junction or bifurcation, or a wreck or other obstruction which, after consulting a chart, may be passed on either side.

Primary aid to navigation: An aid to navigation established for the purpose of making landfalls and coastwise passages from headland to headland.

Quick light: A light exhibiting very rapid regular alternations of light and darkness, normally 60 flashes per minute. (Formerly called quick flashing light.)

RACON: A radar beacon which produces a coded response, or radar paint, when triggered by a radar signal.

Radar: An electronic system designed to transmit radio signals and receive reflected images of those signals from a "target" in order to determine the bearing and distance to the "target".

Radar reflector: A special fixture fitted to or incorporated into the design of certain aids to navigation to enhance their ability to reflect radar energy. In general, these fixtures will materially improve the aid to navigation for use by vessels with radar.

Radlobeacon: Electronic apparatus which transmits a radio signal for use in providing a mariner a line of position.

Range: A line formed by the extension of a line connecting two charted points.

Range lights: Two lights associated to form a range which often, but not necessarily, indicates a channel centerline. The front range light is the lower of the two, and nearer to the mariner using the range. The rear range light is higher and further from the mariner.

Rebuilt: A fixed aid to navigation, previously destroyed, which has been restored as an aid to navigation.

Regulatory marks: A white and orange aid to navigation with no lateral significance. Used to indicate a special meaning to the mariner, such as danger, restricted operations, or exclusion area.

Relighted: An extinguished aid to navigation returned to its advertised light characteristics.

Replaced: An aid to navigation previously off station, adrift, or missing, restored by another aid to navigation of the same type and characteristics.

Replaced (temporarily): An aid to navigation previously off station, adrift, or missing, restored by another aid to navigation of different type and/or characteristic.

Reset: A floating aid to navigation previously off station, adrift, or missing, returned to its assigned position (station).

Rhythmic light: A light showing intermittently with a regular periodicity.

Setting a buoy: The act of placing a buoy on assigned position in the water.

Sector: See light sector.

Siren: A sound signal which uses electricity or compressed air to

actuate either a disc or a cup-shaped rotor.

Skeleton tower: A tower, usually of steel, constructed of heavy corner members and various horizontal and diagonal bracing members.

Sound signal: A device which transmits sound, intended to provide information to mariners during periods of restricted visibility and foul weather.

Starboard hand mark: A buoy or beacon which is left to the starboard hand when proceeding in the "conventional direction of buoyage."

Station buoy: An unlighted buoy set near a Large Navigation Buoy or an important buoy as a reference point should the primary aid to navigation be moved from its assigned position.

Topmark: One or more relatively small objects of characteristic shape and color placed on an aid to identify its purpose.

Traffic Separation Scheme: Shipping corridors marked by buoys which separate incoming from outgoing vessels. Improperly called SEA LANES.

Watching properly: An aid to navigation on its assigned position exhibiting the advertised characteristics in all respects.

Whistle: A wave actuated sound signal on buoys which produces sound by emitting compressed air through a circumferential slot into a cylindrical bell chamber.

Winter marker: An unlighted buoy without sound signal, used to replace a conventional buoy when that aid to navigation is endangered by ice.

Winter light: A light which is maintained during those winter months when the regular light is extinguished. It is of lower candlepower than the regular light but usually of the same characteristic.

Withdrawn: The discontinuance of a floating aid to navigation during severe ice conditions or for the winter season.

ABBREVIATIONS USED IN COAST GUARD BROADCAST NOTICES TO MARINERS

<u>Word/phrase</u>	<u>Abbrev</u>	<u>Word/phrase</u>	<u>Abbrev</u>
<u>Light characteristics</u>		Temporarily replaced by lighted buoy	TRLB
Fixed	F	Whistle	WHIS
Occulting	OC	<u>Organizations</u>	
Group–Occulting	OC(2)	Coast Guard	CG
Composite	OC(2+1)	Commander, Coast Guard District (#)	CCGD(#)
Group–Occulting		U.S. Army Corps of Engineers	COE
Isophase	ISO	Defense Mapping Agency	DMAHTC
Single–Flashing	FL	Hydro./Topo. Center	
Group–Flashing	FL(3)	National Ocean Service	NOS
Composite	FL(2+1)	National Weather Service	NWS
Group–Flashing		<u>Vessels</u>	
Continuous	Q	Aircraft	A/C
Quick–Flashing		Fishing Vessel	F/V
Interrupted	IQ	Liquified Natural Gas Carrier	LNG
Quick–Flashing		Motor Vessel	M/V ¹
Morse Code	MO(A)	Pleasure Craft	P/C
Fixed and Flashing	FFL	Research Vessel	R/V
Alternating	AL	Sailing Vessel	S/V
Characteristic	CHAR	<u>Compass Directions</u>	
<u>Colors</u>		East	E
Black	B	North	N
Blue	BU	Northeast	NE
Green	G	Northwest	NW
Orange	OR	South	S
Red	R	Southeast	SE
White	W	Southwest	SW
Yellow	Y	West	W
<u>Aids to Navigation</u>		<u>Months</u>	
Aeronautical Radiobeacon	AERO RBN	January	JAN
Articulated Daybeacon	ART DBN	February	FEB
Articulated Light	ART LT	March	MAR
Destroyed	DESTR	April	APR
Discontinued	DISCONTD	May	MAY
Established	ESTAB	June	JUN
Exposed Location Buoy	ELB	July	JUL
Fog signal station	FOG SIG	August	AUG
Large Navigation Buoy	LNB	September	SEP
Light	LT	October	OCT
Light List Number	LLNR	November	NOV
Lighted Bell Buoy	LBB	December	DEC
Lighted Buoy	LB	<u>Days of the Week</u>	
Lighted Gong Buoy	LGB	Monday	MON
Lighted Horn Buoy	LHB	Tuesday	TUE
Lighted Whistle Buoy	LWB	Wednesday	WED
Ocean Data Acquisition System	ODAS	Thursday	THU
Privately Maintained	PRIV MAINTD	Friday	FRI
Radar responder beacon	RACON	Saturday	SAT
Radar Reflector	RA REF	Sunday	SUN
Radiobeacon	RBN		
Temporarily replaced by unlighted buoy	TRUB		

¹ M/V includes: Steam Ship, Container Vessel, Cargo Vessel, etc.

ABBREVIATIONS USED IN COAST GUARD BROADCAST NOTICES TO MARINERS

<u>Word/phrase</u>	<u>Abbrev</u>	<u>Word/phrase</u>	<u>Abbrev</u>
Various		Prohibited	PROHIB
Anchorage	ANCH	Publication	PUB
Anchorage prohibited	ANCH PROHIB	Range	RGE
Approximate	APPROX	Reported	REP
Atlantic	ATLC	Restricted	RESTR
Authorized	AUTH	Rock	RK
Average	AVG	Saint	ST
Bearing	BRG	Second (time; geo pos)	SEC
Breakwater	BKW	Signal station	SIG STA
Broadcast Notice to Mariners	BNM	Station	STA
Channel	CHAN	Statute Mile(s)	SM
Code of Federal Regulations	CFR	Storm signal station	S SIG STA
Continue	CONT	Temporary	TEMP
Degrees (temperature; geo pos)	DEG	Through	THRU
Diameter	DIA	Thunderstorm	TSTM
Edition	ED	True	T
Effect/Effective	EFF	Uncovers; Dries	UNCOV
Entrance	ENTR	Universal Coordinate Time	UTC
Explosive Anchorage	EXPLOS ANCH	Urgent Marine	UMIB
Fathom(s)	FM(S)	Information Broadcast	
Foot/Feet	FT	Velocity	VLCTY
Harbor	HBR	Vertical clearance	VERT CL
Height	HT	Visibility	VSBY
Hertz	HZ	Warning	WRNG
Horizontal clearance	HOR CL	Weather	WEA
Hour	HR	Wreck	WK
International Regulations for Preventing Collisions at Sea, 1972	COLREGS	Yard(s)	YD
Kilohertz	KHZ	Countries and States	
Kilometer	KM	Alabama	AL
Knot(s)	KT(S)	Alaska	AK
Latitude	LAT	American Samoa	AS
Local Notice to Mariners	LMN	Arizona	AZ
Longitude	LONG	Arkansas	AR
Maintained	MAINTD	California	CA
Maximum	MAX	Canada	CN
Megahertz	MHZ	Colorado	CO
Millibar	MB	Connecticut	CT
Millimeter	MM	Delaware	DE
Minute (time; geo pos)	MIN	District of Columbia	DC
Moderate	MDT	Federated States of Micronesia	FSM
Mountain, Mount	MT	Florida	FL
Nautical Mile(s)	NM	Georgia	GA
Notice to Mariners	NTM	Guam	GU
Obstruction	OBSTR	Hawaii	HI
Occasion/Occasionally	OCCASION	Idaho	ID
Operating Area	OPAREA	Illinois	IL
Pacific	PAC	Indiana	IN
Point(s)	PT(S)	Iowa	IA
Position	PSN	Kansas	KS
Position Approximate	PA	Kentucky	KY
Pressure	PRES	Louisiana	LA
Private, Privately	PRIV	Maine	ME
		Maryland	MD
		Massachusetts	MA

ABBREVIATIONS USED IN COAST GUARD BROADCAST NOTICES TO MARINERS

<u>Word/phrase</u>	<u>Abbrev</u>	<u>Word/phrase</u>	<u>Abbrev</u>
Mexico	MX	Oregon	OR
Michigan	MI	Pennsylvania	PA
Minnesota	MN	Puerto Rico	PR
Mississippi	MS	Rhode Island	RI
Missouri	MO	South Carolina	SC
Montana	MT	South Dakota	SD
Nebraska	NE	Tennessee	TN
New Hampshire	NH	Texas	TX
Nevada	NV	United States	US
New Jersey	NJ	Utah	UT
New Mexico	NM	Vermont	VT
New York	NY	Virgin Islands	VI
North Carolina	NC	Virginia	VA
North Dakota	ND	Washington	WA
Northern Marianas	CM	West Virginia	WV
Ohio	OH	Wisconsin	WI
Oklahoma	OK	Wyoming	WY

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RADIOBEACON SYSTEM - ATLANTIC COAST

SEQUENCED - By Frequency

Freq kHz	Sequence	Station	Characteristic	Range (n.m.)	Lat. (N)	Long. (W)
286	I	HIGHLAND	HI (.... ..)	100	42 02 24	70 03 40
	IV	AMBROSE	T (-)	125	40 27 32	73 49 52
	V	GREAT DUCK ISLAND	GD (-.-. -..)	50	44 08 32	68 14 47
	VI	MANANA ISLAND	MI (-. .)	100	43 45 48	69 19 38
306	I, IV	CLINTON HARBOR	CL (-.-. .-..)	20	41 16 00	72 31 10
	II	LITTLE GULL	J (----)	20	41 12 22	72 06 29
	III, VI	HORTON POINT	HP (.... .-..)	20	41 05 06	72 26 48
	V	WATCH HILL	WH (.--)	10	41 18 36	71 55 30
316	I, IV	EXECUTION ROCKS	XR (-.-. .-.)	20	40 52 41	73 44 18
	II, V	OLDFIELD POINT	OP (---- .-..)	20	40 58 36	73 07 08
	III, VI	STRATFORD POINT	SP (... .-..)	20	41 09 06	73 06 13

CONTINUOUS - By Frequency

Freq kHz	Station	Characteristic	Range (n.m.)	Lat. (N)	Long. (W)
291	HALFWAY ROCK	HR (.... .-.)	10	43 39 21	70 02 15
291	NOBSKA POINT	NP (-. .-..)	20	41 30 58	70 39 20
291	FIRE ISLAND	RT (-.-. -)	15	40 38 18	73 18 53
293	MONTAUK POINT	MP (-.- .-..)	125	41 04 02	71 51 44
295	SCITUATE HARBOR	SH (...)	10	42 11 56	70 43 12
298	NANTUCKET LNB	NS (-. ...)	50	40 30 00	69 28 00
301	PORTLAND LIGHTED HORN BUOY P (LNB)	PH (-.-.)	30	43 31 37	70 05 31
301	BLOCK ISLAND	BI (-... ..)	20	41 09 11	71 33 04
302	EAST ROCKAWAY INLET	ER (. .-.)	10	40 35 11	73 45 11
304	BOSTON LIGHTED HORN BUOY B (LNB)	BH (-...)	30	42 22 42	70 47 00
308	CLEVELAND LEDGE	CL (-.-. .-..)	10	41 37 51	70 41 42
308	MANASQUAN INLET	MI (-. .)	20	40 06 03	74 02 03
310	BEAVERTAIL	N (-.)	20	41 26 58	71 23 58
311	CHATHAM	CH (-.-.)	20	41 40 17	69 57 02
311	SHINNECOCK INLET	SN (... -.)	20	40 50 32	72 28 44
314	MATINICUS ROCK	MR (.. .-.)	20	43 47 00	68 51 19

CONTINUOUS - By Frequency

<i>Freq kHz</i>	<i>Station</i>	<i>Characteristic</i>	<i>Range (n.m.)</i>	<i>Lat. (N)</i>	<i>Long. (W)</i>
314	BUZZARDS BAY	BB (-... -...)	20	41 23 47	71 02 02
318	CAPE COD CANAL BREAKWATER	CC (-.-. -.-.)	20	41 46 19	70 30 04
319	JONES INLET	Jl (.---- ..)	10	40 34 50	73 34 24
320	THE CUCKOLDS	CU (-.-. ..-)	10	43 46 46	69 39 02
320	SAYBROOK BREAKWATER	SB (... -...)	10	41 15 47	72 20 36
322	PORTSMOUTH HARBOR (NEW CASTLE) LIGHT	NCE (-. -.-. .)	10	43 04 15	70 42 36
322	NEW BEDFORD	NB (-. -...)	10	41 37 28	70 54 22
325	EASTERN POINT	EP (. .---.)	10	42 34 50	70 39 54
325	POINT JUDITH	PJ (.---. .----)	10	41 21 39	71 28 55
325	BRANT POINT	BP (-... .---.)	10	41 17 23	70 05 27

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RADIOBEACON SYSTEM ATLANTIC COAST

VOLUME 1 1992 EDITION

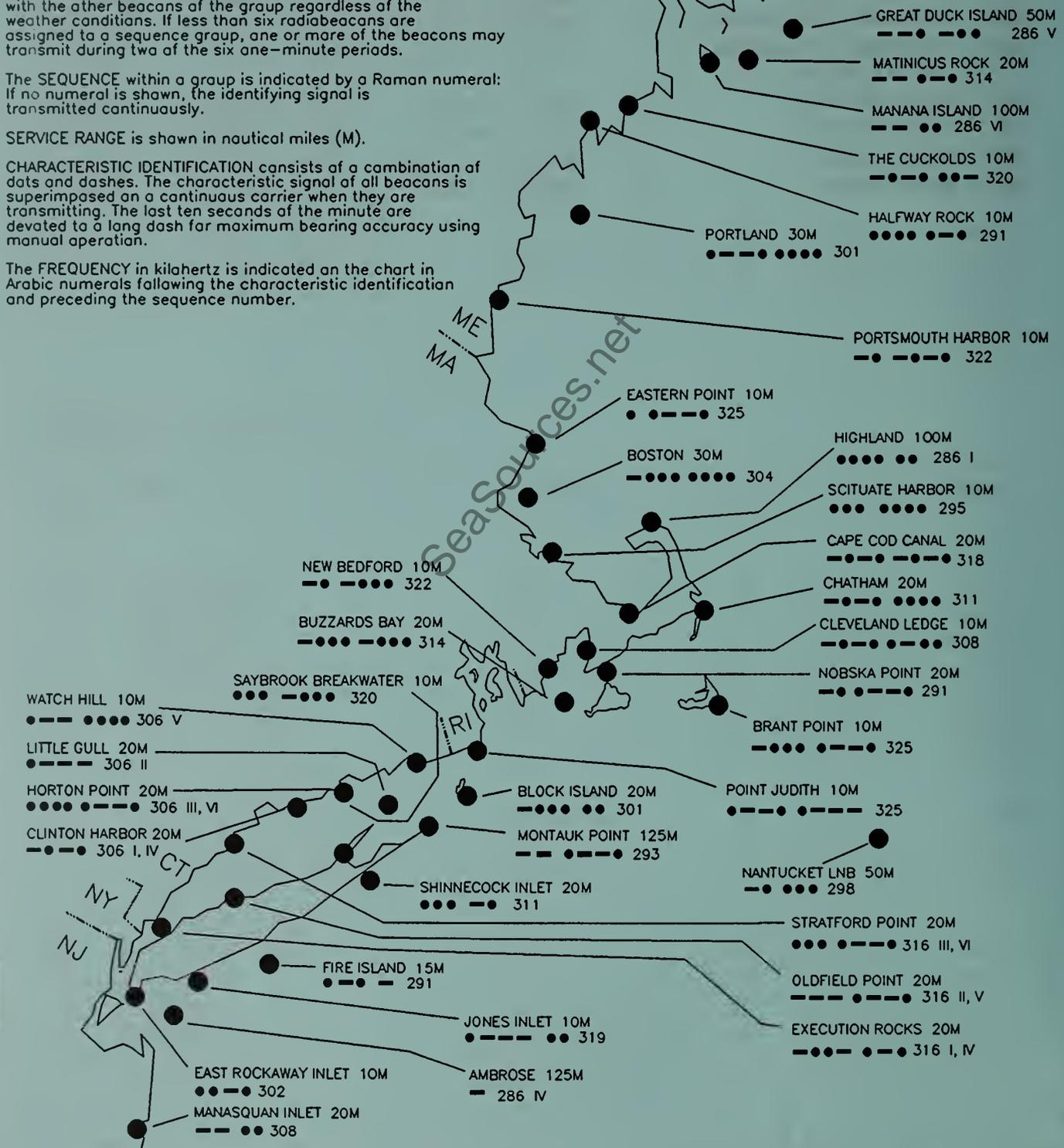
Many radiobeacons must share a group frequency with other beacons. Therefore, radiobeacons in the same general geographic area are divided into groups of up to six beacons transmitting on a single frequency with the sequence being repeated continually. Each radiobeacon transmits for at least one minute out of each six-minute period in sequence with the other beacons of the group regardless of the weather conditions. If less than six radiobeacons are assigned to a sequence group, one or more of the beacons may transmit during two of the six one-minute periods.

The SEQUENCE within a group is indicated by a Roman numeral: If no numeral is shown, the identifying signal is transmitted continuously.

SERVICE RANGE is shown in nautical miles (M).

CHARACTERISTIC IDENTIFICATION consists of a combination of dots and dashes. The characteristic signal of all beacons is superimposed on a continuous carrier when they are transmitting. The last ten seconds of the minute are devoted to a long dash for maximum bearing accuracy using manual operation.

The FREQUENCY in kilohertz is indicated on the chart in Arabic numerals following the characteristic identification and preceding the sequence number.



GEOGRAPHIC RANGE TABLE

The following table gives the approximate geographic range of visibility for an object which may be seen by an observer at sea level. It is necessary to add to the distance for the height of any object the distance corresponding to the height of the observer's eye above sea level.

Distances of visibility for objects of various elevations above sea level.

Height		Distance Nautical Miles (NM)	Distance Statute Miles (SM)	Height		Distance Nautical Miles (NM)	Distance Statute Miles (SM)	Height		Distance Nautical Miles (NM)	Distance Statute Miles (SM)
Feet	Meters			Feet	Meters			Feet	Meters		
5	1.5	2.6	3.0	70	21.3	9.8	11.3	250	76.2	18.5	21.3
10	3.1	3.7	4.3	75	22.9	10.1	11.7	300	91.4	20.3	23.3
15	4.6	4.5	5.2	80	24.4	10.5	12.0	350	106.7	21.9	25.2
20	6.1	5.2	6.0	85	25.9	10.8	12.4	400	121.9	23.4	26.9
25	7.6	5.9	6.7	90	27.4	11.1	12.8	450	137.2	24.8	28.6
30	9.1	6.4	7.4	95	29.0	11.4	13.1	500	152.4	26.2	30.1
35	10.7	6.9	8.0	100	30.5	11.7	13.5	550	167.6	27.4	31.6
40	12.2	7.4	8.5	110	33.5	12.3	14.1	600	182.9	28.7	33.0
45	13.7	7.8	9.0	120	36.6	12.8	14.7	650	198.1	29.8	34.3
50	15.2	8.3	9.5	130	39.6	13.3	15.4	700	213.4	31.0	35.6
55	16.8	8.7	10.0	140	42.7	13.8	15.9	800	243.8	33.1	38.1
60	18.3	9.1	10.4	150	45.7	14.3	16.5	900	274.3	35.1	40.4
65	19.8	9.4	10.9	200	61.0	19.0	16.5	1000	304.8	37.0	42.6

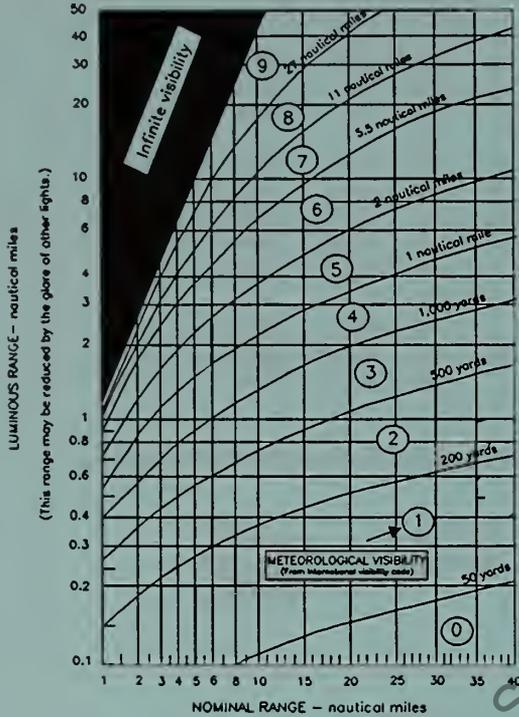
Example: Determine the geographic visibility of an object, with a height above water of 65 feet, for an observer with a height of eye of 35 feet. Enter above table:

Height of object	65 feet	9.4 NM
Height of observer	35 feet	<u>6.9 NM</u>
Computed geographic visibility		16.3 NM

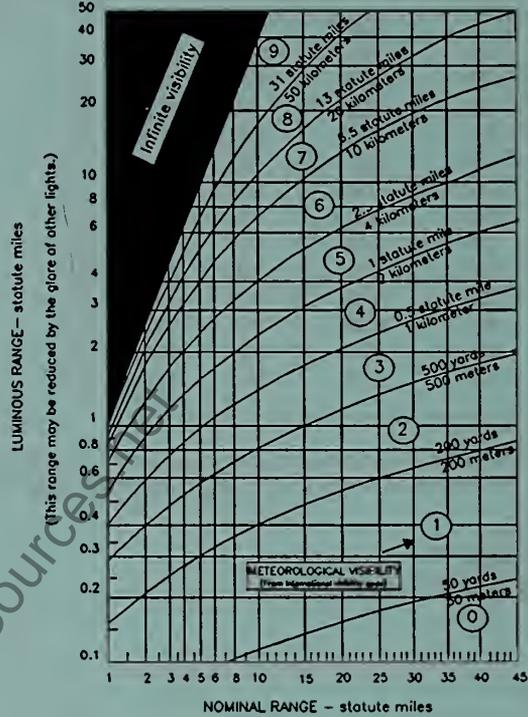
LUMINOUS RANGE DIAGRAM

The nominal range given in this Light List is the maximum distance a given light can be seen when the meteorological visibility is 10 nautical miles (or 11.5 statute miles on Lake Champlain). If the existing visibility is less than 10 NM (11.5 SM), the range at which the light can be seen will be reduced below its nominal range. And, if the visibility is greater than 10 NM (11.5 SM), the light can be seen at greater distances. The distance at which a light may be expected to be seen in the prevailing visibility is called its luminous range.

Nautical Miles



Statute Miles (For Lake Champlain)



METEOROLOGICAL VISIBILITY (From International Visibility Code)			
Code	Metric	Nautical (approximate)	Statute (approximate)
0	Less than 50 meters	Less than 50 yards	Less than 50 yards
1	50-200 meters	50-200 yards	50-200 yards
2	200-500 meters	200-500 yards	200-500 yards
3	500-1,000 meters	500-1,000 yards	500-1,000 yards
4	1-2 kilometers	1,000-2,000 yards	1,000-2,000 yards
5	2-4 kilometers	1-2 nautical miles	1-2.5 statute miles
6	4-10 kilometers	2-5.5 nautical miles	2.5-6.5 statute miles
7	10-20 kilometers	5.5-11 nautical miles	6.5-13 statute miles
8	20-50 kilometers	11-27 nautical miles	13-31 statute miles
9	Greater than 50 km	Greater than 27 nm	Greater than 31 miles

This diagram enables the mariner to determine the approximate luminous range of a light when the nominal range and the prevailing meteorological visibility are known. The diagram is entered from the bottom border using the nominal range listed in column 6 of this book. The intersection of the nominal range with the appropriate visibility curve (or, more often, a point between two curves) yields, by moving horizontally to the left border, the luminous range.

CAUTION: When using this diagram it must be remembered that:

1. The ranges obtained are approximate.
2. The transparency of the atmosphere may vary between the observer and the light.
3. Glare from background lighting will considerably reduce the range at which lights are sighted.
4. The rolling motion of the mariner and/or of a lighted aid to navigation may reduce the distance at which lights can be detected and identified.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
SEACOAST (Rhode Island) - First District							
N/W APPROACHES TO NEW YORK - NANTUCKET SHOALS TO FIVE FATHOM BANK (Chart 12300)							
655	Black Island Southeast Light	41 09.2 71 33.1	Fl G 5^s	258	24	On steel tower. 67	Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
656	Black Island Southeast Radiobeacon	41 09.2 71 33.1	Bl (-... ..)		20		FREQ: 301 kHz. Antenna 70 feet east south east of tower.
660	<i>Southwest Ledge Lighted Bell Buoy 2</i> Marks southwest edge of shoals.	41 06.7 71 40.3	Fl R 2.5^s		4	Red.	

SEACOAST (New York) - First District							
APPROACHES TO NEW YORK - NANTUCKET SHOALS TO FIVE FATHOM BANK (Chart 12300)							
665	<i>Montauk Point Lighted Whistle Buoy MP</i>	41 01.8 71 45.7	Ma (A) W		6	Red and white stripes with red spherical topmark.	
670	Montauk Point Light	41 04.2 71 51.5	Fl W 5^s	168	24	White octagonal, pyramidal tower with brown band midway of height, covered way to gray dwelling.	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light (F W 5 ^s) when main light is extinguished. Lighted throughout 24 hours.
671	Montauk Point Radiobeacon	41 04.2 71 51.5	MP (--		125		FREQ: 286 kHz, III. Antenna 690 yards, 227° from light.
675 27180	<i>Shinnecock Inlet Approach Lighted Whistle Buoy SH</i>	40 49.0 72 28.6	Ma (A) W		6	Red and white stripes with red spherical topmark.	
680 27175	Shinnecock Light	40 50.5 72 28.7	Fl (2) R 15^s 0.1s fl - 3.6s ec. 0.1s fl - 11.2s ec.	75	21	Red skeleton tower.	HORN: 1 blast ev 15 ^s (2 ^s bl).
681 27176	Shinnecock Radiobeacon	40 50.5 72 28.8	SN (... ..)		20		FREQ: 311 kHz. Antenna at light tower.
685	<i>Moriches Inlet Approach Lighted Bell Buoy 2B</i>	40 44.1 72 45.2	Fl R 6s		4	Red.	
690	Cedar Island Beach Outfall Buoy A					Yellow can.	Private aid.
695	Fire Island Light	40 37.9 73 13.1	Fl W 7.5^s	167	24	Black and white banded tower; black on top.	Lighted throughout 24 hours.
700	Fire Island Radiobeacon	40 38.3 73 18.9	RT (... ..)		15		FREQ: 291 kHz.
705	<i>Fire Island Inlet Approach Lighted Whistle Buoy 4FI</i>	40 35.6 73 17.8	Fl R 2.5^s		4	Red.	
720	<i>Nantucket Traffic Lane Lighted Horn Buoy NA</i>	40 25.7 73 11.5	Fl Y 6^s		7	Yellow.	RACON: N (..) HORN: 1 blast ev 15 ^s (2 ^s bl).
725	<i>Nantucket Traffic Lane Lighted Whistle Buoy NB</i>	40 26.5 73 40.8	Fl Y 4^s		6	Yellow.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
SEACOAST (New York) - First District							
N/W APPROACHES TO NEW YORK - NANTUCKET SHOALS TO FIVE FATHOM BANK (Chart 12300)							
730	Ambrose Light	40 27.6 73 49.9	FI W 5^s	136	24	Red tower on white square superstructure on four piles. AMBROSE on sides	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light of reduced intensity when main light is extinguished. Obstruction lights showing FI W from all four corners. Piles floodlighted from sunset to sunrise. Lighted throughout 24 hours. RACON: N (—●).
731	Ambrose Radiobeacon	40 27.6 73 49.9	T (—)		125		286 kHz, IV.

SEACOAST (New Jersey) - First District							
APPROACHES TO NEW YORK - NANTUCKET SHOALS TO FIVE FATHOM BANK (Chart 12300)							
735	<i>Hudson Canyon Traffic Lane Lighted Horn Buoy HA</i>	40 07.6 73 21.4	FI Y 4^s		6	Yellow.	RACON: C (—●●●). HORN: 1 blast ev 30 ^s (3 ^s bl).
740	<i>Barnegat Traffic Lane Lighted Whistle Buoy BA</i>	40 20.7 73 47.7	FI Y 6^s		7	Yellow.	
745	<i>Fishing Grounds Obstruction Lighted Bell Buoy FG</i>	40 25.2 73 51.7	FI (2+1) G 6^s		4	Green and red bands.	
750	<i>New York Bight Dumping Ground Lighted Buoy NY</i>	40 22.8 73 50.7	FI Y 6^s		5	Yellow.	
755	<i>New York Bight Dumping Ground Buoy KVK</i>	40 22.2 73 51.2				Yellow nun.	
760	<i>New York Bight Dumping Ground Buoy OM</i>	40 22.7 73 50.4				Yellow can.	
765 32325	<i>Shrewsbury Rocks Lighted Bell Buoy 1 Off east end of rocks.</i>	40 20.5 73 55.6	FI G 2.5^s		4	Green.	
770 37325	<i>Shark River Inlet Lighted Whistle Buoy SI</i>	40 11.2 74 00.1	Mo (A) W		6	Red and white stripes with red spherical topmark.	
775 37345	MANASQUAN INLET NORTH BREAKWATER LIGHT 4	40 06.1 74 01.9	FI R 4s	30	6	TR on skeleton tower.	
780 37350	Manasquan Inlet South Breakwater Light 3	40 06.0 74 01.9	FI G 6s	35	10	SG on spindle.	HORN: 1 blast ev 30 ^s (3 ^s bl).
Sea Girt							
785	- Buoy A Marks firing range.					Yellow spar.	Private aid.
790	- Buoy B Marks firing range.					Yellow spar.	Private aid
795	- Buoy C Marks firing range.					Yellow spar.	Private aid.
800	- Buoy D Marks firing range.					Yellow spar.	Private aid.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
RHODE ISLAND - First District							
N/W							
NARRAGANSETT BAY (Chart 13221)							
Greenwich Bay							
Warwick Cove							
17970	- Buoy 5	41 41.0 71 23.5				Green can.	
17975	- Buoy 7	41 41.0 71 23.5				Green can.	
17980	- Buoy 9					Green can.	
17985	- Buoy 10					Red nun.	
17990	- Buoy 12					Red nun.	
Greenwich Bay							
17995	- Buoy 3					Green can.	
18000	- Buoy 5					Green can.	
18005	- Buoy 6					Red nun.	
18010	- Buoy 7 On edge of shoal.					Green can.	
18015	Cedar Tree Point Buoy 2					Red nun.	
18020	Apponaug Cove Approach Buoy 1					Green can.	
Apponaug Cave Channel							
18025	- Buoy 3					Green can.	
18030	- Buoy 5					Green can.	
18035	- Buoy 6					Red nun.	
18040	- Buoy 7					Green can.	
18045	- Buoy 8					Red nun.	
BLOCK ISLAND SOUND AND APPROACHES (Chart 13205)							
West Passage							
18050	Point Judith Light	41 21.7 71 28.9	Oc (3) W 15 ^s 5 ^s fl 2 ^s ec. 2 ^s fl 2 ^s ec. 2 ^s fl 2 ^s ec.	65	16	Octagonal tower, lower half white, upper half brown. 51	HORN: 1 blast ev 15 ^s (2 ^s bl).
18051	Point Judith Radiobeacon	41 21.7 71 28.9	PJ (•---• •---•)		20		FREQ: 325 kHz. Antenna 36 feet, 195° from light tower.
18055	<i>Point Judith Lighted Whistle Buoy 2</i>	41 19.3 71 28.6	Fl R 4 ^s		4	Red.	
18060	Point Judith Bell Buoy 4					Red.	
18065	Nebraska Shoal Buoy 2NS	41 21.0 71 34.6				Red nun.	
18070	<i>Block Island North Reef Lighted Bell Buoy 1B1</i>	41 15.5 71 34.6	Fl G 4 ^s		4	Green.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
RHODE ISLAND - First District							
N/W BLOCK ISLAND SOUND AND APPROACHES (Chart 13205)							
West Passage							
18075	Block Island North Light	41 13.7 71 34.6	Fl W 5^s	58	13	Black tower on grey granite dwelling. 52	
Point Judith Harbor of Refuge							
18080	- EAST ENTRANCE LIGHT 2	41 21.5 71 29.6	Fl R 4^s	31	5	TR on white pile structure.	
18085	- EAST ENTRANCE LIGHT 3	41 21.6 71 29.9	Fl G 4^s	39	5	SG on post on concrete base.	
18090	- MAIN BREAKWATER CENTER LIGHT	41 21.3 71 30.5	Fl W 2.5^s	37	7	NR on post on concrete base.	
18095	- WEST ENTRANCE LIGHT 2	41 21.7 71 30.8	Fl R 4^s	35	5	TR on post on concrete base.	
18100	- WEST ENTRANCE LIGHT 3	41 21.9 71 30.9	Fl G 6^s	35	6	SG on post on concrete base.	HORN: 1 blast ev 30 ^s (3 ^s bl).
18105	South Lump Buoy					Red and green bands; nun.	
18110	Point Judith Harbor Buoy 2					Red nun.	
18115	Point Judith Harbor Buoy 4					Red nun.	
18120	Point Judith Harbor Buoy 6					Red nun.	
18125	Point Judith Inner Harbor Daybeacon 8	41 22.5 71 30.8				TR on spindle.	
Great Island Channel							
18126	- Buoy 1					Green can.	
18127	- Buoy 3					Green can.	
18128	- Buoy 5					Green can.	
Point Judith Pond							
18130	- Junction Buoy					Red and green bands; nun.	
18135	- Channel Buoy 2					Red nun.	
18140	- Channel Buoy 2A					Red nun.	
18145	- Channel Buoy 2B					Red nun.	
18150	- Channel Buoy 3					Green can.	
18155	- Channel Buoy 4					Red nun.	
18160	- Channel Buoy 5					Green can.	
18165	- Channel Buoy 6					Red nun.	
18170	- Channel Buoy 6A					Red nun.	
18175	- Channel Buoy 7					Green can.	
18180	- Channel Buoy 8					Red nun.	
18185	- Channel Buoy 8A					Red nun.	
18190	- Channel Buoy 9					Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
RHODE ISLAND - First District							
N/W							
BLOCK ISLAND SOUND AND APPROACHES (Chart 13205)							
Point Judith Pond							
18195	- Channel Buoy 9A					Green can.	
18200	- Channel Buoy 10					Red nun.	
18205	- Channel Buoy 11					Green can.	
18210	- Channel Buoy 12					Red nun.	
18215	- Channel Buoy 14					Red nun.	
18220	- Channel Buoy 15					Green can.	
18225	- Channel Buoy 16					Red nun.	
18230	- Channel Buoy 18					Red nun.	
18235	- Channel Buoy 19					Green can.	
18240	- Channel Buoy 20					Red nun.	
18245	- Channel Buoy 21					Green can.	
18250	- Channel Buoy 24	41 23.4 71 29.8				Red nun.	
18255	- Channel Buoy 25					Green can.	
BLOCK ISLAND (Chart 13217)							
Block Island							
18260	Clay Head Buoy 3 Marks rock.					Green can.	
18265	- Northeast Whistle Buoy 5					Green.	
18270	- Old Harbor Channel Bell Buoy 1					Green.	
18275	- Old Harbor Channel Buoy 5 North end of shoal.					Green can.	
18280	- Old Harbor Channel Buoy 6					Red nun.	
18285	- Old Harbor Channel Buoy 7					Green can.	
18290	- Old Harbor Point Buoy 7	41 09.3 71 32.5				Green can.	
18295	Southeast Point Buoy 9	41 08.9 71 32.8				Green can.	
18300	- BREAKWATER LIGHT 3	41 10.6 71 33.3	FI G 2.5 ^s	27	8	SG on white skeleton tower, white house, concrete base.	HORN: 2 blasts ev 30 ^s (2 ^s bl 2 ^s si 2 ^s bl 24 ^s si).
18305	- Breakwater Outer Basin Light B	41 10.5 71 33.4	F R	23	11	TR on skeleton tower.	Lighted throughout 24 hours.
18310	Black Rock Point Buoy 2 On south side of rock.	41 08.4 71 35.8				Red nun.	
18315	Southwest Point Lighted Whistle Buoy 4	41 08.7 71 37.4	FI R 6 ^s		4	Red.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
RHODE ISLAND - First District							
		N/W					
BLOCK ISLAND (Chart 13217)							
Block Island							
18320	Dickens Point Shoal Bell Buoy 6					Red.	
Great Salt Pond							
18325	- Entrance Bell Buoy 2	41 12.1 71 35.7				Red.	
18330	- BREAKWATER LIGHT 4	41 12.0 71 35.6	F R	49	8	TR on white cylindrical tower; red top.	HORN: 1 blast ev 10s (1s bl).
18335	- Entrance Buoy 5	41 12.0 71 35.5				Green can.	
18340	- Entrance Buoy 7					Green can.	
18345	- Entrance Buoy 8					Red nun.	
18355	- Buoy 10					Red nun.	
18360	- Buoy 11					Green can.	
18365	- Buoy 12					Red nun.	
18370	- Buoy 13	41 11.2 71 34.7				Green can.	
18375	- Buoy 14					Red nun.	
RHODE ISLAND - First District							
BLOCK ISLAND SOUND AND APPROACHES (Chart 13205)							
18380	Watch Hill Light	41 18.2 71 51.5	Al Oc W (2) R 15 ^s 10.0 ^s Wit 1.1 ^s ec 0.3 ^s Rfl 2.2 ^s ec 0.3 ^s Rfl 1.1 ^s ec	61	W 15 R 13	Square, gray granite tower attached to white building.	HORN: 1 blast ev 30 ^s (3 ^s bl). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
18381	Watch Hill Radiobeacon	41 18.2 71 51.5	WH (•--- ••••)		10		FREQ: 306 kHz, V. Antenna 136 yards, 021° from light.
18385	Watch Hill Lighted Whistle Buoy WH	41 15.8 71 51.0	Ma (A) W		6	Red and white stripes.	
NEW YORK - First District							
BLOCK ISLAND SOUND AND GARDINERS BAY (Chart 13209)							
18390	Cerberus Shoal Lighted Gong Buoy 9 Northeast of shoal.	41 10.4 71 57.2	Fl G 4 ^s		4	Green.	
18395	Race Rock Light	41 14.6 72 02.8	Fl R 10 ^s	67	19	Granite tower attached to dwelling, on granite pier. 45	Lighted throughout 24 hours. HORN: 2 blasts ev 30 ^s (2 ^s bl-2 ^s si-2 ^s bl-24 ^s si). Horn points southeast. Emergency light of reduced intensity when main light is extinguished.
18400	Race Point Buoy 2 On west edge of shoal.					Red nun.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
NEW YORK - First District							
N/W							
BLOCK ISLAND SOUND AND GARDINERS BAY (Chart 13209)							
18405	<i>Valiant Rock Lighted Bell Buoy 1A</i> Northerly of rock.	41 13.8 72 04.0	Q G		4	Green.	
18410	Little Gull Island Light	41 12.4 72 06.5	F W	91	18	Gray granite tower, attached to red dwelling on pier.	HORN: 1 blast ev 15 ^s (2 ^s bl). Operates continuously. Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
18411	Little Gull Island Radiobeacon	41 12.4 72 06.5	J (•---)		20		FREQ: 306 kHz, II. Antenna 60 yards, 200° from light tower.
18415	Little Gull Island Reef Buoy 1 On east side of shoal spot.					Green can.	
18420	<i>Block Island Sound South Entrance Obstruction Lighted Buoy BIS</i>	41 06.9 71 43.1	Fl (2+1) G 6^s		4	Green and red bands.	
18425	<i>Endeavor Shoals Lighted Gong Buoy 1</i>	41 06.1 71 46.3	Fl G 4^s		4	Green.	
18435	Blackfish Rock Buoy 3 On north side of rock.					Green can.	
18440	<i>Shagwong Rock Lighted Buoy SR</i> On northeast side of rock.		Fl (2+1) G 6^s		4	Green and red bands.	
18445	<i>Shagwong Reef Lighted Bell Buoy 7SR</i> On north side of reef.	41 07.0 71 54.8	Fl G 2.5^s		4	Green.	
18450	<i>Montauk Harbor Entrance Lighted Bell Buoy M</i>	41 05.1 71 56.4	Mo (A) W		6	Red and white stripes with red spherical topmark.	
18455	MONTAUK EAST JETTY LIGHT 1	41 04.8 71 56.3	Fl G 4^s	30	4	SG on skeleton tower.	
18460	Montauk West Jetty Light 2	41 04.7 71 56.4	Fl R 5^s	32	14	TR on skeleton tower.	HORN: 1 blast ev 30 ^s (3 ^s bl).
18465	Montauk Channel Shoal Buoy 1S					Green can.	Removed when endangered by ice.
18470	Montauk Harbor West Side Daybeacon Marks rocks near edge of channel.					NW on pile worded DANGER ROCK.	Sides of daymark form 45° angle to the centerline of channel with apex toward channel.
Montauk Harbor							
18475	- Buoy 1					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18480	- Buoy 3					Green can.	Maintained from May 1 to Nov. 1. Private aid.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
NEW YORK - First District							
N/W BLOCK ISLAND SOUND AND GARDINERS BAY (Chart 13209)							
Mantauk Harbar							
18485	- Buoy 5					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18490	- Buoy 7					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18495	- Buoy 8					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
18500	- Buoy 9					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18505	- Buoy 10					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
18510	- Buoy 11					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18515	- Buoy 12					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
18520	- Buoy 13					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18525	- Buoy 15					Green can.	Maintained from May 1 to Nov. 1. Private aid.
Lake Mantauk							
18530	- Buoy 1					Green Spar.	Maintained from May 1 to Nov. 1. Private aid.
18535	- Buoy 3					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18540	- Buoy 4					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
18545	- Buoy 5					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18550	- Buoy 6					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
18555	- Buoy 7					Green can.	Maintained from May 1 to Nov. 1. Private aid.
18560	- Buoy 8					Red nun.	Maintained from May 1 to Nov. 1. Private aid.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
NEW YORK - First District							
N/W BLOCK ISLAND SOUND AND GARDINERS BAY (Chart 13209)							
Montauk Harbor							
18565	MONTAUK YACHT CLUB LIGHT	41 04.2 71 56.0	F W		65	On lighthouse tower.	Private aid.
CONNECTICUT - First District							
FISHERS ISLAND SOUND (Chart 13214)							
Southeast Entrance							
18570	Catumb Passage Buoy 1C Off rock.	41 17.4 71 52.9				Green can.	
18575	Catumb Passage Buoy 3C Northeast side of Catumb Rocks.					Green can.	
18580	Catumb Rocks Buoy 2 Southwest of reef.					Red nun.	
18585	Lords Passage Lighted Whistle Buoy L	41 17.4 71 54.3	Mo (A) W		6	Red and white stripes with red spherical topmark.	
18590	Lords Passage Buoy 2L	41 17.5 71 54.0				Red nun.	
18595	Wicopesset Passage Bell Buoy W					Red and white stripes with red spherical topmark.	
18600	Wicopesset Passage Rock Buoy WP On north side of rock.					Green and red bands; can.	
Main Channel							
18605	Gangway Rock Lighted Bell Buoy 2	41 18.0 71 51.5	FI R 6 ^s		4	Red.	Removed when endangered by ice.
18610	Watch Hill Reef Gong Buoy 1 On east side of reef.					Green.	
18615	Watch Hill Passage Buoy 3	41 17.9 71 51.7				Green can.	
18620	Sugar Reef Buoy 5					Green can.	
18625	Napatree Point Ledge Lighted Bell Buoy 6		FI R 4 ^s		4	Red.	
18630	Wicopesset Rock Buoy 7 Northeast of rock.					Green can.	
18635	Wicopesset Ledge Buoy 9					Green can.	
18640	Wicopesset Island Buoy 11					Green can.	
18645	Latimer Reef North Buoy N					Green and red bands; can.	
18650	Latimer Reef East Buoy E					Red and green bands; nun.	
18655	Seal Rocks Northeast Buoy S					Green and red bands; can.	
18660	Seal Rocks Buoy 13 On north side of rocks.					Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
CONNECTICUT - First District							
		N/W					
FISHERS ISLAND SOUND (Chart 13214)							
Main Channel							
18665	LATIMER REEF LIGHT	41 18.3 71 56.0	FI W 6^s	55	9	White conical tower, brown midway of height; brown cylinder. 49	BELL: 2 strokes ev 15 ^s .
18670	Youngs Rock Buoy 15 At north end of rock.					Green can.	
18675	Eel Grass Ground Southeast Buoy 16					Red nun.	
18680	East Clump Buoy 17	41 17.8 71 57.6				Green can.	
18685	Eel Grass Ground Northwest Buoy 18					Red nun.	
18690	<i>Ram Island Reef Lighted Bell Buoy 20</i>	41 18.2 71 58.4	FI R 4^s		4	Red.	
18695	Ram Island Reef Daybeacon RI On rocks.					NW on tower worded DANGER ROCKS.	
18700	Middle Clump Buoy 19					Green can.	
18705	Sweepers Ground Obstruction Buoy S					Red and green bands; nun.	
18710	Intrepid Rock Buoy IR On southeast side of rock					Red and green bands; nun.	
18715	Groton Long Point Buoy 22 On southwest end of reef.					Red nun.	
18720	Groton Long Point Buoy 24 On southwest side of 1/2 foot spot.					Red nun.	
18725	NORTH DUMPLING LIGHT	41 17.3 72 01.2	F W (R sector)	94	W 9 R 7	Square house with light tower. 60	HORN: 1 blast ev 30 ^s (3 ^s bl). Operates automatically. Red from 257° to 023°.
18730	Horseshoe Reef Buoy 26 On southwest side of reef.					Red nun.	
18735	SEAFLOWER REEF LIGHT On southwest part of reef.	41 17.7 72 02.0	FI W 4^s	28	7	NG on skeleton tower.	
Stonington Harbar							
18740	- Approach Buoy 2	41 18.7 71 54.6				Red nun.	
18745	- Approach Gong Buoy 3 On southeast end of Noyes Shoal.					Green.	
18750	STONINGTON OUTER BREAKWATER LIGHT 4	41 19.0 71 54.5	FI R 4^s	46	5	TR on skeleton tower, small house, concrete base.	HORN: 1 blast ev 10 ^s (1 ^s bl).
18755	STONINGTON BREAKWATER LIGHT 5	41 19.5 71 54.8	FI G 4^s	31	5	SG on skeleton tower, concrete base.	
18760	Stonington Point Junction Buoy SP					Red and green bands; nun.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
CONNECTICUT - First District							
N/W							
FISHERS ISLAND SOUND (Chart 13214)							
Stonington Harbor							
18765	STONINGTON INNER BREAKWATER LIGHT 8	41 19.8 71 54.6	FI R 4 ^s	27	5	TR on skeleton tower, concrete base.	
18770	- Buoy 7					Green can.	
18775	- Buoy 10 Marks end of outfall.					Red nun.	
Little Narragansett Bay							
<i>Channel buoys located 20-60 feet outside limit.</i>							
18780	Academy Rock Lighted Buoy 2 Marks west side of rock.	41 19.6 71 54.3	FI R 4 ^s			3 Red.	Removed when endangered by ice.
18785	- Entrance Buoy 4 Marks northwesterly edge of shoal.					Red nun.	
18790	- Entrance Lighted Buoy 3		FI G 4 ^s			3 Green.	Removed when endangered by ice.
18795	- Buoy 5A On south side of rock.					Green can.	
18800	- Buoy 5					Green can.	
18805	- Buoy 6					Red nun.	
18810	- Channel Buoy 7	41 19.8 71 53.3				Green can.	
18815	- Channel Lighted Buoy 9 180 feet outside channel limit.		FI G 4 ^s			3 Green.	Removed when endangered by ice.
18820	- Channel Buoy 10					Red nun.	
18825	- Channel Buoy 11					Green can.	
18830	- Channel Buoy 12					Red nun.	
18835	- Channel Lighted Buoy 13		FI G 2.5 ^s			3 Green.	Removed when endangered by ice.
18840	- Channel Buoy 14					Red nun.	
18845	- Channel Buoy 16					Red nun.	
18850	- Channel Buoy 18					Red nun.	
18855	- Channel Lighted Buoy 19 Marks south side of rock.		FI G 4 ^s			3 Green.	Removed when endangered by ice.
18860	Dennison Rock Buoy 2 Marks south side of rock.					Red nun.	
Pawcatuck River							
<i>Channel buoys located 20-30 feet outside channel limit.</i>							
18865	- Buoy 1 On south edge of shoal.	41 19.4 71 51.4				Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
CONNECTICUT - First District							
N/W FISHERS ISLAND SOUND (Chart 13214)							
Pawcatuck River							
<i>Channel buoys located 20-30 feet outside channel limit.</i>							
18870	- Buoy 3 On south point of shoal.					Green can.	
18875	- Channel Buoy 4 On south point of shoal.					Red nun.	
18880	- Channel Buoy 6					Red nun.	
18885	- Channel Buoy 7					Green can.	
18890	- Channel Buoy 8					Red nun.	
18895	- Channel Buoy 10					Red nun.	
18900	- Channel Buoy 12 On west edge of rocky area.					Red nun.	
18905	- Channel Buoy 14					Red nun.	
18910	- Channel Buoy 16					Red nun.	
18915	- Channel Buoy 17					Green can.	
18920	- Channel Buoy 19					Black can.	Private aid.
18925	Thompson Cove Buoy 1					Black can.	Maintained from May 1 to Nov. 30. Private aid.
18930	Thompson Cove Buoy 3					Black can.	Maintained from May 1 to Nov. 30. Private aid.
18935	- Channel Buoy 20					Red nun.	Private aid.
18940	- Channel Buoy 22					Red nun.	Private aid.
18945	- Channel Buoy 24					Red nun.	Private aid.
18950	- Channel Buoy 24A					Red nun.	Private aid.
18955	- Channel Buoy 25					Green can.	Private aid.
18960	- Channel Buoy 26					Red nun.	Private aid.
18965	- Channel Buoy 26A					Red nun.	Private aid.
18970	- Channel Buoy 27					Green can.	Private aid.
18975	- Channel Buoy 27A					Green can.	Private aid.
18980	- Channel Buoy 28					Red nun.	Private aid.
18985	Gavitt Point Outfall Buoy	41 21.2 71 50.2				White with orange bands and diamond worded DANGER SUB PIPE.	Private aid.
Watch Hill Cove							
18990	- Channel Lighted Buoy 2	41 18.9 71 51.7	FI R 4 ^s		3	Red.	Removed when endangered by ice.
18995	- Channel Buoy 1					Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
CONNECTICUT - First District							
N/W FISHERS ISLAND SOUND (Chart 13214)							
Silver Eel Pond							
19825	- LIGHT 2	41 15.5 72 02.0	FI R 4 ^s	14		Dolphin.	Private aid.
LONG ISLAND SOUND (Connecticut and New York) - First District							
LONG ISLAND SOUND (Eastern Part) (Chart 12354)							
19830	<i>Bartlett Reef Lighted Bell Buoy 4</i>	41 15.6 72 08.4	FI R 4 ^s		4	Red.	Removed when endangered by ice.
19835	Bartlett Reef Light On south end of reef.	41 16.5 72 08.2	FI W 5 ^s	35	12	NR on skeleton tower.	HORN: 2 blasts ev 60 ^s (3 ^s bl-3 ^s si-3 ^s bl-51 ^s si).
19840	Bartlett Reef Buoy 1A					Green can.	
19845	<i>Plum Island Lighted Whistle Buoy PI</i>	41 13.3 72 10.8	Mo (A) W		6	Red and white stripes with red spherical topmark.	
19850 26110	<i>Plum Gut Lighted Bell Buoy 2PG</i>		FI R 4 ^s		4	Red.	
19855 26105	PLUM GUT LIGHT	41 10.4 72 12.7	FI W 2.5 ^s	55	5	On brick shed.	
19860 26090	Orient Point Light	41 09.8 72 13.4	FI W 5 ^s	64	17	Black conical tower with white band in center.	HORN: 2 blasts ev 30 ^s (2 ^s bl-2 ^s si-2 ^s bl-24 ^s si). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
19865	Hatchett Reef Buoy 6 On south end of reef.					Red nun.	
19870	<i>Saybrook Bar Lighted Bell Buoy 8</i> On south point of shoal.	41 14.9 72 18.8	FI R 4 ^s		4	Red.	
19875	Long Sand Shoal East End Buoy E	41 14.6 72 19.4				Red and green bands; nun.	
19880 21160	Saybrook Breakwater Light	41 15.8 72 20.6	FI G 6 ^s	58	11	White conical tower on brown cylindrical pier. 49	HORN: 1 blast ev 30 ^s (3 ^s bl). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
19881 21161	Saybrook Breakwater Radlbeacon	41 15.8 72 20.6	SB (... -...)		10		FREQ: 320 kHz. Antenna at light tower.
19885	Orient Shoal Buoy 3 On northeast side of shoal.	41 09.0 72 19.8				Green can.	
19895	<i>Long Sand Shoal Lighted Bell Buoy 8A</i>	41 13.5 72 23.1	Q R		4	Red.	
19900	<i>Cornfield Lighted Whistle Buoy CF</i>	41 11.3 72 22.3	Mo (A) W		6	Red and white stripes with red spherical topmark.	
19905	<i>Long Sand Shoal West End Lighted Horn Buoy W</i> At west point of shoal.	41 13.6 72 27.6	FI (2+1) R 6 ^s		4	Red and green bands.	HORN: 1 blast ev 30 (3 bl).

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut and New York) – First District							
N/W LONG ISLAND SOUND (Eastern Part) (Chart 12354)							
19910	Horton Point Light	41 05.1 72 26.8	FI G 10^s	103	14	White square tower, dwelling attached.	
19911	Horton Point Radlabecan	41 05.1 72 26.8	HP (•••• •---•)		20		FREQ: 306 kHz, III, VI. Antenna 72 yards 162° from Light tower.
19915	<i>Sixmile Reef Lighted Bell Buoy 8C</i> At southerly edge of reef.		FI R 4^s		4	Red.	
19920	<i>Twenty-Eight Foot Shoal Lighted Buoy TE</i>	41 09.3 72 30.4	FI (2+1) R 6^s		4	Red and green bands.	
19925	<i>Kimberly Reef Lighted Horn Buoy KR</i>	41 12.8 72 37.4	FI (2+1) R 6^s		4	Red and green bands.	HORN: 1 blast ev 30 ^s (3 ^s bl).
19930	Falkner Island Light	41 12.7 72 39.2	FI W 10^s	94	13	White octagonal tower. 46	
19935	Goose Island Lighted Bell Buoy 10GI Off south end of shoal.	41 12.1 72 40.5	FI R 4^s		4	Red.	
19940	SACHEM HEAD BREAKWATER LIGHT On rock.	41 14.8 72 42.7	FI R 3^s			Pile.	Maintained from June 1 to Oct. 1. Private aid.
19945	BRANFORD REEF LIGHT	41 13.3 72 48.4	FI W 6^s	30	7	NR on skeleton tower.	
19950	<i>Townsend Ledge Lighted Bell Buoy 10A</i> Off south edge of ledge.		FI R 4^s		4	Red.	
19955	<i>New Haven Dumping Ground Lighted Buoy SP</i>	41 09.0 72 53.2	FI Y 4^s		5	Yellow.	
19960	<i>CLIS Dumping Ground Lighted Buoy CDA</i>	41 09.3 72 53.4	FI Y 4^s		5	Yellow.	Maintained from June 1 to Oct. 1. Private aid.
19965 22425	<i>New Haven Harbor Lighted Whistle Buoy NH</i>	41 12.1 72 53.8	Mo (A) W		6	Red and white stripes with red spherical topmark.	
19970 22470	Southwest Ledge Light	41 14.1 72 54.7	FI R 5^s	57	13	White octagonal house on brown cylindrical pier.	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light of reduced intensity when main light is extinguished.
19975 22485	NEW HAVEN LIGHT	41 13.3 72 56.6	FI W 4^s	35	7	NG on pipe tower.	
19980	Pond Point Shoal Buoy 12 On south point of shoal.					Red nun.	
19985	<i>Charles Island Lighted Bell Buoy 16</i> South point of shoal.	41 11.0 73 03.1	FI R 4^s		5	Red.	
19990	Stratford Point Light	41 09.1 73 06.2	FI (2) W 20^s	52	16	White conical tower, brown band midway of height.	HORN: 2 blasts ev 30 ^s (2 ^s bl-2 ^s si-2 ^s bl-24 ^s si). Emergency light (FI W 6 ^s) of reduced intensity when main light is extinguished.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut and New York) - First District							
N/W							
LONG ISLAND SOUND (Eastern Part) (Chart 12354)							
19991	Stratford Point Radiobeacon	41 09.1 73 06.2	SP (••• -••••)		20		FREQ: 316 kHz, III, VI. Antenna 150 feet, 010° from light tower.
19995	Stratford Point Buoy 20 On south side of Point No Point Shoal.	41 07.8 73 07.5				Red nun.	
20000	<i>Stratford Point Lighted Bell Buoy 18</i>		FI R 6^s		4	Red.	Removed when endangered by ice.
Stratford Shoal							
20005	- Buoy 1	41 04.2 73 05.2				Green can.	
20010	- Buoy 3 Off north point of shoal.					Green can.	
20015	- (Middle Ground) Light	41 03.6 73 06.1	FI W 5^s	60	13	Gray, granite octagonal tower projection from house on pier.	HORN: 1 blast ev 15 ^s (2 ^s bl).
20020	- <i>Middle Ground Lighted Bell Buoy 2</i> South of shoal.		FI R 4^s		4	Red.	
20025	Mount Misery Shoal Buoy 11 On northeast point of shoal.					Green can.	
LONG ISLAND SOUND (Western Part) (Chart 12363)							
20030	Old Field Point Light	40 58.6 73 07.1	AI R G 24^s R fl 12 ^s ec G fl 12 ^s ec	74	14	Black skeleton tower adjacent to old tower.	
20031	Old Field Point Radiobeacon	40 58.6 73 07.1	OP (---•---•)		20		FREQ: 316 kHz, II, V.
20035	Old Field Point Gong Buoy 11A Off north point of shoal.					Green.	
20040	Penfield Reef Light		FI R 6^s	51	18	White tower on granite dwelling on pier.	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
20045	<i>Pine Creek Point Lighted Bell Buoy 22</i> On south point of shoal.		FI R 4^s		4	Red.	
20050	<i>Cockenoe Island Shoal Lighted Bell Buoy 24</i> Southeast of shoal.	41 04.5 73 19.8	FI R 2.5^s		4	Red.	Removed when endangered by ice.
20055	<i>Norwalk Islands Lighted Bell Buoy 26</i> Off southeast end of shoal.	41 03.7 73 22.0	FI R 4^s		4	Red.	Removed when endangered by ice.
20060	<i>Eatons Neck Point Lighted Gong Buoy 11B</i> On north end of shoal.		FI G 4^s		5	Green.	Replaced by smaller LIB when endangered by ice.
20065	Eatons Neck Lump Buoy E On east side of shoal.					Green and red bands; can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut and New York) - First District							
N/W LONG ISLAND SOUND (Western Part) (Chart 12363)							
20250	Stepping Stones Light On outer end of reef.	40 49.5 73 46.5	F G	46	11	Red brick on granite pier; white band on southwest face of pier.	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
20255	Locust Point Buoy 46A					Red nun.	
20260	<i>Throgs Neck Lighted Bell Buoy 48</i> Marks southern end of shoal.		FI R 4^s		4	Red.	
20265	Throgs Neck Light	40 48.3 73 47.5	F R	60	11	NB on tower.	
WATCH HILL TO NEW HAVEN HARBOR (Chart 12372)							
North Channel (Saybrook to New Haven)							
20275	Hatchett Reef Buoy 1 On northeast point of reef.	41 16.2 72 15.7				Green can.	
20280	<i>Cornfield Point Shoal Lighted Bell Buoy 2</i> South of shoal.	41 15.0 72 23.1	FI R 4^s		4	Red.	
20285	Hen and Chickens Buoy On southeast edge of shoal.					White can with orange bands and diamond worded ROCKS.	
Old Saybrook Rock							
20290	- Regulatory Buoy A	41 15.7 72 24.1				White can with orange bands and diamond worded ROCKS.	Private aid.
20295	- Regulatory Buoy B					White can with orange bands and diamond worded ROCKS.	Private aid.
20300	- Regulatory Buoy C					White can with orange bands and diamond worded ROCKS.	Private aid.
20305	- Regulatory Buoy D					White can with orange bands and diamond worded ROCKS.	Private aid.
North Channel (Saybrook to New Haven)							
20310	INDIAN TOWN EAST BREAKWATER LIGHT		FI W 2^s	28		On pile.	Maintained from Apr. 15 to Nov. 15. Private aid.
20315	Crane Reef Buoy 4 On south side of reef.					Red nun.	
20320	Duck Island Reef Buoy 6 On south end of reef.					Red nun.	
20325	Stone Island Reef Buoy 8 On south side of reef.					Red nun.	
20330	Hammonasset Point Reef Buoy 10 On southwest side of shoal.					Red nun.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut and New York) - First District							
N/W							
WATCH HILL TO NEW HAVEN HARBOR (Chart 12372)							
North Channel (Saybrook to New Haven)							
20335	Charles Reef Buoy 14 Off south end of reef.					Red nun.	
20340	<i>Falkner Island Reef</i> Lighted Gong Buoy 15 North of shoal.		FI G 4 ^s		4	Green.	
20345	Indian Reef Southwest Buoy 16 On south side of shoal.					Red nun.	
20350	Chimney Corner Reef Buoy 20 South side of reef.					Red nun.	
20355	JOSHUA POINT LIGHT		Iso W 6 ^s	10		Gray cement base.	Visible from 345.5° to 054° with higher intensity beam toward sound. Maintained from June 1 to to Oct. 15. Private aid.
20360	<i>Goose Rocks Shoal</i> Lighted Bell Buoy 22 Marks southwest end of shoal.		FI R 4 ^s		4	Red.	
20365	<i>Browns Reef Lighted Bell</i> Buoy 26 South of reefs.		FI R 4 ^s		5	Red.	
20370	<i>Negro Heads Lighted</i> Buoy 28 On south end of reef.		FI R 4 ^s		4	Red.	Replaced by nun when endangered by ice.
20375	Five Foot Rock Buoy 32 On southwest side of rock.					Red nun.	
20380	<i>Cow and Calf Lighted</i> Bell Buoy 34	41 14.3 72 50.5	FI R 2.5 ^s		4	Red.	
20385	Round Rock Buoy 36 On south side of shoal.					Red nun.	
SHELTER ISLAND SOUND AND PECONIC BAYS							
(Chart 12358)							
South Side							
Mattituck Inlet							
20390	- Buoy 1					Green can.	
20395	- Gong Buoy 3A					Green.	
LONG ISLAND SOUND (Eastern Part) (Chart 12354)							
South Side							
Mattituck Inlet							
20400	- BREAKWATER LIGHT MI	41 00.9 72 33.7	FI W 4 ^s	25	6	NR on skeleton tower.	
20405	- Buoy 2					Red nun.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut and New York) - First District							
N/W							
LONG ISLAND SOUND (Eastern Port) (Chart 12354)							
South Side							
Mattituck Inlet							
20410	- Buoy 3					Green can.	
Mattituck Creek							
20415	- Buoy 1					Green can.	Maintained from May 1 to Oct. 31. Private aid.
20420	- Buoy 3					Green can.	Maintained from May 1 to Oct. 31. Private aid.
20425	- Buoy 5					Green can.	Maintained from May 1 to Oct. 31. Private aid.
Jacobs Point							
20430	- PLATFORM LIGHTS (4)	41 00.0 72 38.8	Q W	25		On platform.	HORN: 1 blast ev 20 ^s (2 ^s bl). Lights flash in unison. Private aids.
20435	- Rock Buoy 3					Black can.	Private aid.
20440	- Shoal Buoy 5					Black can.	Private aid.
20442	- <i>Aquaculture Lighted Buoys (4)</i>		FI W 2^s			White with orange bands worded LONG LINE.	Private aid.
20445	Roanoke Point Shoal Buoy 5 On northwest side of shoal.	41 00.2 72 42.3				Green can.	
South Side (Mattituck to Mt. Sinai)							
20450	Herod Point Shoal Buoy 7 On north point of shoal.					Green can.	
20455	Rocky Point Buoy 9 On north end of shoal.					Green can.	

LONG ISLAND SOUND (Connecticut) - First District

APPROACHES TO NEW LONDON HARBOR (Chart 13212)							
Pine Island Channel							
20460	Vixen Ledge Buoy VL Marks south side of ledge.	41 18.4 72 02.9				Red and green bands; nun.	
20465	<i>Pine Island Channel Lighted Bell Buoy 2</i> On southwest point of shoal.		FI R 4^s		4	Red.	
20470	Pine Island Channel Buoy 3 On north side of reef.					Green can.	
20475	<i>Pine Island Lighted Buoy 1</i> On southern tip of shoal.	41 18.9 72 03.7	FI G 4^s		3	Green.	Removed when endangered by ice.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
APPROACHES TO NEW LONDON HARBOR (Chart 13212)							
Pine Island Channel							
20477	Pine Island Channel Avery Point Breakwater Light 1A Marks end of breakwater.	41 18.9 72 03.6	Q G			SG on spindle.	Private aid.
20480	Pine Island Buoy 2 On northern tip of shoal.					Red nun.	
West Approach							
20485	Little Goshen Reef Buoy 3 On south point of shoal.	41 17.3 72 06.7				Green can.	
20490	Goshen Ledge Buoy 5 On south end of ledge.					Green can.	
20495	Rapid Rock Buoy R On southeast side of rock					Green and red bands; can.	
20500	Cormorant Rock Ledge Buoy 7 On point of ledge east of rock.					Green can.	
20505	Sarah Ledge Buoy SL					Green and red bands; can.	
20510	Dumping Ground Lighted Buoy NL	41 15.8 72 05.0	FI Y 2.5 ^s		5	Yellow.	
NEW LONDON HARBOR AND VICINITY (Chart 13213)							
New London Harbor							
20515	- Channel Lighted Buoy 2	41 17.6 72 04.7	FI R 2.5 ^s		4	Red.	
20520	- Channel Lighted Buoy 1	41 17.6 72 04.8	FI G 2.5 ^s		4	Green.	
20525	- Channel Lighted Buoy 3		FI G 4 ^s		4	Green.	
20530	- Channel Buoy 4	41 18.5 72 04.8				Red nun.	
20535	Black Ledge Buoy 2					Red nun.	
20540	Black Ledge Buoy 4					Red nun.	
20545	Black Ledge Buoy 6					Red nun.	
20550	New London Ledge Light On west side of Southwest Ledge.	41 18.3 72 04.7	FI (3) W R 30 ^s 0.3 ^s W fl 4.7 ^s ec 0.3 ^s W fl 4.7 ^s ec 0.3 ^s W fl 9.7 ^s ec 0.3 ^s R fl 9.7 ^s ec	58 W 17 R 14		Red brick dwelling on square pier.	HORN: 2 blast ev 20 ^s (2 ^s bl-2 ^s si-2 ^s bl-14 ^s si). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
20555	New London Dumping Ground Lighted Buoy NDA	41 16.4 72 04.3	FI Y 4 ^s			Yellow.	Maintained from Oct. 1 to June 1. Private aid.
20556	New London Research Lighted Buoy (ODAS)	41 15.8 72 04.0	FI Y 4 ^s			Yellow.	Private aid.
20560	Frank Ledge Buoy F On north side of ledge.					Green and red bands; can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W NEW LONDON HARBOR AND VICINITY (Chart 13213)							
New London Harbor							
20565	- Light	41 19.0 72 05.4	Iso W 6^s (R sector)	89	W 17 R 14	White octagonal pyramidal tower.	Red from 000° to 041°. Covers Sarah Ledge and shoals westward.
20570	- Channel Lighted Buoy 5		Fl G 2.5^s		4	Green.	
20575	- Channel Lighted Buoy 6		Fl R 2.5^s		4	Red.	
20580	- LOWER WHARF LIGHT	41 20.1 72 04.9	Fl R 15^s	15		Pile.	Private aid.
20585	- UPPER WHARF LIGHT		Fl R 15^s	15		Pile.	Private aid.
20587	Groton Outfall Lighted Buoy	41 20.2 72 04.9	Iso (2) W			White with orange bands.	Private aid.
20590	- Channel Lighted Buoy 7	41 20.3 72 05.1	Fl G 6^s		5	Green.	
20595	- Channel Buoy 8					Red nun.	
20600	Powder Island Buoy 1 On north side of Melton Ledge.					Green can.	
20605	Fort Trumbull Outfall Buoy	41 20.5 72 05.2				White can with orange bands and diamond worded OUTFALL.	Private aid.
20610	GRAVING DOCK SOUTH LIGHT		Q R	22			Private aid.
20615	GRAVING DOCK CENTER LIGHT		Q R	22			Private aid.
20620	GRAVING DOCK NORTH LIGHT		Q R	22			Private aid.
20625	GRAVING DOCK 3 SOUTH LIGHT		Q R	18			Private aid.
20630	GRAVING DOCK 3 NORTH LIGHT		Q R	18			Private aid.
20635	- Buoy 9					Green can.	
20640	- Buoy 11					Green can.	
20645	- Channel Lighted Buoy 13	41 21.1 72 05.2	Fl G 4^s		4	Green.	
20650	- Buoy 14					Red nun.	
20655	STATE PIER LIGHT		Iso G 6^s	10		Mooring island.	Private aid.
20660	- Buoy 15					Green can.	
20665	- RANGE FRONT LIGHT	41 21.8 72 05.3	Iso R 6^s	36		On southeast bridge abutment of railroad bridge.	Light obscured from 040° to 310° with higher intensity beam on channel line.
20670	- RANGE REAR LIGHT 3,814 yards, 354° from front light.		F G	80		Guyed tower.	Visible on rangeline only. Note: Does not mark center of channel at far end of range.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
NEW LONDON HARBOR AND VICINITY (Chart 13213)							
Upper Thames River							
<i>Channel buoys located 30 feet outside channel limit.</i>							
20860	INDIAN HILL LIGHT 29		FI G 4 ^s	9	4	SG on skeleton tower on concrete base.	
20865	PRIDE PIER LIGHT 30		FI R 4 ^s	20	4	TR on pile.	
20870	- Channel Buoy 31					Green can.	
20875	BURNT HOUSE PIER LIGHT 32	41 29.7 72 04.8	FI R 2.5 ^s	16	4	TR on pile.	
20880	PERCHE ROCK LIGHT 33 On rock.	41 29.8 72 05.0	FI G 4 ^s	16	4	SG on pile.	
20885	- Channel Buoy 34					Red nun.	
20890	- Channel Buoy 35					Green can.	
20895	SAND PIER LIGHT 37		FI G 2.5 ^s	16	4	SG on pile.	
20900	- Channel Buoy 38					Red nun.	
20905	LOWER COAL DOCK LIGHT 40		FI R 4 ^s	15	3	TR on skeleton tower on concrete base.	
20910	- Channel Buoy 41	41 30.7 72 04.8				Green can.	
20915	- Channel Buoy 43					Green can.	
NIANTIC BAY AND VICINITY (Chart 13211)							
20920	Bartlett Reef North End Buoy 1	41 17.8 72 08.5				Green can.	
20925	Two Tree Island Shoal Buoy 3					Green can.	
20930	Flat Rock Buoy 2 On southwest side of rock					Red nun.	
20935	High Rock Buoy H					Green and red bands; can.	
20940	White Rock Lighted Bell Buoy 4		FI R 4 ^s		4	Red.	
20945	Threefoot Rock Buoy 5 On east side of rock.					Green can.	
20950	Black Rock Buoy 6 On west side of rock.					Red nun.	
20955	CRESCENT PARK BREAKWATER LIGHT		FI W 6 ^s	8		On pile.	Maintained from Apr. 15 to Nov. 15. Private aid.
20960	Crescent Beach Daybeacon					NW on pile.	Private aid.
20965	Wigwam Rock Danger Buoy					White with orange bands worded ROCKS.	Removed when endangered by ice.
Niantic River							
<i>The position of buoys frequently shifted with changing conditions.</i>							
20970	- Channel Daybeacon 1					SG on pile.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) – First District							
N/W NIANTIC BAY AND VICINITY (Chart 13211)							
Niantic River							
<i>The position of buoys frequently shifted with changing conditions.</i>							
20975	- Channel Buoy 3					Green can.	
20980	- Channel Buoy 4					Red nun.	
20985	- Channel Buoy 6					Red nun.	Removed when endangered by ice.
20990	- Channel Daybeacon 7					SG on pile.	
20995	- Channel Daybeacon 8					TR on pile.	
21005	- Channel Buoy 10					Red nun.	Removed when endangered by ice.
21010	- Channel Buoy 11					Green can.	Removed when endangered by ice.
21015	- Channel Buoy 12					Red nun.	
21020	- Channel Daybeacon 13					SG on pile.	
21025	- Channel Daybeacon 14					TR on pile.	
21030	- Channel Buoy 15					Green can.	Removed when endangered by ice.
21035	- Channel Buoy 16					Red nun.	Removed when endangered by ice.
21040	- Channel Daybeacon 17					SG on pile.	
21045	- Channel Buoy 18					Red nun.	Removed when endangered by ice.
21050	- Channel Buoy 19					Green can.	Removed when endangered by ice.
21055	- Channel Buoy 21					Green can.	Removed when endangered by ice.
21060	- Channel Buoy 21A					Green can.	Removed when endangered by ice.
21065	- Channel Buoy 22					Red nun.	Removed when endangered by ice.
21070	- Channel Buoy 22A					Red nun.	Removed when endangered by ice.
21075	- Channel Buoy 23					Green can.	Removed when endangered by ice.
21080	- Channel Daybeacon 24					TR on pile.	
21085	- Channel Buoy 25					Green can.	Removed when endangered by ice.
21090	- Channel Buoy 26					Red nun.	Removed when endangered by ice.
21095	- Channel Daybeacon 27					SG on pile.	
21100	- Channel Daybeacon 28					TR on pile.	
21105	- Channel Buoy 29					Green can.	Removed when endangered by ice.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W NIANTIC BAY AND VICINITY (Chart 13211)							
Niantic River							
<i>The position of buoys frequently shifted with changing conditions.</i>							
21110	- Channel Buoy 30					Red nun.	Removed when endangered by ice.
Smith Cove							
21115	- Daybeacon 1	41 20.3 72 11.1				SB on pile.	Private aid.
21120	- Daybeacon 2					TR on pile.	Private aid.
21125	- Daybeacon 4					TR on pile.	Private aid.
21130	- Daybeacon 6					TR on pile.	Private aid.
21135	- Daybeacon 8					TR on pile.	Private aid.
21140	- Daybeacon 9					SB on pile.	Private aid.
Pattaganset River							
21145	Blackboys Rocks Buoy 2 Marks southside of rock.					Red nun.	
21150	Long Rock Buoy 4 Marks southwest side of rocky shoal.					Red nun.	
21155	Sea! Rock Buoy 5 Marks south end of rock.					Green can.	
CONNECTICUT RIVER - LONG ISLAND SOUND TO DEEP RIVER (Chart 12375)							
Connecticut River							
21160 19880	Saybrook Breakwater Light	41 15.8 72 20.6	Fl G 6 ^s	58	11	White conical tower on brown cylindrical pier. 49	HORN: 1 blast ev 30 ^s (3 ^s bl) Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
21161 19881	Saybrook Breakwater Radiabeacon	41 15.8 72 20.6	SB (••• -•••)		10		FREQ: 320 kHz. Antenna at light tower.
21165	- Buoy 2	41 15.8 72 20.5				Red nun.	
21170	Saybrook Daybeacon	41 16.1 72 20.3				White globe on granite structure.	
21175	- Buoy 4					Red nun.	
21180	Lynde Point Light	41 16.3 72 20.6	F W	71	14	White stone tower.	
21185	- Lighted Buoy 5		Fl G 4 ^s		3	Green.	Replaced by can when endangered by ice.
21190	- Buoy 6 Marks west edge of shoal					Red nun.	
21195	- Buoy 7 Marks east edge of shoal					Green can.	

(1) No	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
BODKIN ROCK TO HARTFORD (Chart 12377)							
Connecticut River							
22015	NORTH OIL DOCK LIGHT	41 44.3 72 38.5	F R	26		On pile	Private aid.
22020	- LIGHT 142		FI R 4 ^s	34	4	TR on skeleton tower.	
22025	HARTFORD JETTY LIGHT 143		FI G 4 ^s	34	4	SG on skeleton tower.	
22029	Salt Island Rock Buoy	41 16.5 72 26.4				White with orange band; can.	Maintained from Apr. 1 to Nov. 30. Private aid.
22030	Westbrook Harbor Buoy Marks south side of Lobster Rock	41 16.1 72 26.5				Red and green bands; nun.	
22031	West Beach Shoal Buoy	41 16.3 72 27.2				White with orange band; can.	Maintained from Apr. 1 to Nov. 30. Private aid.
22032	Menunketesuck Island Shoal Buoy	41 15.6 72 27.6				White with orange band; can.	Maintained from Apr. 1 to Nov. 30. Private aid.
22034	Menunketesuck Island Rock Buoy	41 15.7 72 28.0				White with orange band; can.	Maintained from Apr. 1 to Nov. 30. Private aid.
DUCK ISLAND TO MADISON REEF (Chart 12374)							
Duck Island Roads							
22035	DUCK ISLAND NORTH BREAKWATER LIGHT	41 15.6 72 28.5	FI W 4 ^s	22	7	NR on skeleton tower.	
22040	DUCK ISLAND WEST BREAKWATER LIGHT 2DI	41 15.4 72 29.1	FI R 4 ^s	25	5	TR on skeleton tower.	
Patchogue River							
22045	- BREAKWATER LIGHT 3A	41 16.1 72 28.5	FI G 4 ^s	21	4	SG on skeleton tower.	
22050	- Channel Lighted Buoy 2	41 15.9 72 28.4	FI R 4 ^s		4	Red.	Removed when endangered by ice.
22055	- Channel Buoy 3	41 16.0 72 28.4				Green can.	
22060	- Channel Buoy 4	41 16.1 72 28.4				Red nun.	
22065	- Channel Buoy 5					Black can.	Private aid.
22066	Menunketesuck River Junction Buoy M					Green and red bands; can.	Maintained from Apr. 1 to Nov. 30. Private aid.
22070	- Channel Buoy 6					Red nun.	Private aid.
22075	- Channel Daybeacon 7					SG on pile.	Private aid.
22080	- Channel Daybeacon 8					TR on pile.	Private aid.
22085	- Channel Daybeacon 10					TR on pile.	Private aid.
22090	KELSEY POINT BREAKWATER LIGHT	41 14.6 72 30.5	FI W 2.5 ^s	33	7	NG on skeleton tower.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
DUCK ISLAND TO MADISON REEF (Chart 12374)							
Clinton Harbor							
22095	- Rock Buoy C West of rock.					White nun with orange bands worded ROCKS.	
22100	- Lighted Buoy 3		Fl G 4s		4	Green.	Removed when endangered by ice.
22105	- Radiobeacon	41 16.0 72 31.2	CL (-...-...)		20		FREQ: 306 kHz, I, IV.
<i>Channel buoys located 20 feet outside channel limit.</i>							
22110	- Channel Buoy 6					Red nun.	
22115	- Channel Buoy 7					Green can.	
22120	- Channel Buoy 8	41 15.8 72 31.5				Red nun.	
22125	- Channel Buoy 9					Green can.	
22130	- Channel Buoy 11					Green can.	
22135	- Channel Buoy 11A					Green can.	
22140	- Channel Buoy 12					Red nun.	Maintained from May 1 to Dec. 1. Private aid.
22145	- Channel Buoy 13					Green can.	Maintained from May 1 to Dec. 1. Private aid.
22150	- Channel Buoy 14					Red nun.	Maintained from May 1 to Dec. 1. Private aid.
22155	- Channel Buoy 16					Red nun.	Maintained from May 1 to Dec. 1. Private aid.
Hammonasset River							
22156	- Daybeacon 1H	41 16.0 72 32.1				SG on pile.	Private aid.
22156.1	- Daybeacon 2H					TR on pile.	Private aid.
22156.2	- Daybeacon 3H					SG on pile.	Private aid.
22156.3	- Daybeacon 4H					TR on pile.	Private aid.
22156.4	- Daybeacon 5H					SG on pile.	Private aid.
22156.5	- Daybeacon 6H					TR on pile.	Private aid.
22156.6	- Daybeacon 8H					TR on pile.	Private aid.
22156.7	- Daybeacon 9H					SG on pile.	Private aid.
22156.8	- Daybeacon 10H					TR on pile.	Private aid.
22156.9	- Daybeacon 11H					SG on pile.	Private aid.
22157	- Daybeacon 12H					TR on pile.	Private aid.
22157.1	- Daybeacon 13H					SG on pile.	Private aid.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
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LONG ISLAND SOUND (Connecticut) - First District

N/W
DUCK ISLAND TO MADISON REEF (Chart 12374)

Hammonasset River

22157.2	- Daybeacon 14H					TR on pile.	Private aid.
22157.3	- Daybeacon 15H					SG on pile.	Private aid.
22157.4	- Daybeacon 16H					TR on pile.	Private aid.
22157.5	- Daybeacon 17H					SG on pile.	Private aid.
22157.6	- Daybeacon 18H					TR on pile.	Private aid.
22157.7	- Daybeacon 19H					SG on pile.	Private aid.
22157.8	- Daybeacon 21H					SG on pile.	Private aid.
22157.9	- Daybeacon 22H					TR on pile.	Private aid.
22158	- Daybeacon 23H					SG on pile.	Private aid.
22158.1	- Daybeacon 24H					TR on pile.	Private aid.
22158.2	- Daybeacon 25H					SG on pile.	Private aid.
22158.3	- Daybeacon 26H					TR on pile.	Private aid.
22158.4	- Daybeacon 27H					SG on pile.	Private aid.
22158.5	- Daybeacon 28H					TR on pile.	Private aid.
22158.6	- Daybeacon 29H					SG on pile.	Private aid.
22158.7	- Daybeacon 30H					TR on pile.	Private aid.
22158.8	- Daybeacon 31H					SG on pile.	Private aid.
22158.9	- Daybeacon 32H					TR on pile.	Private aid.
22159	- Daybeacon 33H					SG on pile.	Private aid.
22159.1	- Daybeacon 34H					TR on pile.	Private aid.
22159.2	- Daybeacon 35H					SG on pile.	Private aid.
22159.3	- Daybeacon 36H					TR on pile.	Private aid.
22159.4	- Daybeacon 37H					SG on pile.	Private aid.
22159.5	- Daybeacon 38H					TR on pile.	Private aid.
22159.6	- Daybeacon 39H					SG on pile.	Private aid.
22159.7	- Daybeacon 40H					TR on pile.	Private aid.
22159.8	- Daybeacon HR	41 15.9 72 32.8				Square daymark, green and red bands.	Private aid.

GUILFORD HARBOR TO FARM RIVER (Chart 12373)

Guilford Harbor

22160	- Lighted Bell Buoy 4	41 15.0 72 39.2	FI R 4 ^s		4	Red.	Replaced by nun when endangered by ice.
22165	Indian Reef Buoy 1 South of reef.	41 14.6 72 40.5				Green can.	
22170	- Buoy 3 On southeast side of Netties Reef.					Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
GUILFORD HARBOR TO FARM RIVER (Chart 12373)							
Guilford Harbor							
22175	- Buoy 5 On east end of reef.					Green can.	
22180	- Channel Lighted Buoy 7		Fl G 4^s		3	Green.	Removed when endangered by ice.
22185	- Channel Buoy 9					Green can.	
22190	- Channel Buoy 10					Red nun.	
22195	- Channel Buoy 11					Green can.	
22200	- Channel Buoy 12					Red nun.	
22205	- Channel Buoy 13					Green can.	
22210	- Channel Buoy 14					Red nun.	
West River Entrance							
22211	- Buoy 1W	41 15.4 72 39.9				Green can.	Private aid.
22211.5	- Buoy 2W	41 15.4 72 39.9				Red nun.	Private aid.
22212	- Buoy 3					Green can.	Private aid.
22212.5	- Buoy 4					Red nun.	Private aid.
22213	- Buoy 5					Green can.	Private aid.
22213.5	- Buoy 6					Red nun.	Private aid.
22214	- Buoy 7					Green can.	Private aid.
22214.5	- Buoy 8					Red nun.	Private aid.
22214.6	WEST RIVER RANGE FRONT LIGHT	41 16.1 72 40.7	Q W	16		KRW on pole.	Visible on rangeline only. Private aid.
22214.7	WEST RIVER RANGE REAR LIGHT 215 yards, 321.3° from front light.		Fl W 6^s	30		KRW on pile.	Visible on rangeline only. Private aid.
The Thimbles							
Thimble Shoals							
22215	- Buoy 4 At southwest edge of rocky shoal.					Red nun.	
22220	- Buoy 6					Red nun.	
22225	- Buoy 8					Red nun.	
22230	- Buoy 10					Red nun.	
22235	- Buoy 11 On east side of shoal.					Green can.	
Stony Creek							
22240	- Buoy 1	41 15.6 72 45.7				Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
GUILFORD HARBOR TO FARM RIVER (Chart 12373)							
The Thimbles							
Stony Creek							
22245	- Buoy 3					Green can.	
22250	- Buoy 4					Red nun.	
22260	- Buoy 5	41 15.9 72 45.2				Green can.	
The Thimbles							
22270	Commander Rocks Buoy 2CR Marks southwest end of rocks.					Red nun.	
22275	High Island East Shoal Buoy 1 South of shoal.					Green can.	
22280	East Reef Buoy 1 Marks east side of reef.	41 13.9 72 45.8				Green can.	
22285	Wheaton Reef Buoy 3 On north side of reef.					Green can.	
22290	Inner Reef North Buoy 5 Marks northeast side of rock.	41 14.5 72 46.1				Green can.	
22295	Gangway Rock Buoy 1 Marks southeast side of rock.					Green can.	
22300	Northwest Reef Buoy 2NW Marks southwest side of reef.					Red nun.	
22305	Hookers Rock Buoy 3 Southeast side of rock.					Green can.	
22310	Inner Reef South Buoy 4 Marks southwest end of reef.					Red nun.	
22315	<i>Pine Orchard Approach</i> <i>Lighted Buoy 4A</i> Southeast of Hookers Rock.		FI R 4 ^s		4	Red.	Replaced by nun when endangered by ice.
22320	Pork Rocks Buoy 5 East of rocks.					Green can.	
22325	Dick Rocks Buoy 6 West of rocks.					Red nun.	
22330	<i>Pine Orchard Approach</i> <i>Lighted Buoy 8</i> Marks southwest edge of rocks.	41 15.3 72 46.2	FI R 4 ^s		4	Red.	Removed when endangered by ice.
Duck Island Roads							
22342	JUNIPER POINT OBSTRUCTION LIGHTS (3)	41 15.8 72 46.0	Q Y	11		On dolphins.	Private aids.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W							
GUILFORD HARBOR TO FARM RIVER (Chart 12373)							
Duck Island Roads							
22345	QUARRY RANGE FRONT LIGHT	41 15.9 72 46.0	F R		20	Daymark consists of white arrows, vertically arranged.	Private aid.
22350	QUARRY RANGE MIDDLE LIGHT 40 yards, 028° from front light.		F R		27	Daymark consists of white arrows, vertically arranged.	Private aid.
22355	Quarry Range Rear Daybeacon					White diamond daymark with red center ball on skeleton structure.	Private aid.
Branford Harbor							
22360	<i>Blyn Rock Lighted Buoy 2</i> On south side of rock.	41 14.8 72 49.9	FI R 4 ^s		3	Red.	Removed when endangered by ice.
22365	Bird Rock Buoy 4 On west side of reef.					Red nun.	
22370	Lovers Island Rock Buoy 5 East of rock.					Green can.	
22375	Little Mermaid Rock Buoy 6 West of rock.					Red nun.	
22380	BIG MERMAID LIGHT 7	41 15.4 72 49.7	FI G 4 ^s	28	5	SG on skeleton tower.	Higher intensity beam up and down channel.
Farm River							
22385	- Approach Buoy 1					Green can.	
22390	- Approach Buoy 2					Red nun.	
NEW HAVEN HARBOR (Chart 12371)							
New Haven Harbor							
22395	- East Entrance Buoy 1 On northeast side of shoal.	41 14.2 72 53.7				Green can.	
22400	- East Entrance Buoy 2 On southwest side of shoal.					Red nun.	
22405	- East Entrance Buoy 4 On southwest side of shoal.					Red nun.	
22410	- East Entrance Buoy 5 On northeast end of Old Head Reef.					Green can.	
22415	Adams Fall Buoy A On southwest side of shoal.					Red and green bands; nun.	
22420	- East Entrance Channel Buoy 6 On southwest end of Lighthouse Point Shoal.					Red nun.	
22425 19965	- <i>Lighted Whistle Buoy NH</i>	41 12.1 72 53.8	Mo (A) W		6	Red and white stripes with red spherical topmark.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (Connecticut) - First District							
N/W NEW HAVEN HARBOR (Chart 12371)							
New Haven Harbor							
22430	- OUTER CHANNEL RANGE FRONT LIGHT	41 15.7 72 56.1	F G	35		White skeleton tower with concrete base.	Higher intensity on rangeline.
22435	- OUTER CHANNEL RANGE REAR LIGHT 800 yards, 333.6° from front light.		F G	65		White skeleton tower with concrete base.	Higher intensity on rangeline.
22440	- Channel Lighted Gong Buoy 1		FI G 2.5^s		4	Green.	
22445	- Buoy 2					Red nun.	
22450	- Buoy 3					Green can.	
22455	- Channel Lighted Buoy 4	41 13.7 70 54.7	FI R 4^s		4	Red.	
22460	- Channel Lighted Bell Buoy 6		FI R 2.5^s		4	Red.	Replaced by LIB of reduced intensity when endangered by ice.
22465	- Channel Lighted Buoy 7		FI G 2.5^s		4	Green.	Replaced by smaller LIB of reduced intensity when endangered by ice.
22470 19970	Southwest Ledge Light	41 14.1 72 54.7	FI R 5^s	57	13	White octagonal house on cylindrical pier.	HORN: 1 blast ev 15 ^s (2 ^s bl). Emergency light of reduced intensity when main light is extinguished.
22475	NEW HAVEN MIDDLE BREAKWATER EAST END LIGHT		FI G 4^s	43	4	NG on skeleton tower.	
22480	NEW HAVEN MIDDLE BREAKWATER WEST END LIGHT		FI R 4^s	38	4	NR on skeleton tower.	
22485 19975	NEW HAVEN LIGHT	41 13.3 72 56.6	FI W 4^s	35	7	NG on skeleton tower.	
22490	NEW HAVEN WEST BREAKWATER WEST END LIGHT 2	41 13.5 72 57.4	FI R 6^s	29	4	TR on skeleton tower.	
22495	- Channel Lighted Buoy 8		Q R		4	Red.	Replaced by smaller LIB of reduced intensity when endangered by ice.
22500	- Channel Lighted Buoy 9		FI G 4^s		4	Green.	Replaced by can when endangered by ice.
22505	- Channel Buoy 9A					Green can.	
22510	- Channel Buoy 10					Red nun.	
22515	- Channel Lighted Buoy 10A		FI R 2.5^s		4	Red.	Replaced by smaller LIB of reduced intensity when endangered by ice.
22520	- Channel Buoy 12					Red nun.	
22525	- Channel Lighted Buoy 11		FI G 4^s		4	Green.	Replaced by can when endangered by ice.
22530	- Channel Buoy 13					Green can.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (New York) – First District							
N/W							
HEMPSTEAD HARBOR TO TALLMAN ISLAND (Chart 12366)							
City Island							
Hutchinson River							
24440	- Buoy 6					Red nun.	
24445	- Buoy 7					Green can.	
PORT JEFFERSON AND MOUNT SINAI HARBORS (Chart 12362)							
Mount Sinai Harbor							
24460	Mount Sinai Approach Buoy M					Red and white stripes; sphere.	
24465	MOUNT SINAI BREAKWATER LIGHT	40 57.9 73 02.6	FI G 5 ^s	20		Concrete pedestal.	Private aid.
24470	- West Breakwater Daybeacon 2	40 57.9 73 02.7				TR on pile.	Private aid.
24475	- Buoy 1					Black can.	Private aid.
24480	- Buoy 2A					Red nun.	Private aid.
24485	- Buoy 3					Black can.	Private aid.
24490	- Buoy 4					Red nun.	Private aid.
24495	- Buoy 5					Black can.	Private aid.
24500	- Buoy 6					Red nun.	Private aid.
24505	- Buoy 8					Red nun.	Private aid.
24510	- Buoy 10					Red nun.	Private aid.
24515	- Buoy 12					Red nun.	Private aid.
Port Jefferson Harbor							
24520	<i>Port Jefferson Approach Lighted Whistle Buoy PJ</i>	40 59.3 73 06.4	Mo (A) W		5	Red and white stripes with red spherical topmark.	
24525	- <i>Entrance Lighted Buoy 1</i>	40 58.4 73 05.6	FI G 2.5 ^s		4	Green.	
24530	PORT JEFFERSON EAST BREAKWATER LIGHT	40 58.3 73 05.5	FI W 4 ^s	35	7	NG on skeleton tower.	
24535	- <i>Entrance Lighted Bell Buoy 2</i>		FI R 2.5 ^s		4	Red.	
24540	PORT JEFFERSON WEST BREAKWATER LIGHT 2A		FI R 4 ^s	26	5	TR on skeleton tower.	
24545	LIGHTING COMPANY BOOM LIGHT		F R	71			Private aid.
24550	- RANGE FRONT LIGHT	40 56.9 73 04.3	Q R	20		KRW on pile.	
24555	- RANGE REAR LIGHT 225 yards, 146° from front light.		F R	32		KRW on pile.	
24560	- Buoy 4					Red nun.	

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
LONG ISLAND SOUND (New York) - First District							
N/W							
PORT JEFFERSON AND MOUNT SINAI HARBORS (Chart 12362)							
Port Jefferson Harbor							
24565	- Lighted Bell Buoy 5		FI G 4 ^s		3	Green.	
24566	- Buoy 7					Green can.	
24567	- Buoy 8					Red nun.	
24568	- Buoy 9					Green can.	
Setauket Harbor							
24570	- Anchorage Buoy A					Yellow nun.	Maintained from May 1 to Nov. 1. Private aid.
24575	- Anchorage Buoy B					Yellow nun.	Maintained from May 1 to Nov. 1. Private aid.
24580	- Anchorage Buoy C					Yellow nun.	Maintained from May 1 to Nov. 1. Private aid.
24585	- Buoy 1					Green can.	Maintained from May 1 to Nov. 1. Private aid.
24590	- Buoy 2					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
24595	- Buoy 3					Green can.	Maintained from May 1 to Nov. 1. Private aid.
24600	- Buoy 4					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
24605	- Buoy 5					Green can.	Maintained from May 1 to Nov. 1. Private aid.
24610	- Buoy 6					Red nun.	Maintained from May 1 to Nov. 1. Private aid.
LONG ISLAND SOUND (Western Part) (Chart 12363)							
Smithtown Bay							
24615	Stony Brook Harbor Entrance Lighted Buoy 1	40 56.3 73 09.8	FI G 4 ^s		4	Green.	Replaced by can from Dec. 15 to Mar. 15.
24620	Stony Brook Harbor Daybeacon	40 55.6 73 08.9				On pile.	Maintained from June 1 to Oct. 1. Private aid.
Porpoise Channel							
24625	- Lighted Buoy 1		FI G 4 ^s			Green.	Maintained from Apr. 1 to Nov. 1. Private aid.
24630	- Lighted Buoy 2		FI R 4 ^s			Red.	Maintained from Apr. 1 to Nov. 1. Private aid.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
NEW YORK - First District							
N/W							
TALLMAN ISLAND TO QUEENSBORO BRIDGE							
(Chart 12339)							
South Brother Island Channel							
26015	- Lighted Buoy 3	40 47.8 73 53.6	FI G 4 ^s		4	Green.	
26020	- Buoy 4	40 47.6 73 53.7				Red nun.	
26025	- Lighted Buoy 5	40 47.6 73 53.6	FI G 6 ^s		4	Green.	
26030	- Lighted Buoy 7		FI G 2.5 ^s		4	Green.	
26035	Rikers Island Basin Junction Lighted Buoy RI	40 47.3 73 53.7	FI (2+1) R 6 ^s		4	Red and green bands.	
26040	- Buoy 9					Green can.	
26045	STEINWAY CREEK WHARF LIGHT	40 47.1 73 53.8	F R		20		Private aid.
Rikers Island Channel							
26050	LAWRENCE POINT LEDGE LIGHT LP On ledge.		FI W 4 ^s	25	5	NR on skeleton tower.	
26055	Lawrence Point Ledge Buoy 2					Red nun.	
26060	SOUTH BROTHER ISLAND LEDGE LIGHT 3 On ledge.		FI G 4 ^s	17	5	SG on skeleton tower.	
BLOCK ISLAND SOUND AND GARDINERS BAY							
(Chart 13209)							
North Entrance							
26065	Gardiners Island Shoal Buoy 1	41 07.3 72 06.7				Green can.	
26070	Constellation Rock Buoy 2 Marks 17-foot rock.	41 10.5 72 06.6				Red nun.	
26075	Gardiners Island Lighted Gong Buoy IGI	41 09.0 72 08.9	FI G 4 ^s		4	Green.	
26080	Plum Island Rock Buoy 4 On south side of rock.					Red nun.	
Plum Gut							
26085	Midway Shoal Buoy MS On east side of shoal.	41 09.8 72 12.6				Green and red bands; can.	
26090 19860	Orient Point Light	41 09.8 72 13.4	FI W 5 ^s	64	17	Black conical tower with white band in center.	HORN: 2 blasts ev 30 ^s (2 ^s bl-2 ^s si-2 ^s bl-24 ^s si). Emergency light of reduced intensity when main light is extinguished. Lighted throughout 24 hours.
26095	PLUM ISLAND HARBOR EAST DOLPHIN LIGHT		F R	10	6	On dolphin.	Maintained from sundown to 0130 daily. Maintained by the U.S. Dept. of Agriculture.

(1) No.	(2) Name and location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
NEW YORK - First District							
N/W							
BLOCK ISLAND SOUND AND GARDINERS BAY							
(Chart 13209)							
North Entrance							
Plum Gut							
26100	PLUM ISLAND HARBOR WEST DOLPHIN LIGHT	41 10.3 72 12.4	F G	12	6	On dolphin.	HORN: 1 blast ev 10 ^s (5 ^s bl). Sounded occasionally when USDA vessels are navigating in the area. Maintained from sundown to 0130 daily. Maintained by the U.S. Dept. Agriculture.
26105 19855	- LIGHT	41 10.4 72 12.7	Fl W 2.5^s	55	5	On brick shed.	
26110 19850	- Lighted Bell Buoy 2PG		Fl R 4^s		4	Red.	
North Entrance							
26115	CAR FERRY LIGHT	41 09.3 72 14.4	F W	18		On dolphin.	Private aid.
Research Basin							
<i>Aids are maintained by the U.S. Dept. of Agriculture.</i>							
26120	- APPROACH LIGHT	41 08.9 72 14.5	Fl G 4^s	14		On pile.	Maintained from sundown to 0130 daily.
26125	- Bay Daybeacon 1					On piles.	
26130	- Bay Daybeacon 3					On piles.	
26135	- LIGHT	41 09.2 72 14.5	F R	10		On pile.	HORN: 1 blast ev 30 ^s (1 ^s bl). Maintained from sundown to 0130 daily.
Gardiners Bay South Entrance							
26140	- Lighted Bell Buoy S	41 02.2 72 03.1	Mo (A) W		6	Red and white stripes with red spherical topmark.	Replaced by red and white striped sphere from Nov. 15 to Apr. 15.
26145	- Buoy 2					Red nun.	
26147	NAPEAGUE HARBOR CLAM RAFT LIGHT		Fl W 2.5^s			NW on raft.	Maintained from May 1 to Nov. 30. Private aid.
26150	- Buoy 4					Red nun.	
26155	- Buoy 6					Red nun.	
26160	- Buoy 8					Red nun.	
26165	- Buoy 11					Green can.	
26170	Lionhead Rock Buoy 13					Green can.	
26175	Crow Shoal Buoy 14 Southwest of shoal.					Red nun.	
Threemile Harbar							
26180	- Entrance Lighted Bell Buoy TM	41 02.7 72 11.3	Mo (A) W		6	Red and white stripes with red spherical topmark.	Replaced by red and white striped sphere from Nov. 15 to Apr. 15.

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