

U.S. Department of
Homeland Security
United States
Coast Guard



LIGHT LIST

Volume V

MISSISSIPPI RIVER SYSTEM

Mississippi River and its
navigable tributaries

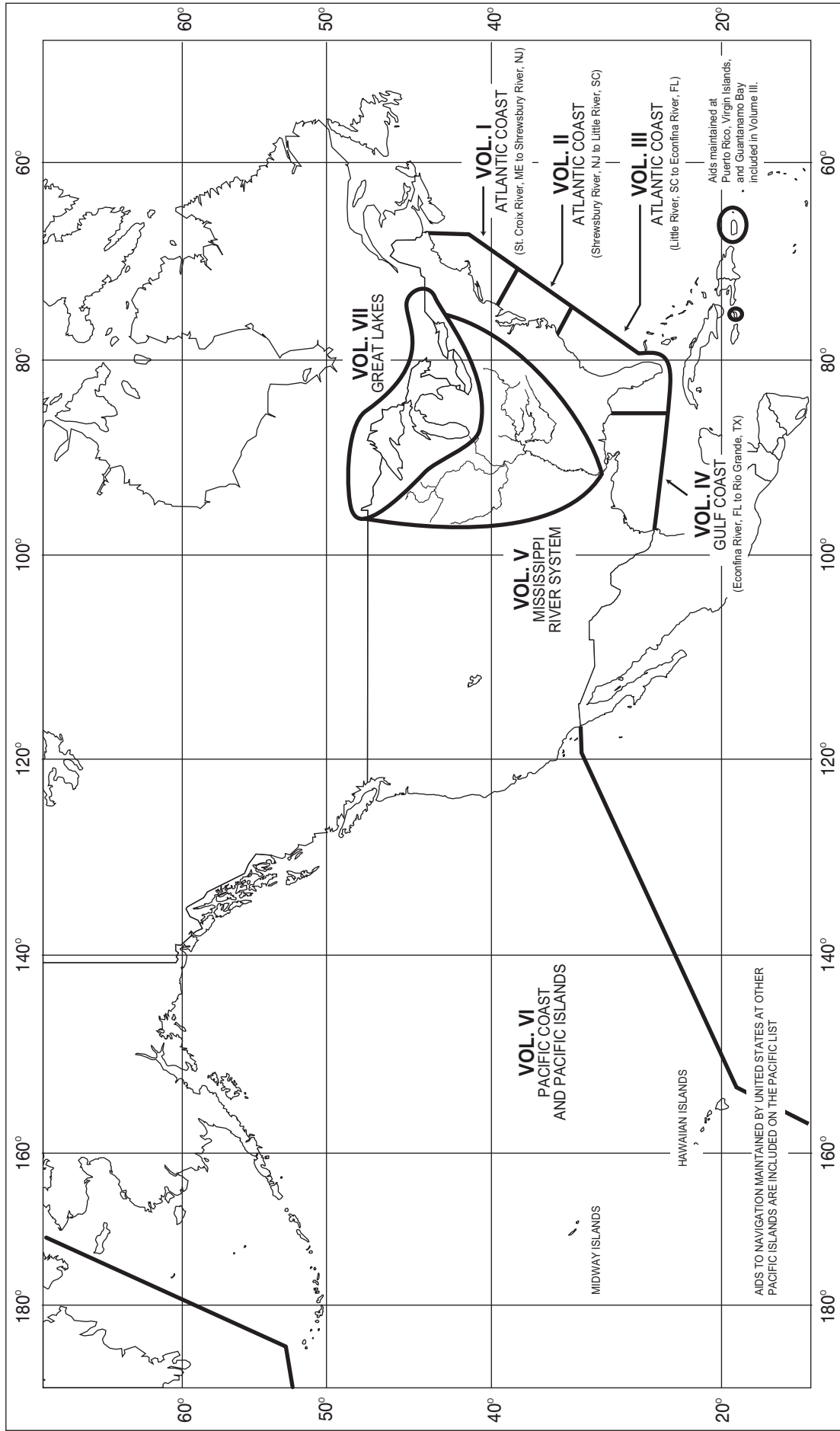
This Light List contains a list of lights, sound signals,
buoys, daybeacons, and other aids to navigation.

IMPORTANT
THIS LIGHT LIST SHOULD BE CORRECTED
EACH WEEK FROM THE LOCAL NOTICES TO
MARINERS OR NOTICES TO MARINERS AS
APPROPRIATE.

2017

COMDTPUB P16502.5

LIMITS OF LIGHT LISTS PUBLISHED BY
U.S. COAST GUARD





U.S. AIDS TO NAVIGATION SYSTEM

on navigable waters except Western Rivers

LATERAL SYSTEM AS SEEN ENTERING FROM SEAWARD

<p>PORT SIDE ODD NUMBERED AIDS</p> <p>GREEN LIGHT ONLY FLASHING (2) FLASHING OCCULTING QUICK FLASHING ISO</p>	<p>PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED</p> <p>PREFERRED CHANNEL TO STARBOARD TOPMOST BAND GREEN</p> <p>GREEN LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2+1)</p>	<p>PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED</p> <p>PREFERRED CHANNEL TO PORT TOPMOST BAND RED</p> <p>RED LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2+1)</p>	<p>STARBOARD SIDE EVEN NUMBERED AIDS</p> <p>RED LIGHT ONLY FLASHING (2) FLASHING OCCULTING QUICK FLASHING ISO</p>
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AIDS TO NAVIGATION HAVING NO LATERAL SIGNIFICANCE

<p>ISOLATED DANGER NO NUMBERS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p> <p>FI (2) 5s</p>	<p>SAFE WATER NO NUMBERS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY MORSE CODE</p> <p>Mo (A)</p>
<p>DAYBOARDS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p>	<p>RANGE DAYBOARDS - MAY BE LETTERED</p>
<p>SPECIAL MARKS - MAY BE LETTERED</p> <p>YELLOW LIGHT ONLY FIXED FLASHING LIGHT ONLY</p> <p>SHAPE OPTIONAL—BUT SELECTED TO BE APPROPRIATE FOR THE POSITION OF THE MARK IN RELATION TO THE NAVIGABLE WATERWAY AND THE DIRECTION OF BUOYAGE.</p>	

Aids to Navigation marking the Intracoastal Waterway (ICW) display unique yellow symbols to distinguish them from aids marking other waters. Yellow triangles indicate aids should be passed by keeping them on the starboard (right) hand of the vessel. Yellow squares indicate aids should be passed by keeping them on the port (left) hand of the vessel. A yellow horizontal band provides no lateral information, but simply identifies aids as marking the ICW.

TYPICAL INFORMATION AND REGULATORY MARKS

INFORMATION AND REGULATORY MARKERS

WHEN LIGHTED, INFORMATION AND REGULATORY MARKS MAY DISPLAY ANY WHITE LIGHT RHYTHM EXCEPT QUICK FLASHING, Mo(A), AND FLASHING (2)

MOORING BUOY
WHITE WITH BLUE BAND
MAY SHOW WHITE REFLECTOR OR LIGHT

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

BOAT EXCLUSION AREA

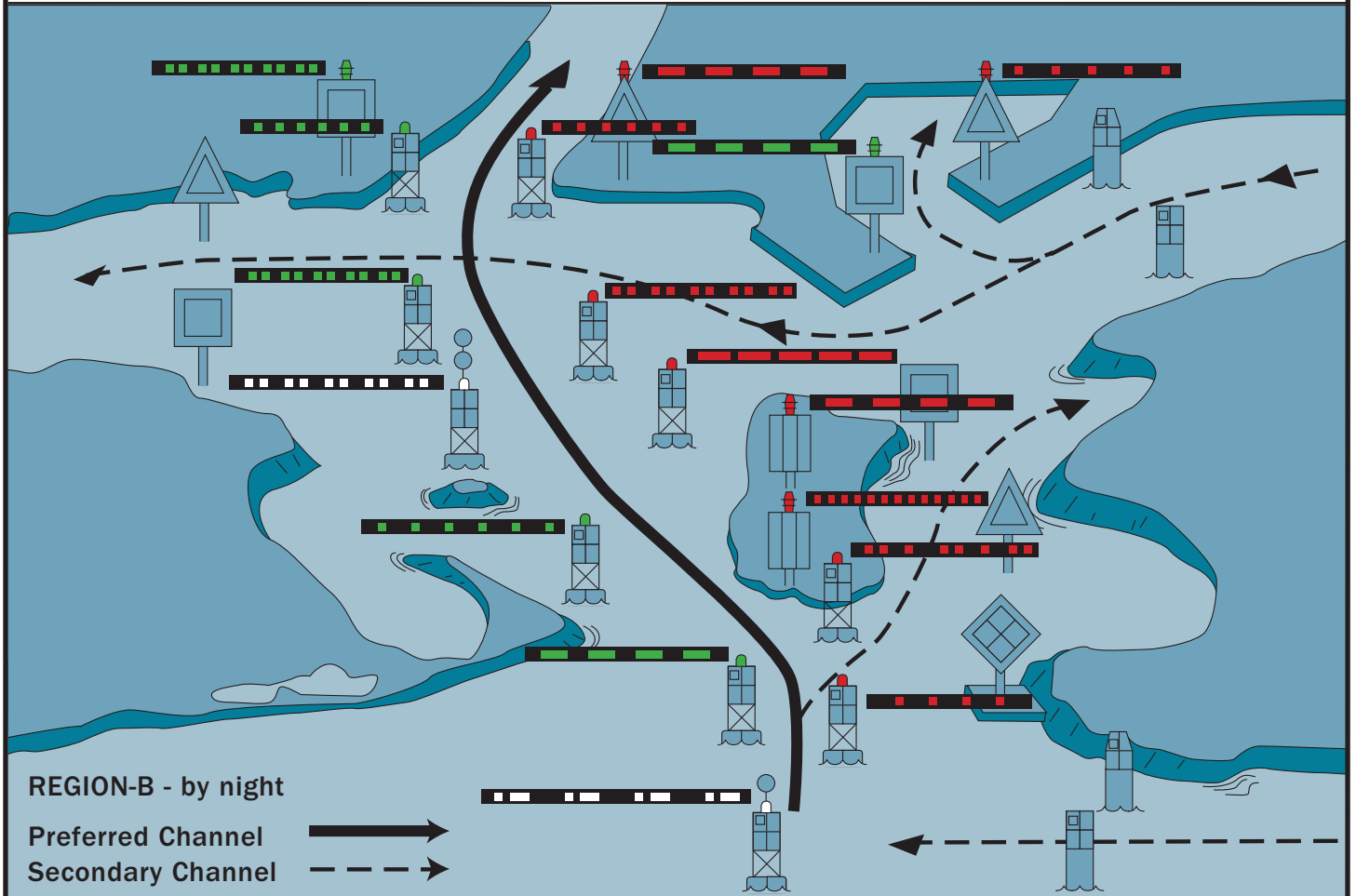
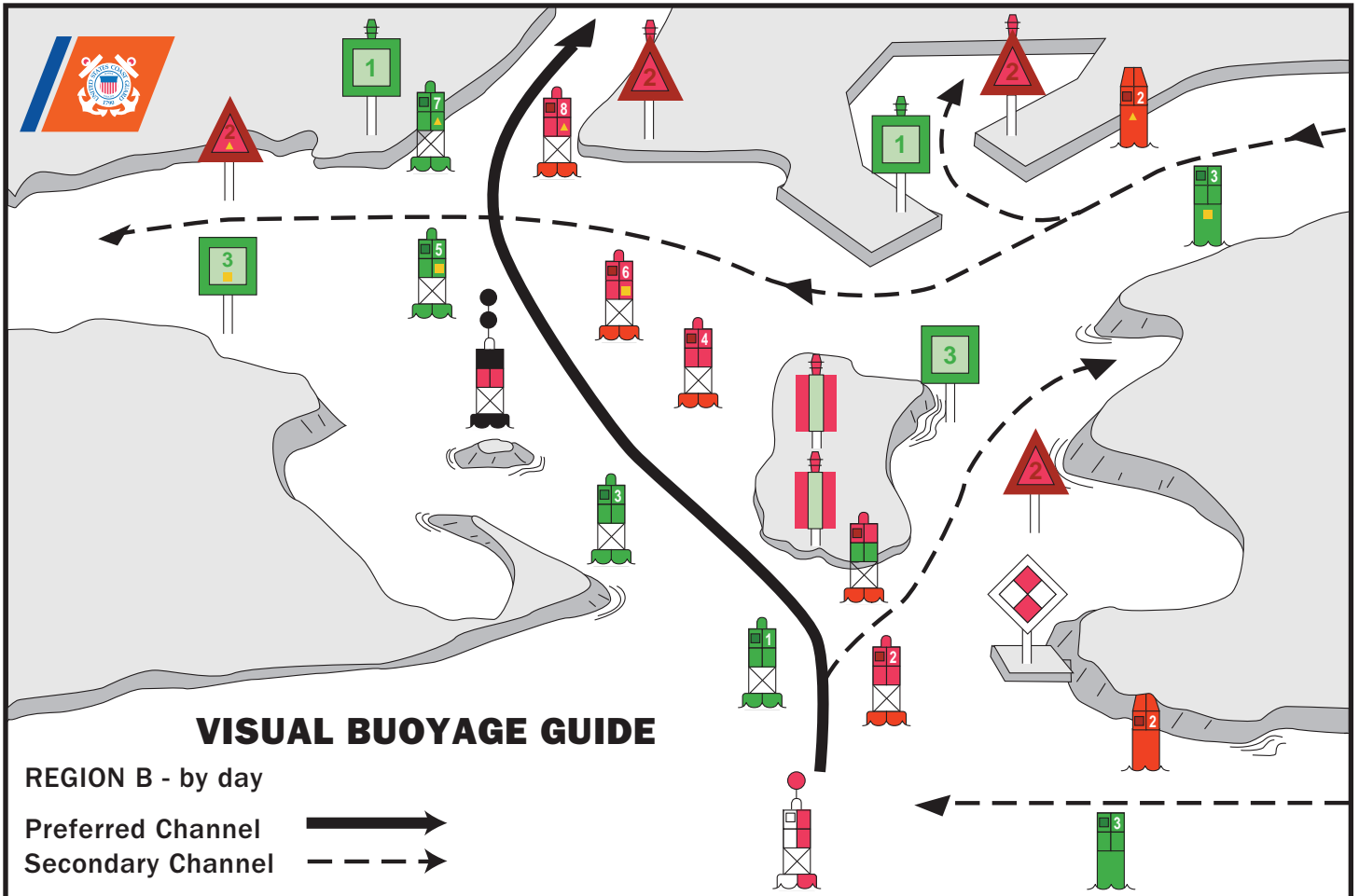
DANGER
THE NATURE OF DANGER MAY BE INDICATED INSIDE THE DIAMOND SHAPE, SUCH AS ROCK, WRECK, SHOAL, DAM, ETC.

CONTROLLED AREA
TYPE OF CONTROL IS INDICATED IN THE CIRCLE, SUCH AS SLOW, NO WAKE, ANCHORING, ETC.

DANGER

BUOY USED TO DISPLAY REGULATORY MARKERS

MAY SHOW WHITE LIGHT MAY BE LETTERED





U.S. AIDS TO NAVIGATION SYSTEM

on the Western River System

AS SEEN ENTERING FROM SEAWARD

<p>PORT SIDE OR RIGHT DESCENDING BANK</p> <p>GREEN OR WHITE LIGHTS</p> <p>FLASHING ISO</p> <p>LIGHT LIGHTED BUOY CAN</p> <p>SG CNG</p> <p>PASSING DAYBEACON CROSSING DAYBEACON</p> <p>176.9 MILE BOARD</p>	<p>PREFERRED CHANNEL MARK JUNCTIONS AND OBSTRUCTIONS COMPOSITE GROUP FLASHING (2+1)</p> <table border="1"> <tr> <td data-bbox="506 346 812 829"> <p>PREFERRED CHANNEL TO STARBOARD TOPMOST BAND GREEN FI (2+1) G</p> <p>JG</p> </td> <td data-bbox="812 346 1125 829"> <p>PREFERRED CHANNEL TO PORT TOPMOST BAND RED FI (2+1) R</p> <p>JR</p> </td> </tr> </table> <p>DAYBOARDS HAVING NO LATERAL SIGNIFICANCE</p> <p>MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p> <p>NB</p>	<p>PREFERRED CHANNEL TO STARBOARD TOPMOST BAND GREEN FI (2+1) G</p> <p>JG</p>	<p>PREFERRED CHANNEL TO PORT TOPMOST BAND RED FI (2+1) R</p> <p>JR</p>	<p>STARBOARD SIDE OR LEFT DESCENDING BANK</p> <p>RED OR WHITE LIGHTS</p> <p>FLASHING (2) ISO</p> <p>LIGHT LIGHTED BUOY NUN</p> <p>TR CNR</p> <p>PASSING DAYBEACON CROSSING DAYBEACON</p> <p>123.5 MILE BOARD</p>
<p>PREFERRED CHANNEL TO STARBOARD TOPMOST BAND GREEN FI (2+1) G</p> <p>JG</p>	<p>PREFERRED CHANNEL TO PORT TOPMOST BAND RED FI (2+1) R</p> <p>JR</p>			

SPECIAL MARKS--MAY BE LETTERED

<p>UNLIGHTED</p> <p>NY</p> <p>LIGHTED</p>	<p>SHAPE: OPTIONAL--BUT SELECTED TO BE APPROPRIATE FOR THE POSITION OF THE MARK IN RELATION TO THE NAVIGABLE WATERWAY AND THE DIRECTION OF BUOYAGE.</p> <p>YELLOW LIGHT ONLY</p> <p>FIXED FLASHING</p>	<p>MOORING BUOY WHITE WITH BLUE BAND</p> <p>MAY SHOW WHITE REFLECTOR OR LIGHT</p>
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TYPICAL INFORMATION AND REGULATORY MARKS

INFORMATION AND REGULATORY MARKERS

WHEN LIGHTED, INFORMATION AND REGULATORY MARKS MAY DISPLAY ANY LIGHT RHYTHM EXCEPT QUICK FLASHING, Mo(a) AND FLASHING (2)

NW WHITE LIGHT ONLY

<p>BOAT EXCLUSION AREA</p> <p>SWIM AREA</p> <p>DANGER</p> <p>CONTROLLED AREA</p> <p>EXPLANATION MAY BE PLACED OUTSIDE THE CROSSED DIAMOND SHAPE, SUCH AS DAM, RAPIDS, SWIM AREA, ETC.</p> <p>THE NATURE OF DANGER MAY BE INDICATED INSIDE THE DIAMOND SHAPE, SUCH AS ROCK, WRECK, SHOAL, DAM, ETC.</p> <p>TYPE OF CONTROL IS INDICATED IN THE CIRCLE, SUCH AS SLOW, NO WAKE, ANCHORING, ETC.</p>	<p>INFORMATION</p> <p>FOR DISPLAYING INFORMATION SUCH AS DIRECTIONS, DISTANCES, LOCATIONS, ETC.</p>	<p>BUOY USED TO DISPLAY REGULATORY MARKERS</p> <p>MAY SHOW WHITE LIGHT MAY BE LETTERED</p>
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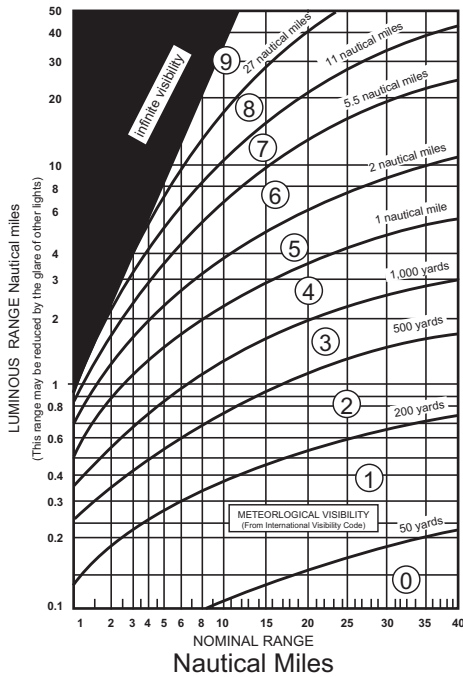
STATE WATERS

<p>INLAND (STATE) WATERS OBSTRUCTION MARK</p> <p>MAY SHOW WHITE REFLECTOR OR QUICK FLASHING WHITE LIGHT</p>	<p>BLACK-STRIPED WHITE BUOY</p> <p>Used to indicate an obstruction to navigation, extends from the nearest shore to the buoy. This means "do not pass between the buoy and the nearest shore." This aid is replacing the red and white striped buoy within the USWMS, but cannot be used until all red and white striped buoys on a waterway have been replaced.</p>
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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. If the existing visibility is less than 10 NM, 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, 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.

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.



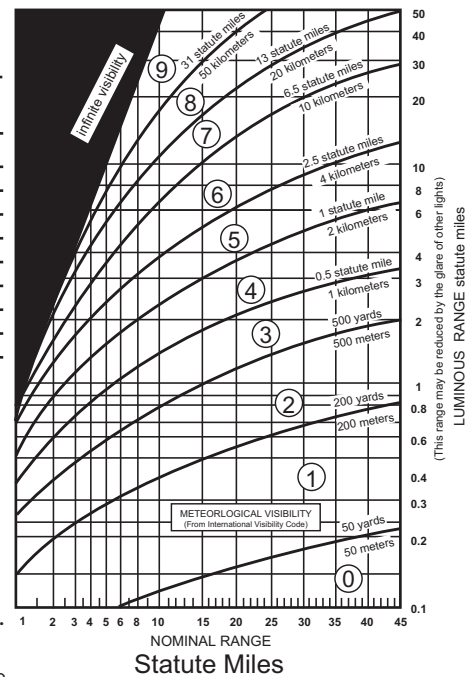
METEOROLOGICAL VISIBILITY
(From International Visibility Code)

Code	Metric	Nautical (approximate)
0	less than 50 meters	less than 50 yards
1	50-200 meters	50-200 yards
2	200-500 meters	200-500 yards
3	500-1,000 meters	500-1,000 yards
4	1-2 kilometers	1,000-2,000 yards
5	2-4 kilometers	1-2 nautical miles
6	4-10 kilometers	2-5.5 nautical miles
7	10-20 kilometers	5.5-11 nautical miles
8	20-50 kilometers	11-27 nautical miles
9	greater than 50 km	greater than 27 nm

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 observer and light.
3. Glare from background lighting will reduce the range that lights are sighted.
4. The rolling motion of a vessel and/or of a lighted aid may reduce the distance that lights can be detected or identified.



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.

Height Feet / Meters	Distance Nautical Miles (NM)	Height Feet / Meters	Distance Nautical Miles (NM)	Height Feet / Meters	Distance Nautical Miles (NM)
5/1.5	2.6	70/21.3	9.8	250/76.2	18.5
10/3.1	3.7	75/22.9	10.1	300/91.4	20.3
15/4.6	4.5	80/24.4	10.5	350/106.7	21.9
20/6.1	5.2	85/25.9	10.8	400/121.9	23.4
25/7.6	5.9	90/27.4	11.1	450/137.2	24.8
30/9.1	6.4	95/29.0	11.4	500/152.4	26.2
35/10.7	6.9	100/30.5	11.7	550/167.6	27.4
40/12.2	7.4	110/33.5	12.3	600/182.9	28.7
45/13.7	7.8	120/36.6	12.8	650/198.1	29.8
50/15.2	8.3	130/39.6	13.3	700/213.4	31.0
55/16.8	8.7	140/42.7	13.8	800/243.8	33.1
60/18.3	9.1	150/45.7	14.3	900/274.3	35.1
65/19.8	9.4	200/61.0	16.5	1000/304.8	37.0

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= 6.9 NM
 Computed geographic visibility= 16.3 NM

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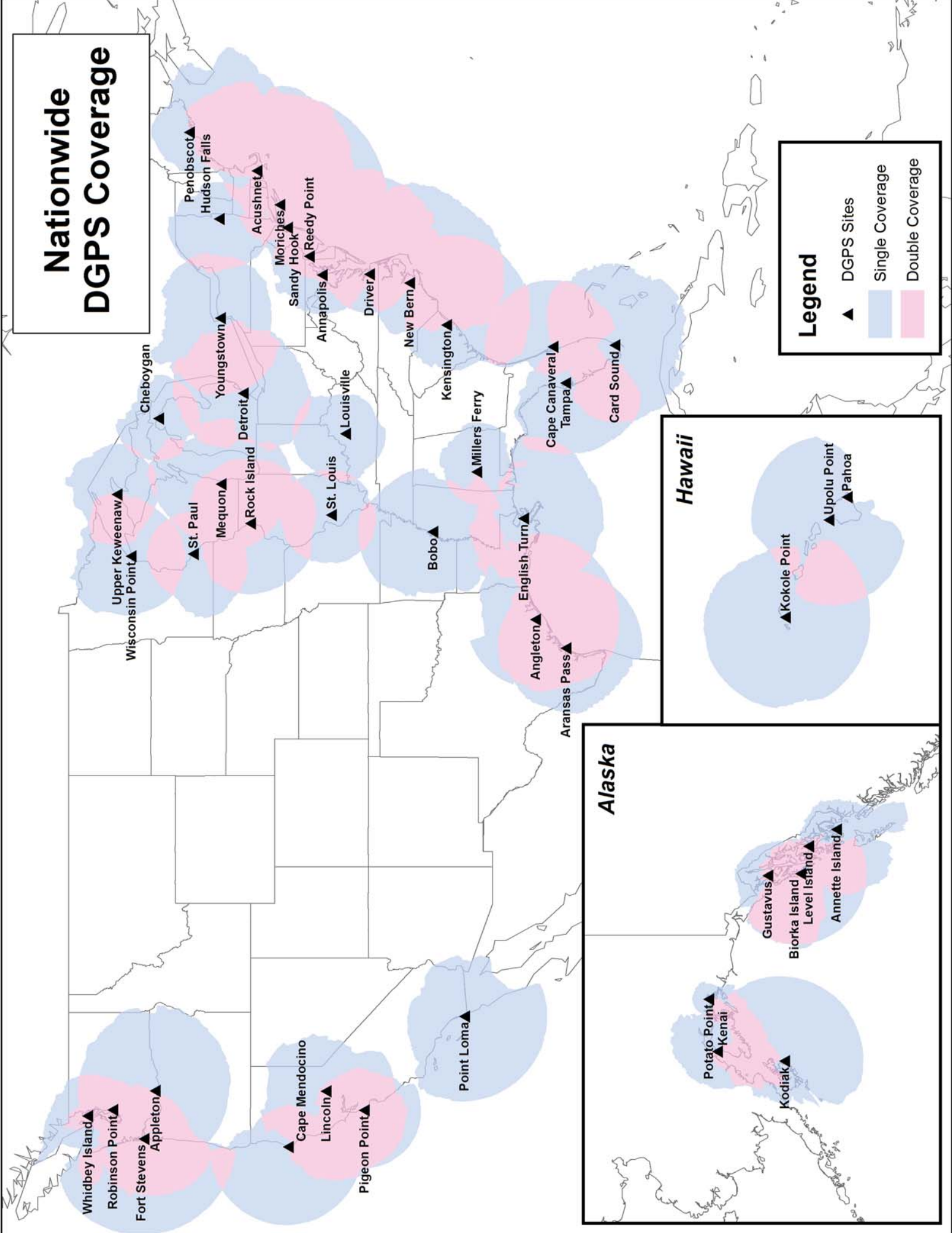
Nationwide DGPS Coverage

Legend

- ▲ DGPS Sites
- Single Coverage
- Double Coverage

Hawaii

Alaska



COAST GUARD DISTRICT COMMANDERS

DISTRICT	ADDRESS	WATERS OF JURISDICTION
FIRST	408 Atlantic Avenue Boston, MA 02110-3350 Tel: (617) 223-8351 http://www.uscg.mil/d1	Maine, New Hampshire, Massachusetts, Vermont (Lake Champlain), Rhode Island, Connecticut, New York, to Shrewsbury River, New Jersey.
FIFTH	Federal Building 431 Crawford Street Portsmouth, VA 23704-5004 Tel: (757) 398-6486 (757) 398-6231 http://www.uscg.mil/d5	Shrewsbury River, New Jersey to Delaware, Maryland, Virginia, District of Columbia, and North Carolina.
SEVENTH	Brickell Plaza Federal Building 909 SE 1st Avenue; Rm:406 Miami, FL 33131-3050 Tel: (305) 415-6752 (305) 415-6800 http://www.uscg.mil/d7	South Carolina, Georgia, Florida to 83°50'W, and Puerto Rico and adjacent islands of the United States.
EIGHTH	Hale Boggs Federal Building 500 Poydras Street New Orleans, LA 70130-3310 Tel: (504) 671-2327 (504) 671-2137 http://www.uscg.mil/d8	Florida westward from 83°50'W, Alabama, Mississippi, Louisiana, Texas, the Mississippi River System except that portion of the Illinois River north of Joliet, Illinois.
NINTH	1240 East 9th Street Cleveland, OH 44199-2060 Tel: (216) 902-6060 (216) 902-6117 http://www.uscg.mil/d9	Great Lakes and St. Lawrence River above St. Regis River.
ELEVENTH	Coast Guard Island Building 50-6 Alameda, CA 94501-5100 Tel: (510) 437-2976 http://www.uscg.mil/d11	California.
THIRTEENTH	Federal Building 915 Second Avenue 35th Floor, Rm 3510 Seattle, WA 98174-1067 Tel: (206) 220-7270 (206) 220-7004 http://www.uscg.mil/d13	Oregon, Washington, Idaho, and Montana.
FOURTEENTH	Prince Kalaniana'ole Federal Bldg. 300 Ala Moana Blvd 9th Floor, Room 9-220 Honolulu, HI 96850-4982 Tel: (808) 535-3409 (808) 535-3414 http://www.uscg.mil/d14	Hawaiian, American Samoa, Marshall, Marianas, and Caroline Islands.
SEVENTEENTH	PO Box 25517 Juneau, AK 99802-5517 Tel: (907) 463-2262 (907) 463-2004 http://www.uscg.mil/d17	Alaska.

**U. S. COAST GUARD EIGHTH DISTRICT
UNIT LISTING**

AIDS TO NAVIGATION TEAMS

ANT CORPUS CHRISTI
1201 East Navigation Blvd
Corpus Christi, TX 78402
Tel: 361-844-6521

ANT DULAC
241 Coast Guard Rd
Dulac, LA 70353
Tel: (985) 563-4473

ANT GALVESTON
3000 Fort Point Road
Galveston, TX 77553
Tel: 409-766-5654

ANT GULFPORT
991 23rd Ave.
Gulfport, MS 39501
Tel: 228-575-9173

ANT MOBILE
1500 15th St.
Mobile, AL 36615
Tel: (251) 441-6244

ANT MORGAN CITY
800 Youngs Rd Suite 100
Morgan City, LA 70381
Tel: (985) 384-7000

ANT NEW ORLEANS
1790 Saturn Rd.
New Orleans, LA 70129
Tel: 504-253-4834

ANT PANAMA CITY
1700 Thomas Drive
Panama City, FL 32408-5804
Tel: (850) 234-8139

ANT PENSACOLA
21 Slemmer Ave
Naval Air Station Pensacola, FL
32508-7851
Tel: (850) 455-2354

ANT PORT O'CONNOR
PO Box 98
Port O'Connor, TX 77982
Tel: (361) 983-4313

ANT SABINE
7034 S. First St.
Sabine Pass, TX 77655
Tel: 409-971-2111

ANT SOUTH PADRE
1 Wallace Reed Road
South Padre Island, TX 78597
Tel: (956) 364-7433

ANT VENICE
436 Coast Guard Rd
Venice, LA 70091
Tel: 504-534-7650

**U. S. COAST GUARD EIGHTH DISTRICT
UNIT LISTING (con't)**

USCGC AXE (WLIC-75310)

Port of Morgan City
800 Youngs Road,
Morgan City, LA 70381
Tel: (985) 385-0037

USCGC BARBARA MABRITY (WLM-559)

1500 15th Street,
Mobile, AL 36615-1390

Tel: (251) 441-6275

USCGC CLAMP (WLIC-75306)

1 Ferry Rd. Galveston, TX 77553
Tel: (409) 766-4779

USCGC CYPRESS (WLB-210)

211 South Ave Bldg 38 Suite C
Pensacola, FL 32508
Tel: (850) 452-9044

USCGC HATCHET (WLIC-75309)

1 Ferry Rd. Galveston, TX 77553
Tel: (409) 766-4776

USCGC HARRY CLAIBORNE (WLM-561)

End of Ferry Rd. Galveston, TX 77553-1912
Tel: (409)-766-4771

USCGC MALLET (WLIC-75304)

1201 East Navigation Blvd
Corpus Christi, TX 78407

Tel: (361) 844-6531

USCGC PAMLICO (WLIC-800)

1790 Saturn Rd.
New Orleans, LA 70129

Tel: (504) 942-3042

USCGC SAGINAW (WLIC-803)

1500 15th Street,
Mobile, AL 36615-1390

Tel: (251) 441-5197

COAST GUARD COMMUNICATIONS FACILITIES

All Broadcasts are made on Channel 22 (157.1 MHz)

NOTE: Broadcast times refer to scheduled Broadcasts in local time. Non-scheduled Broadcasts are made whenever important marine information needs to be passed. Announcements of Broadcasts are made on Channel 16 (156.8 MHz).

FACILITY	COVERAGE AREA	RIVER STAGES AND SCHEDULED TO BROADCAST TIMES.
SECTOR UPPER MISSISSIPPI RIVER ST. LOUIS, MO	UPPER MISSISSIPPI, ILLINOIS, MISSOURI RIVERS AND TRIBUTARIES	BROADCAST TIMES 0200 Z 0800 Z 1300 Z & 2000 Z
SECTOR LOWER MISSISSIPPI RIVER MEMPHIS, TN	LOWER MISSISSIPPI (South of Cairo to Baton Rouge), ARKANSAS, OUACHITA-BLACK, RED RIVERS AND TRIBUTARIES	0100 Z 0700 Z 1400 Z & 1900 Z
SECTOR OHIO VALLEY	OHIO, UPPER MISSISSIPPI RIVER, TRIBUTARIES LOUISVILLE, KY LOWER MISSISSIPPI RIVER	0300 Z 0900 Z 1600 Z & 2100 Z

AREAS OF JURISDICTION OF COAST GUARD CUTTERS ON THE MISSISSIPPI AND WESTERN RIVERS

For the guidance and assistance of those persons needing to contact Coast Guard Cutters in areas of jurisdiction are shown below:

WATERWAY / FACILITY	MILE	ADDRESS	PHONE
ALLEGHENY RIVER CGC OSAGE (WLR 65505)	0.0 - 72.0	300 McKnown Lane, Sewickley, PA 15143-2093	412-741-1180
ARKANSAS WATERWAY (White River) CGC KANAWHA (WLR 75407)	0.0 - 71.2	P.O. Box 7627, Pine Bluff, AR 71611-7627	870-536-2604
CGC MUSKINGUM (WLR 75402)	71.2 - 445.9	Lake Texoma P.O. Box 626, Sallisaw, OK 74955-0626	918-775-4471
ATCHAFAYALA RIVER CGC GREENBRIER (WLR 75501)	0.0 - 40.0	P.O. Box 1090, Vidalia, LA 71373-1343	601-442-1771
BIG SANDY RIVER (West Virginia) CGC OSAGE (WLR 65505)	0.0 - 7.9	300 McKnown Lane, Sewickley, PA 15143-2093	412-741-1180
CLINCH RIVER CGC OUACHITA (WLR 65501)	0.0 - 61.5	3551 Old Harrison Pike E., Chattanooga, TN 37416-2825	615-622-2101
CUMBERLAND RIVER CGC CIMARRON (WLR 65502)	0.0 - 381.0	700 Coast Guard Rd, Buchanan, TN 38222-9801	731-642-4457
GREEN RIVER CGC OBION (WLR 65503)	0.0 - 100.0	3301 HWY 60 East, Owensboro, KY 42303-0220	270-685-0650
HIWASSEE RIVER CGC OUACHITA (WLR 65501)	0.0 - 20.4	3551 Old Harrison Pike E., Chattanooga, TN 37416-2825	423-622-2101
ILLINOIS RIVER CGC SANGAMON (WLR 65506)	0.0 - 291.1	97 Conference Ctr. Dr., East Peoria, IL 61611	309-694-2319
KANAWHA RIVER CGC OSAGE (WLR 65505)	0.0 - 89.6	300 McKnown Lane, Sewickley, PA 15143-2093	412-741-1180
LOWER MISSISSIPPI RIVER CGC GREENBRIER (WLR 75501)	233.9 - 363.3	440 L.E. Berry Rd., Natchez, MS 39120	601-446-5104
CGC KICKAPOO (WLR 75406)	363.3 - 480.1	P.O. Box 31, Vicksburg, MS 39180-0031	601-636-8304
CGC PATOKA (WLR 75408)	480.1 - 598.1	P.O. Box 468, Greenville, MS 38701-0468	662-332-1044
CGC KANAWHA (WLR 75407)	598.1 - 712.9	P.O. Box 7627, Pine Bluff, AR 71611-7627	870-536-1134
CGC KANKAKEE (WLR 75500)	683.0 - 813.0	2 Auction Avenue, Memphis, TN 38105-1502	901-544-3936
CGC CHENA (WLR 75409)	813.2 - 953.5	503 Hall Street, Hickman, KY 42050-0299	270-236-2324
MINNESOTA RIVER CGC WYACONDA (WLR 75403)	0.0 - 21.8	60 East 1st Street, Dubuque, IA 52001-7652	563-582-0211

AREAS OF JURISDICTION OF COAST GUARD CUTTERS
ON THE MISSISSIPPI AND WESTERN RIVERS (cont.)

WATERWAY / FACILITY	MILE	ADDRESS	PHONE
MISSOURI RIVER CGC CHEYENNE (WLR 75405)	0.0 - 226.4 226.4 - 732.3	Foot of Arsenal St., St. Louis, MO 63118	314-771-4325
CGC GASCONADE (WLR 75401)		9800 John J. Pershing Dr., Omaha, NE 68112-1503	402-451-7681
MONONGAHELA RIVER CGC OSAGE (WLR 65505)	0.0 - 128.7	300 McKnown Lane, Sewickley, PA 15143-2093	412-741-1180
OHIO RIVER CGC OSAGE (WLR 65505)	341.0 - 919.0	300 McKnown Lane, Sewickley, PA 15143-2093	412-741-1180
CGC OBION (WLR 65503)	341.0 - 919.0	3301 Hwy 60 East, Owensboro, KY 42303-0220	270-685-0650
CGC CHIPPEWA (WLR 75404)	919.0 - 981.0	700 Coast Guard Rd, Buchanan, TN 38222-9801	731-642-7181
CGC CHENA (WLR 75409)	918.5 - 981.0	P.O. Box 299, Hickman, KY 42050-0299	270-236-2324
OLD RIVER CGC GREENBRIER (WLR 75501)	0.0 - 6.9	440 L.E. Berry Rd., Natchez, MS 39120	601-442-5104
OUACHITA-BLACK WATERWAY CGC GREENBRIER (WLR 75501)	Black River 0.0 - 41.5, Ouachita 41.5 - 337.1	440 L.E. Berry Rd., Natchez, MS 39120	601-442-5104
RED RIVER ANT Colfax CGC GREENBRIER (WLR 75501)	6.9 - 259.8	350 Control House Rd., Colfax, LA 71417 440 L.E. Berry Rd., Natchez, MS 39120	318-627-2783 601-442-5104
ST. CROIX RIVER CGC WYACONDA (WLR 75403)	0.0 - 25.5	60 East 1st Street, Dubuque, IA 52001-7652	563-582-0211
TENNESSEE RIVER CGC CIMARRON (WLR 65502)	0.0 - 206.7	700 Coast Guard Rd, Buchanan, TN 38222-9801	731-642-4457
CGC OUACHITA (WLR 65501)	206.7 - 652.1	3551 Old Harrison Pike E., Chattanooga, TN 37416-2825	423-662-2101
TENNESSEE - TOMBIGBEE WATERWAY CGC OUACHITA (WLR 65501)	411.9 - 455.5	3551 Old Harrison Pike E., Chattanooga, TN 37416-2825	423-662-2101
UPPER MISSISSIPPI RIVER CGC CHIPPEWA (WLR 75404)	0.0 - 109.8	700 Coast Guard Rd, Buchanan, TN 38222-9801	731-642-7181
CGC CHEYENNE (WLR 75405)	109.9 - 200.8	100 Arsenal St. St. Louis, MO. 63118-3394	314-771-4325
CGC SCIOTO (WLR 65504)	363.0 - 579.5	221 Mississippi Drive, Keokuk, IA 52632-4219	319-524-1657
CGC WYACONDA (WLR 75403)	522.0 - 857.6	60 E. First Street, Dubuque, IA 52001-7652	563-582-0211

COAST GUARD MARINE SAFETY UNITS

For the guidance and assistance of those persons needing to contact Commanding Officers; Marine Safety Unit,
U.S. Coast Guard, the jurisdiction, address, and telephone number of these offices are shown below.

JURISDICTION	MILE	ADDRESS	PHONE
ALLEGHENY RIVER		1041 Washington Pike, Suite 300, Bridgeville, PA. 15017	412-221-0807
ARKANSAS WATERWAY		2 A.W. Willis Ave., Memphis, TN 38105	866-777-2784
ATCHAFALAYA RIVER		200 Hendee St., New Orleans, LA. 70114	504-365-2200
BIG SANDY RIVER (West Virginia)		95 Peyton St. Barboursville, WV 25504	304-733-0198
CLINCH RIVER		220 Great Circle Road, Suite 148, Nashville, TN 37228-1700	615-736-5421
CUMBERLAND RIVER	0.0 - 80.0 80.0 - 381.0	225 Tully St., Paducah, KY 42001 220 Great Circle Rd., Suite 148, Nashville, TN 37228-1700	270-442-1621 615-736-5421
GREEN RIVER		600 Martin Luther King Place, Louisville, KY 40202	502-779-5400
HIWASSEE RIVER		220 Great Circle Rd. Suite 148 Nashville, TN 37228-1700	615-736-5421
ILLINOIS WATERWAY AND RIVER	0.0 - 187.3 187.3 - 327.2	Robert A. Young Fed. Bldg., 1222 Spruce St., Suite 1215, St. Louis, MO 63103-2835 610 South Canal Street, Chicago, IL 60607-4573	314-269-2332 630-986-2155
ILLINOIS WATERWAY: ILLINOIS-CALUMET-SAG CHANNEL ILLINOIS and MISSISSIPPI CANAL (HENNEPIN CANAL)		16215 83rd. St., Suite D, Burr Ridge, IL 60527 555 Plainfield Rd., Suite A, Willowbrook, IL. 60527.	630-986-2155 630-986-2155
KANAWHA RIVER		95 Peyton St., Barboursville, WV 25504	304-733-0198
KASKASKIA RIVER		St. Louis, MO	314-269-2332
MINNESOTA RIVER		St. Louis, MO	314-269-2332
LOWER MISSISSIPPI	95.0 - 303.0 303.0 - 869.0 869.0 - 953.8	225 Tully St., Paducah, KY 42001	270-422-1621
MISSOURI RIVER		St. Louis, MO	314-269-2332
MONONGAHELA RIVER		1041 Washington Pike, Suite 300, Bridgeville, PA. 15017.	412-221-0807

COAST GUARD MARINE SAFETY UNITS (cont.)

JURISDICTION	MILE	ADDRESS	PHONE
UPPER MISSISSIPPI RIVER	0.0 - 109.0 109.9 - 351.0 351.0 - 857.6	225 Tully St., Paducah, KY 42001 St. Louis, MO Federal Office Bldg, 180 E. Kellogg Blvd., P.O. Box 65428, St. Paul, MN 55165-0428	270-422-1621 314-269-2332 612-290-3911
OHIO RIVER	0.0 - 127.2 127.2 - 401.3 401.3 - 531.0 531.0-867.4 867.4 - 981.0	100 Forbes Ave., Suite 1150., Pittsburgh, PA 15222 95 Peyton St. Barboursville, WV 25504 3653 River Rd., Cincinnati, OH 45204 600 Dr. Martin Luther King Place, Louisville, KY 40202 225 Tully St., Paducah, KY 42001	412-644-5808 304-733-0198 513-921-9033 502-779-5300 270-442-1621
OLD RIVER	0.0 - 6.9	Memphis, TN	866-777-2784
OUACHITA-BLACK WATERWAY	0.0 - 41.4 41.4 - 337.1	Memphis, TN (Black River) and (Ouachita River)	866-777-2784
RED RIVER	6.9 - 140.0	Memphis, TN	866-777-2784
ST. CROIX RIVER and LAKE ST. CROIX	0.0 - 80.0	St. Louis, MO 225 Tully St., Paducah, KY 42001	314-539-3091 270-442-1621
TENNESSEE RIVER	80.0 - 652.2	220 Great Circle Rd., Suite 148, Nashville, TN 37228-1700	615-736-5421

ARMY CORPS OF ENGINEERS RIVER MILEAGE JURISDICTIONS

For the guidance and assistance of those persons needing to contact various Division or District Engineers,
Corps of Engineers, U.S. Army, the river jurisdiction, address, and telephone number of such offices are shown below.

JURISDICTION	MILE	ADDRESS	PHONE
ALLEGHENY RIVER		U.S. Army Engineer District Pittsburgh	412-471-0159
ATCHAFALAYA RIVER	0.0 - 140.0	U.S. Army Engineer District Vicksburg	601-631-5000
ARKANSAS RIVER	0.0 - 308.5 308.5 - 395.0	U.S. Army Engineer District Little Rock U.S. Army Engineer District Tulsa	501-324-5551 918-669-7366
VERDIGRIS RIVER		U.S. Army Engineer District Tulsa	918-669-7366
BIG SANDY RIVER (West Virginia)		U.S. Army Engineer District Huntington	304-399-5211
CLINCH RIVER		U.S. Army Engineer District Nashville	615-736-2165
CUMBERLAND RIVER		U.S. Army Engineer District Nashville	615-736-2165
EMORY RIVER		U.S. Army Engineer District Nashville	615-736-2165
HIWASSEE RIVER		U.S. Army Engineer District Nashville	615-736-2165
ILLINOIS WATERWAY	0.0 - 80.0 80.0 - 327.2	U.S. Army Engineer District St. Louis Lake Michigan East End North Pier including Calumet-Sag Channel U.S. Army Engineer District Rock Island	314-331-8000 501-324-5551
KANAWHA RIVER		U.S. Army Engineer District Huntington	304-399-5211
KASKASKIA RIVER		U.S. Army Engineer District St. Louis	314-331-8000
KENTUCKY RIVER		U.S. Army Engineer District Louisville	502-315-6100
GREEN RIVER		U.S. Army Engineer District Louisville	502-315-6000
LITTLE RIVER		U.S. Army District Engineer Nashville	615-736-2165
MINNESOTA RIVER		U.S. Army Engineer District St. Paul	651-225-8238
LOWER MISSISSIPPI RIVER (AHP)	0.0 - 233.1 233.1 - 303.1 303.1 - 598.1 598.1 - 955.8 & 2.2 miles up Ohio River	U.S. Army Engineer District New Orleans U.S. Army Engineer District New Orleans U.S. Army Engineer District Vicksburg U.S. Army Engineer District Memphis	504-861-7058 504-861-7058 601-631-5000 901-544-3602
UPPER MISSISSIPPI RIVER	0.0 - 300.0 300.0 - 614.0 614.0 - Head	U.S. Army Engineer District St. Louis U.S. Army Engineer District Rock Island U.S. Army Engineer District St. Paul	314-331-8000 501-324-5551 651-225-8238
MISSOURI RIVER	0.0 - 498.5 489.5 - Head including Upper River Reservoir	U.S. Army Engineer District Kansas City U.S. Army Engineer District Omaha	816-426-3271 888-835-5971
MONONGAHELA RIVER		U.S. Army Engineer District Pittsburgh	412-471-0159
OHIO RIVER	0.0 - 127.2 127.2 - 438.0 438.0 - 981.5	U.S. Army Engineer District Pittsburgh U.S. Army Engineer District Huntington U.S. Army Engineer District Louisville	888-835-5971 304-399-5211 502-315-6100
OUACHITA-BLACK WATERWAY		U.S. Army Engineer District Vicksburg	601-631-5000
RED RIVER	0.0 - 140.0	U.S. Army Engineer District Vicksburg	601-631-5000
ST. CROIX RIVER	0.0 - 52.0	U.S. Army Engineer District St. Paul	612-220-8238
TENNESSEE RIVER		U.S. Army Engineer District Nashville	615-736-2165
TENNESSEE-TOMBIGBEE WATERWAY	411.9 - 443.4 443.4 - 450.7	U.S. Army Engineer District Mobile U.S. Army Engineer District Nashville	251-690-2411 615-736-2165
WHITE RIVER		U.S. Army Engineer District Little Rock	501-324-5551

ARMY CORPS OF ENGINEERS ADDRESSES

DISTRICT	ADDRESS
U.S. Army Engineer District Little Rock	District Engineer U.S. Army Engineer District Little Rock P.O. Box 867, Little Rock, AR 72203-0867
U.S. Army Engineer District Nashville	District Engineer U.S. Army Engineer District Nashville 801 Broadway, Nashville, TN 37203
U.S. Army Engineer District Mobile	District Engineer U.S. Army Engineer District Mobile 109 Saint Joseph St., Ste. 1000, Mobile AL 36602
U.S. Army Engineer District St. Paul	USACOE District St. Paul U. S. Army Engineer Center 180 5th St. E., St. Paul, MN 55101
U.S. Army Engineer District Vicksburg	District Engineer U.S. Army Engineer District Vicksburg 4155 Clay St., Vicksburg, MS 39183
U.S. Army Engineer District Louisville	District Engineer U.S. Army Engineer District Louisville 600 Dr. Martin Luther King Pl., Louisville, KY 40202
U.S. Army Engineer District Huntington	District Engineer U.S. Army Engineer District Huntington 502 Eighth Street Huntington, WV 25701-2070
U.S. Army Engineer District Pittsburgh	District Engineer U.S. Army Engineer District Pittsburgh 1828 Wm S. Moorhead Federal Bldg. 1000 Liberty Ave., Pittsburgh, PA 15222-4186
U.S. Army Engineer District Omaha	District Engineer U.S. Army Engineer District Omaha 1616 Capitol Ave., Omaha, NE 68102
U.S. Army Engineer District Kansas City	District Engineer U.S. Army Engineer District Kansas City 601 E. 12th St., Ste. 700, Kansas City, MO 64106
U.S. Army Engineer District Vicksburg	District Engineer U.S. Army Engineer District Vicksburg 4155 Clay St., Vicksburg, MS 39183
U.S. Army Engineer District Little Rock	District Engineer U.S. Army Engineer District Little Rock 700 W. Capitol Ave., Little Rock, AR 72201
U.S. Army Engineer District Tulsa	District Engineer U.S. Army Engineer District Tulsa 1645 S. 101 Ave. Tulsa, OK 74128-4609
U.S. Army Engineer District St. Louis	District Engineer U.S. Army Engineer District St. Louis 1222 Spruce St., # 4 100, St. Louis, MO 63103
U.S. Army Engineer District Rock Island	District Engineer U.S. Army Engineer District Rock Island Clock Tower Bldg P.O. Box 2004 Rock Island, IL 61204-2004
U.S. Army Engineer District New Orleans	District Engineer U.S. Army Engineer District New Orleans 7400 Leake Ave., New Orleans, LA 70118
U.S. Army Engineer District Memphis	District Engineer U.S. Army Engineer District Memphis Clifford Davis Federal Bldg., B-202 167 N. Main St. Memphis, TN 38103-1894

USCG NAVIGATION CENTER Navigation Information Service (NIS)

The U.S. Coast Guard Navigation Center (NAVCEN) is the official government source of information for civil users of the Global Positioning System (GPS). The Navigation Information Service (NIS) is available 24 hours a day, seven days a week, for all Radio Navigation and maritime related needs via phone, fax or e-mail. The NIS provides users the ability to access real time or archived GPS, NDGPS, DGPS, and LNM information at <http://www.navcen.uscg.gov>, as well as subscribe to an automated list service which enables users to receive GPS status messages and Notice to NAVSTAR User (NANU) messages via direct Internet e-mail.

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

To comment on any of these services or ask questions about the service offered, contact the NAVCEN at:

Commanding Officer
U.S. Coast Guard NAVCEN (NIS)
MS 7310
7323 Telegraph Road
Alexandria, VA 20598-7310
Phone: (703) 313-5900
FAX: (703) 313-5920
Internet: <http://www.navcen.uscg.gov>

This Light List is corrected through:

[Eighth Coast Guard District Local Notice to Mariners No. 01/17](#)

and through [National Geospatial-Intelligence Agency \(NGA\) Notice to Mariners No. 01/17](#)

The 2017 edition supersedes the 2016 edition.

RECORD OF CORRECTIONS

YEAR 2017

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6.....	7.....	8.....	9.....	10.....
11.....	12.....	13.....	14.....	15.....
16.....	17.....	18.....	19.....	20.....
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31.....	32.....	33.....	34.....	35.....
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YEAR 2018

1.....	2.....	3.....	4.....	5.....
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PREFACE

Lights and other marine aids to navigation, maintained by or under authority of the U.S. Coast Guard and located on the Mississippi River system are listed in this volume with aids listed consecutively for each river in the system. The rivers are listed in alphabetical order.

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

Aids to Navigation Link: <http://www.uscgboating.org>

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.

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 Light List is published annually and is intended to furnish more complete information concerning aids to navigation than can be conveniently shown on charts. This Light List is not intended to be used in place of charts or Coast Pilots. 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 to aids to navigation during the year are advertised in U.S. Coast Guard Local Notices to Mariners and National Geospatial-Intelligence Agency (NGA) Notices to Mariners. Important changes to aids to navigation are also broadcast through Coast Guard or Naval radio stations and NAVTEX. Mariners should keep their Light Lists, charts and other nautical publications corrected from these notices and should consult all notices issued after the date of publication of this Light List.

The electronic version of this publication is updated monthly and is available at.

<http://www.navcen.uscg.gov/index.php?pageName=lightLists>

Reporting Private Aids to Navigation Discrepancies D8:

<http://www.uscg.mil/d8/waterways/PATON.Home.asp>

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 advertised in the Local Notice 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 Notices to Mariners or the Notices to Mariners, as appropriate.

Mariners and others are requested to bring any apparent errors or omissions in these lists to the attention of:

Commander (dpw)
Eighth Coast Guard District
500 Poydras Street
New Orleans, LA 70130-3396
D8marineinfo@uscg.mil

or

USCG Navigation Center
Charting Branch
MS 7310
7323 Telegraph Road
Alexandria, VA 20598-7310
Email: TIS-PF-NISWS@USCG.MIL

INTRODUCTION

Light List Arrangement

Aids to navigation on the Mississippi River System are listed in this volume. In addition, Bridges, Locks, and minor tributaries are also listed. Aids to navigation are arranged in downstream order for each river listed in the “contents”. The mileage of the aid to navigation determines its position in the list. The origin or mile zero, of most rivers is coincident with the river mouth. If otherwise, the origin point is named in the heading of the section. Aids to navigation are shown located on either the left or right bank when heading downstream, or as sometimes stated, on the “left descending” or the “right descending” bank.

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

RIVER MOUTHS and CITIES
Bridges, Locks, and Dams
LIGHTS
Lighted Buoys
Daybeacons and Unlighted Buoys

Light List numbers are assigned to all Federal aids to navigation and many private aids to navigation for reference in the Light List. 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.

Description of Columns

Column (1): Light List Number.

Column (2): Name and location of the aid to navigation.

Note: A dash (-) is used to indicate the bold heading is part of the name of the aid to navigation. When reporting discrepancies or making references to such an aid to navigation in correspondence, the full name of the aid including the geographic heading, should be given.

Column (3): River mile.

Column (4): Bank of river.

Column (5): Characteristic of lighted aid to navigation.

Column (6): Structure and dayboard description.

Column (7): Remarks, including bridge clearances, lock dimensions, and private aid to navigation identification.

U.S. Coast Guard Light List Distribution

U.S. regulations require that most commercial vessels maintain on board a currently corrected, copy or pertinent extract, of the U.S. Coast Guard Light Lists which are available for free and

are updated weekly on the Coast Guard Navigation Center's website at <http://www.navcen.uscg.gov/?pageName=lightLists>. Commercially printed versions are also available, but the Coast Guard does not attest to their veracity or sanction such publications.

CHARTS & PUBLICATIONS

Nautical Charts & Publications

Nautical charts covering the coastal waters of the United States and its territories are published by the National Ocean Service (NOS). Up-to-date paper copies of NOS charts are available from NOS Certified Agents. A list of agents can be found at:

http://www.nauticalcharts.noaa.gov/staff/print_agents.html. NOS also produces Raster Navigational Charts (RNC) and Electronic Navigational Charts (ENC). RNCs can be found at <http://www.nauticalcharts.noaa.gov/mcd/Raster/index.htm>. ENCs can be found at <http://www.nauticalcharts.noaa.gov/mcd/enc/index.htm>.

Inland Electronic Navigational Charts (IENC) and chart books are published by the U.S. Army Corps of Engineers and are available online at <http://www.agc.army.mil/Missions/Echarts.aspx>.

Tide Tables and Tidal Current Tables are no longer printed or distributed by NOS. NOS Tide and Tidal Current predictions are available online at http://tidesandcurrents.noaa.gov/tide_predictions.html. Commercially printed versions, using data provided by NOS, are also available. These products may be obtained from local stores that carry marine publications.

Notices to Mariners

Broadcast Notices to Mariners are made by the Coast Guard through Coast Guard radio stations. These notices, which are broadcast on VHF-FM, NAVTEX, and other maritime frequencies, are warnings that contain important navigational safety information. Included are reports of discrepancies 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 United States Coast Pilot and in the National Geospatial-Intelligence Agency publication Radio Navigational Aids (Publication No. 117). VHF-FM voice broadcast times can be found online at <http://www.nws.noaa.gov/om/marine/vhfvoice.htm>.

Local Notices to Mariners (U.S. regional coverage) are another means which the Coast Guard disseminates navigational information for the United States, its territories, and possessions. A Local Notice to Mariners is issued by each Coast Guard district and is used to report changes and discrepancies to aids to navigation maintained by and under the authority of the Coast Guard. The Local Notice to Mariners also contain chart and Light List corrections, proposed aids to navigation projects open for public comment, ongoing waterway projects, bridge regulation changes, marine event information, and other concerns pertinent to the mariner.

Local Notices to Mariners are essential to all navigators for the purposes of keeping charts, Light Lists, Coast Pilots, and other nautical publications up-to-date. These notices are published weekly and can be found online at <http://www.navcen.uscg.gov/index.php?pageName=lnmMain>. Mariners may register with the

Coast Guard Navigation Center to receive automatic notifications via email when new editions of the Local Notice to Mariners are available. Register at <http://www.navcen.uscg.gov/?pageName=listServerForm>. Vessels operating in ports and waterways in several districts will have to obtain the Local Notice to Mariners for each district.

Notice to Mariners are prepared jointly by the National Geospatial-Intelligence Agency (NGA), the U.S. Coast Guard, and the National Ocean Service, and are published weekly by the NGA. The weekly Notice to Mariners advises mariners of important matters affecting navigational safety including new hydrographic discoveries, changes to aids to navigation, and foreign marine information. Also included are corrections to Light Lists, Coast Pilots, and Sailing Directions. This notice is intended for mariners and others who have a need for information related to oceangoing operations. Because it is intended for use by oceangoing vessels, many corrections that affect small craft navigation and associated waters are not included. Information concerning small craft is contained in the Coast Guard Local Notice to Mariners only. The weekly Notices to Mariners may be found online at <http://msi.nga.mil/NGAPortal/MSI.portal>.

ATON DISCREPANCIES

The Coast Guard does not keep the tens of thousands of aids to navigation comprising the U.S. Aids to Navigation System under simultaneous and continuous observation. Mariners should realize 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 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 on VHF-FM channel 16 or directly to one of the U.S. Government radio stations listed in Chapter 3, Section 300L, Radio Navigation Aids (Publication No. 117). In addition to notifying the nearest Coast Guard unit by radio, a discrepant aid to navigation can be reported online at <http://www.navcen.uscg.gov/?pageName=atonOutageReport>.

U.S. AIDS TO NAVIGATION SYSTEM

GENERAL

The navigable waters of the United States are marked to assist navigation using the U.S. Aids to Navigation System, a system consistent with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Maritime Buoyage System. The IALA Maritime Buoyage System is followed by most of the world's maritime nations and improves maritime safety by encouraging conformity in buoyage systems worldwide. IALA buoyage is divided into two regions made up of Region A and Region B. All navigable waters of the United States follow IALA Region B, except U.S. possessions west of the International Date Line and south of 10° north latitude, which follow Region A. Lateral aids to navigation in Region A vary from those located within Region B. Non-lateral aids to navigation in Region A are the same as those used in Region B. Appropriate nautical charts and publications should be consulted to determine whether the Region A or Region B marking schemes are in effect for a given area.

Aids to navigation are developed, established, operated, and maintained by the U.S. Coast Guard to accomplish the following:

1. Assist navigators in determining their position,

2. Assist the navigator in determining a safe course,
3. Warn the navigator of dangers and obstructions,
4. Promote the safe and economic movement of commercial vessel traffic, and
5. Promote the safe and efficient movement of military vessel traffic, and cargo of strategic military importance.

The U.S. Aids to Navigation System is designed for use with nautical charts. Nautical charts portray the physical features of the marine environment, which include: soundings, landmarks, hazards to navigation, and aids to navigation. To best understand the purpose of a specific aid to navigation, mariners should consult the associated nautical chart, which illustrates the relationship of the aid to navigation to channel limits, obstructions, hazards to navigation, and to the aids to navigation system as a whole. Seasonal aids to navigation are placed into service, withdrawn, or changed at specified times of the year. The dates shown in the Light Lists are approximate and may vary due to adverse weather or other conditions. These aids will be changed on Electronic Navigational Charts (ENC) based on Light List dates and electronic navigation system settings.

Mariners should maintain and consult suitable publications and navigation equipment depending on the vessel's requirements. This shipboard navigation equipment is separate from the aids to navigation system, but is often essential to its use.

The U.S. Aids to Navigation System is primarily a lateral system, which employs a simple arrangement of colors, shapes, numbers, and light characteristics to mark the limits of navigable routes. This lateral system is supplemented with non-lateral aids to navigation where appropriate.

Federal aids to navigation consist of Coast Guard operated aids to navigation. The Coast Guard establishes, maintains, and operates a system of aids to navigation consisting of visual, audible, and electronic signals designed to assist the prudent mariner in the process of navigation.

The U.S. Aids to Navigation System contains the following subsystems:

1. **Intracoastal Waterway:** The aids to navigation marking the Intracoastal Waterway are arranged geographically from north to south on the Atlantic Coast and generally east to west on the coast of the Gulf of Mexico. Red lights (if so equipped), even numbers, and red buoys or triangle shaped daymarks are located on the southbound/westbound starboard waterway boundary. Green lights (if so equipped), odd numbers, and green buoys or square shaped daymarks are on the southbound/westbound port waterway boundary.
2. **Western Rivers:** The Western Rivers System is employed on the Mississippi River System, in addition to the Tennessee-Tombigbee Waterway and the Alabama, Atchafalaya, and Apalachicola-Chattahoochee-Flint River Systems. The Western Rivers System consists of the following characteristics:
 - a. Buoys are not numbered.
 - b. Numbers on beacons do not have lateral significance, but rather indicate mileage from a fixed point (normally the river mouth).

- c. Diamond shaped non-lateral dayboards, red and white or green and white as appropriate, are used to indicate where the river channel crosses from one bank to the other.
 - d. Lights on green aids to navigation show a single-flash characteristic, which may be green or white.
 - e. Lights on red aids to navigation show a group-flash characteristic, which may be red or white.
 - f. Isolated danger marks are not used.
3. **Bridge Markings:** Bridges across navigable waters are 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 placed on drawbridges to show when they are in the closed position. Green lights are placed 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. Lateral red and green lights and dayboards may mark main channels through bridges. Adjacent piers are 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" (a long flash followed by three short flashes). AIS-ATON and RACONs may be placed on the bridge structure to mark the centerline of the navigable channel through the bridge.

Vertical 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. Clearance gauges indicate the vertical distance between "low steel" of the bridge channel span (in the closed to navigation position for drawbridges) and the level of the water, measured to the bottom of the foot marks, read from top to bottom.

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

Private aids to navigation include aids to navigation that are either operated by private persons and organizations, or that are operated by states. Private aids to navigation are classified into three categories:

1. **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 U.S. Coast Guard.
2. **Class II:** Aids to navigation that, exclusive of Class I aids, are located in waters used by general navigation.
3. **Class III:** Aids to navigation that, exclusive of Class I and Class II aids, are located in waters not ordinarily used by general navigation.

Authorization for the establishment of a Class II or Class III private aid to navigation by the U.S. Coast Guard imposes no legal obligation that the aid actually be established and operated. It only specifies the location and operational characteristics of the aid for which the authorization was requested. Once the aid is established, however, the owner is legally obligated to maintain it in good working order and properly painted.

Lights and sound signals on oil wells or other offshore structures in navigable waters are private aids to navigation and are generally not listed in the Light List unless they are equipped with a RACON. Where space allows, 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 quick flashing white, red, or yellow 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, anchors, and mooring buoys, etc., are not normally lighted. In addition, some structures are equipped with a sound signal that produces a single two-second blast every 20 seconds.

BUOYS, BEACONS, AND AIS-ATON

The primary components of the U.S. Aids to Navigation System are buoys, beacons, and AIS-ATON.

Buoys are floating aids to navigation used extensively throughout U.S. waters. They are moored to sinkers by varying lengths of chain and may shift due to sea conditions and other causes. Buoys may also be carried away, capsized, or sunk. Prudent mariners will not rely solely on any single aid to navigation, particularly floating aids.

Buoy positions represented on nautical charts are approximate position only, due to the practical limitations of positioning and maintaining buoys and their sinkers in precise geographical locations. The position of buoys and beacons are indicated with a circle on the chart. The center of the symbol corresponds with the position of the aid.

Positions of Federal aids to navigation are verified during periodic maintenance visits. Between visits, environmental conditions, including atmospheric and sea conditions, seabed slope and composition, may shift buoys off their charted positions. Buoys may also be dragged off station, sunk, or capsized by a collision with a vessel.

Beacons are aids to navigation which are permanently fixed to the earth's surface. They range from large lighthouses to small single-pile structures and may be located on land or in the water.

Lighted beacons are called lights; unlighted beacons are called daybeacons. Lighthouses are placed on shore or on marine sites and most often do not indicate lateral significance. Lighthouses with no lateral significance exhibit a white light.

Beacons exhibit a daymark. For small structures, these are colored geometric shapes that make an aid to navigation readily visible and easily identifiable against background conditions. Generally, the daymark conveys to the mariner, during daylight hours, the same significance as the aid's light or reflector does at night. The daymark of towers, however, consists of the structure itself. As a result, these daymarks do not infer lateral significance.

Ranges are non-lateral aids to navigation composed of two 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 typically display rectangular dayboards of various colors and are generally, but not always lighted. Ranges may display lights during daylight and at night. When lighted, ranges may display lights of any color.

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.

Aids to Navigation (ATON) may be enhanced by the use of an automatic identification system (AIS). AIS is a maritime navigation safety communications protocol standardized by the International Telecommunication Union and adopted by the International Maritime Organization for the broadcast or exchange of navigation information between vessels, aircraft, and shore stations. AIS ATON can autonomously and at fixed intervals broadcast the name, position, dimensions, type, characteristics, and status from or concerning an aid to navigation. AIS ATON can be either real (physically fitted to an aid to navigation), synthetic (physically fitted somewhere other than to an aid to navigation) or virtual (physically nonexistent, but capable of being portrayed on AIS-capable displays).

Note: A Real or Physical AIS ATON can actively monitor and report the health and position status of its host; while Synthetic AIS ATON broadcasted from ashore (i.e. NAIS) can be used to electronically augment the range or portrayal (i.e., on radar and ECDIS) of an existing aid to navigation.

Although all existing AIS mobile devices can receive AIS ATON Reports and ASM messages, they may not readily appear on an AIS Minimal Keyboard Display or other shipboard navigational display systems (i.e., radar, ECDIS, ECS), which would require software updates to make these systems compliant with international navigation presentation standards (i.e., IEC 62288 (Ed. 2), IHO S-52 (Ed. 4.4.0)).

AIS ATON can also be used to broadcast both laterally (e.g., Port Hand Mark) and non-laterally significant marine safety information (e.g., environmental data, tidal information, and navigation warnings).

Note: AIS ATON stations broadcast their presence, identity (9-digit Marine Mobile Service Identity (MMSI) number), position, type, and status at least every three minutes or less via an AIS (ITU-R M.1371) message 21–AIS ATON Report. In addition to its AIS ATON Report, AIS ATON can broadcast significant marine safety information via Application Specific Messages (ASM), which are customized messages that can be used to broadcast additional aid

information or other marine safety information (i.e., environmental conditions, wind speed and direction, tidal/current data, bridge air clearances, area notices, etc. They are identified by their: AIS message number (i.e. 6, 8, 25 or 26), Designated Area Code (DAC), Function Identifier (FI), and Version Number, e.g. U.S. Geographic Notice message: Msg# = 8, DAC = 367, FI = 22, Version = 2, and, denoted as 8/367.22.2.

TYPES OF SIGNALS

Lighted aids to navigation are, for the most part, equipped with daylight 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 reduced visibility. Haze and distance may reduce the apparent duration of the flash of a light. In some atmospheric conditions, 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 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 in order to avoid mistaking powerful lights, visible in the distance, 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 appear as 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 as 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 alternatively appear and disappear. This may lead the unwary to assign a false characteristic and hence, to error 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 effect 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 is 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 adjoining land cuts off a light 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. The arc indicates the bearings between which the variation of visibility or obstruction of the light occurs.

Only aids to navigation with green or red lights have lateral significance and exhibit either flashing, quick flashing, group flashing, occulting, or isophase light rhythms. When proceeding in the conventional direction of buoyage, the mariner in IALA 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 that 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 that 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 shapes, colors, letters, and light rhythms may determine the purpose of aids to navigation exhibiting white or yellow lights.

Most aids to navigation are fitted with retro reflective material to increase their visibility in darkness. Colored reflective material is used on aids to navigation that, if lighted, will display lights of the same color.

Preferred channel marks exhibit a composite group-flashing light rhythm of two flashes followed by a single flash.

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

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

Special marks exhibit yellow lights and exhibit a flashing or fixed rhythm.

Information and regulatory marks exhibit 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.

Shapes are used to provide easy identification on certain unlighted buoys and dayboards on beacons. These shapes are laterally significant only when associated with laterally significant colors.

In IALA Region B, cylindrical buoys (referred to as "can buoys") and square dayboards mark the port 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 starboard 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 numbers, colors, and light characteristics convey their meanings.

Dayboards throughout the U.S. Aids to Navigation System are described using standard designations that describe the appearance of each dayboard. A brief explanation of the designations and of the purpose of each type of dayboard in the system is given below, followed by a verbal description of the appearance of each dayboard type.

Designations:

1. First Letter – Shape or Purpose

- C: Crossing (Western Rivers only) diamond-shaped, used to indicate the points at which the channel crosses the river.
- 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.
- 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.
- M: Safe Water (octagonal) used to mark the fairway or middle of the channel.
- N: No lateral significance (diamond or rectangular) used for special purpose, warning, distance, or location markers.
- S: Square used to mark the port side of channels when proceeding from seaward.
- T: Triangle used to mark the starboard side of channels when proceeding from seaward.

2. Second Letter – Key Color

B – Black G – Green R – Red 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 band 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.

Descriptions:

CNG: 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 green reflective diamonds at the top and bottom corners and white reflective diamonds in the side corners (Western Rivers only).

CNR: 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 red reflective diamonds at the top and bottom corners and white reflective diamonds in the side corners (Western Rivers only).

JG: Dayboard bearing horizontal bands of green and red, green band topmost, with corresponding reflective borders.

JG-I: Square dayboard bearing horizontal bands of green and red, green band topmost, with corresponding reflective borders and a yellow reflective horizontal band.

JG-SY: Square dayboard bearing horizontal bands of green and red, green band topmost, with corresponding reflective borders and a yellow reflective square.

JG-TY: Square dayboard bearing horizontal bands of green and red, green band topmost, with corresponding reflective borders and a yellow reflective triangle.

JR: Dayboard bearing horizontal bands of red and green, red band topmost, with corresponding reflective borders.

JR-I: Triangular dayboard bearing horizontal bands of red and green, red band topmost, with corresponding reflective borders and a yellow reflective horizontal band.

JR-SY: Triangular dayboard bearing horizontal bands of red and green, red band topmost, with corresponding reflective borders and a yellow reflective square.

JR-TY: Triangular dayboard bearing horizontal bands of red and green, red band topmost, with corresponding reflective borders and a yellow reflective triangle.

KBG: Rectangular black dayboard bearing a central green stripe.

KBG-I: Rectangular black dayboard bearing a central green stripe and a yellow reflective horizontal band.

KBR: Rectangular black dayboard bearing a central red stripe.

KBR-I: Rectangular black dayboard bearing a central red stripe and a yellow reflective horizontal band.

KBW: Rectangular black dayboard bearing a central white stripe.

KBW-I: Rectangular black dayboard bearing a central white stripe and a yellow reflective horizontal band.

KGB: Rectangular green dayboard bearing a central black stripe.

KGB-I: Rectangular green dayboard bearing a central black stripe and a yellow reflective horizontal band.

KGR: Rectangular green dayboard bearing a central red stripe.

KGR-I: Rectangular green dayboard bearing a central red stripe and a yellow reflective horizontal band.

KGW: Rectangular green dayboard bearing a central white stripe.

KGW-I: Rectangular green dayboard bearing a central white stripe and a yellow reflective horizontal band.

KRB: Rectangular red dayboard bearing a central black stripe.

KRB-I: Rectangular red dayboard bearing a central black stripe and a yellow reflective horizontal band.

KRG: Rectangular red dayboard bearing a central green stripe.

KRG-I: Rectangular red dayboard bearing a central green stripe and a yellow reflective horizontal band.

KRW: Rectangular red dayboard bearing a central white stripe.

KRW-I: Rectangular red dayboard bearing a central white stripe and a yellow reflective horizontal band.

KWB: Rectangular white dayboard bearing a central black stripe.

KWB-I: Rectangular white dayboard bearing a central black stripe and a yellow reflective horizontal band.

KWG: Rectangular white dayboard bearing a central green stripe.

KWG-I: Rectangular white dayboard bearing a central green stripe and a yellow reflective horizontal band.

KWR: Rectangular white dayboard bearing a central red stripe.

KWR-I: Rectangular white dayboard bearing a central red stripe and a yellow reflective horizontal band.

MR: Octagonal dayboard bearing stripes of white and red, with a white reflective border.

MR-I: Octagonal dayboard bearing stripes of white and red, with a white reflective border and a yellow reflective horizontal band.

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.

ND: Rectangular white mileage marker with black numerals indicating the mile number (Western Rivers only).

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.

NL: Rectangular white location marker with an orange reflective border and black letters indicating the location.

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.

NY: Diamond-shaped yellow dayboard with yellow reflective border.

SG: Square green dayboard with a green reflective border.

SG-I: Square green dayboard with a green reflective border and a yellow reflective horizontal band.

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")

TR: Triangular red dayboard with a red reflective border.

TR-I: Triangular red dayboard with a red reflective border and a yellow reflective horizontal band.

TR-SY: Triangular red dayboard with a red reflective border and a yellow reflective square.

TR-TY: Triangular red dayboard with a red reflective border and a yellow reflective triangle. These abbreviated descriptions are used in column (7) and may also be found on the illustrations of the U.S. Aids to Navigation System.

Numbers are used to provide easy identification of aids to navigation. In IALA Region B, all solid red and solid green aids are numbered, with the exception of buoys located on the Western Rivers. Red aids to navigation have even numbers and green aids to navigation have odd numbers. The numbers for each increase from seaward when 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. Letters are not used for buoys on the Western Rivers.

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.

Sound signal is a generic term used to describe aids to navigation that produce an audible signal designed to assist the mariner in periods of reduced visibility. These aids to navigation can be activated by several means (e.g., manually, remotely, or fog detector). The Coast Guard is replacing many fog detectors with mariner radio activated sound signals (MRASS). To activate, mariners key their VHF-FM radio a designated number of times on a designated VHF-FM channel. The sound signal is activated for a period of 15, 30, 45, or 60 minutes after which the activated assistance automatically turns off. 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. The devices producing the sound, e.g., diaphones, diaphragm horns, sirens, whistles, bells, or gongs determine tones.

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. Sound signals installed on buoys 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.

The characteristic of a sound signal is listed in column (8) of the Light List. If the sound signal is remotely activated, column (8) will contain the VHF-FM channel and number of times the VHF-FM radio should be keyed. All waterway users equipped with a VHF-FM radio may activate the sound signal, but they are not required to do so. 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.

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.*

Radar Beacons (RACONS) are radar transponders that when triggered by an X-band radar produce a coded response from its location, which is portrayed radially as a series of dots and dashes on the triggering radar. Although RACONS may be used on both laterally significant and non-laterally significant aids to navigation, their signal should just be used for identification purposes only.

RACONS have a typical output of 600 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 mounted on a fixed structure. It must be understood that these nominal ranges 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 vessel'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 adjusting 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 are special fixtures, incorporated into both lighted and unlighted aids to navigation, to enhance the reflection of radar energy. These fixtures help radar-equipped vessels to detect buoys and beacons, which are so equipped. However, they do not positively identify a radar target as an aid to navigation.

NAVIGATION SERVICES

GLOBAL POSITIONING SYSTEM (GPS), DIFFERENTIAL GPS (DGPS), AND NATION-WIDE AUTOMATIC IDENTIFICATION SYSTEM (NAIS)

Global Positioning System (GPS) is a satellite based navigation system, operated and controlled by the Department of Defense (DOD) under U.S. Air Force management, which provides precise, worldwide, three-dimensional navigation capabilities. The system was originally designed for military application; however, it is now available to all and used almost ubiquitously. The United States is committed to maintaining the availability of at least 24 operational GPS satellites, in six precise orbital planes, each of which complete a circular 10,900 nautical mile orbit of the earth once every 12 hours. Ideally, a minimum of four satellites will be visible from any position on the earth and will provide positions with a global horizontal accuracy within 3 meters, 95% percent of the time. Whenever possible, advance notice of when GPS satellites should not be used will be provided by the DOD and made available by the US Coast Guard through GPS status messages.

The Navigation Center coordinates and manages the Civil GPS Service Interface Committee (CGSIC), which comprises members from U.S. and international private, government, and industry user groups. The CGSIC is the recognized worldwide forum for effective interaction between all civil GPS users and the U.S. GPS authorities.

At least three satellites are required for a two-dimensional solution, however, GPS does not provide integrity information and mariners should exercise extreme caution when using GPS in restricted waterways.

Differential GPS (DGPS) is an augmentation to the GPS signals. Each site corrects for small variations in the signals from each satellite that is in view at that time. Satellite signals can vary due to small changes in the satellite's circuitry and orbit and from changes caused by local weather conditions. Satellite corrections are transmitted to users via radio signals in the medium frequency band (285-325 kHz) previously used for marine radiobeacons. DGPS corrections and integrity information are transmitted using Minimum Shift Keying (MSK) modulation. The modulation data rate is usually 100 or 200 bits per second (bps), but can also be 50 bps. The range of DGPS transmissions is from 40 to 300 nautical miles.

DGPS was the first Federal radionavigation system capable of providing the 10-meter navigation service required for the Harbor Entrance and Approach phase of maritime navigation.

DGPS provides integrity messages for signals from the GPS satellites, as well as DGPS position corrections, and typically provides position accuracy of 1-3 meters.

Each DGPS site has two reference stations (which calculate the differential corrections), two integrity monitors (which ensure the differential corrections are accurate), a transmitter, and equipment to communicate status information to and receive commands from the control station. Each transmitter and reference station has a unique identification number that permits users to determine which site/equipment is providing their differential corrections. As distance from the transmitting site increases, the small error in the differential corrections increases. The best accuracy is achieved when using the DGPS site closest to the user.

Information regarding the location of DGPS transmitters is given on the map labeled U.S. DGPS Sites & Identification Numbers on page i. Users can access additional information and DGPS statuses, submit questions, and provide comments via the Navigation Information Service's website or by calling the Coast Guard Navigation Center DGPS watchstander at (703) 313-5902.

Navigation Information Service (NIS): The Coast Guard is the government interface for civil users of GPS and has established a Navigation Information Service (NIS) to meet the information needs of the civil user. The NIS is a Coast Guard entity that is manned 24 hours a day, 7 days a week, and is located at the Navigation Center (NAVCEN) in Alexandria, VA. It provides data broadcasts and on-line computer-based information services which are available 24 hours a day. The information provided includes present or future satellite outages, constellation changes, user instructions and tutorials, lists of service and receiver provides/users, and other GPS and DGPS related information.

Navigation Center Internet Service (www) website also offers an e-mail subscription service for GPS status messages, Notice Advisory to NAVSTAR Users (NANU) messages, Local Notice to Mariners, and Coast Guard Light List.

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

Nationwide Automatic Identification System (NAIS) consists of approximately 200 VHF receiver sites located throughout the coastal continental United States, inland rivers, Alaska, Hawaii, Puerto Rico, and Guam. NAIS couples AIS technology with a comprehensive network infrastructure to achieve ship-to-shore and shore-to-ship data transmission throughout the navigable waters of the United States. The system enables AIS-equipped vessels to receive important marine information such as safety and security messages, weather alerts, and electronic aids to navigation.

NAIS is designed to collect safety and security data from AIS-equipped vessels in navigable waters of the United States and share that data with Coast Guard operators and other government and port partners. The primary goal of NAIS is to increase situational awareness through data dissemination via a network infrastructure, particularly focusing on improving maritime security, marine and navigational safety, search and rescue, and environmental protection services. Collected AIS data improves the safety of vessels and ports through collision avoidance and the safety of the nation through detection, identification, and

classification of vessels. NAIS broadcasts navigation enhancing safety related messages such as Synthetic AIS ATON Reports and Application Specific Messages.

For more information see:

- AIS messages at www.navcen.uscg.gov/?pageName=AIMessages,
- IMO Safety of Navigation Circular 289 and 290 regarding ASM's at www.navcen.uscg.gov/?pageName=AISReferences,
- IALA AIS ASM Catalog at www.e-navigation.nl/asm, and
- USCG Special Notice 14-02 regarding eATON at www.navcen.uscg.gov/?pageName=AISFAQ#21.

To comment on any of these services or ask questions about the service offered, contact the NAVCEN at:

Commanding Officer
U.S. Coast Guard Navigation Center
7323 Telegraph Road STOP 7310
Alexandria, VA 20598-7310
Phone: (703) 313-5900
Internet: <http://www.navcen.uscg.gov>

ABBREVIATIONS

Various abbreviations are utilized in Broadcast Notices to Mariners, Local Notices to Mariners, on charts, and in the Light Lists. Refer to the following list.

Light Characteristics

Alternating	AL
Characteristic	CHAR
Composite Group-Flashing	FL (2+1)
Composite Group-Occulting	OC (2+1)
Continuous Quick-Flashing	Q
Eclipse	EC
Fixed and Flashing	FFL
Fixed	F
Group-Flashing	FL (3)
Group-Occulting	OC (2)
Interrupted Quick-Flashing	IQ
Isophase	ISO
Morse Code	MO (A)
Occulting	OC
Single-Flashing	FL

Sound Signal Characteristics

Blast	BL
Every	EV
Seconds	S
Silent	SI

Colors*

Black	B
Blue	BU
Green	G
Orange	OR
Red	R
White	W
Yellow	Y

*NOTE: Color refers to characteristics of aids to navigation only.

Aids to Navigation

Aeronautical Radiobeacon	AERO RBN
Automatic Identification System	AIS
Daybeacon	DBN
Destroyed	DESTR
Differential GPS	DGPS
Discontinued	DISCONTD
Established	ESTAB
Exposed Location Buoy	ELB
Extinguished	EXT
Fog Signal Station	FOG SIG
Light List Number	LLNR

Light	LT
Lighted Bell Buoy	LBB
Lighted Buoy	LB
Lighted Gong Buoy	LGB
Lighted Horn Buoy	LHB
Lighted Whistle Buoy	LWB
Mariner Radio Activated	
Sound Signal	MRASS
Ocean Data Acquisition System	ODAS
Privately Maintained	PRIV MAINTD
Radar Reflector	RA REF
Radar Responder Beacon	RACON
Remote Radio Activated	
Sound Signal	RRASS
Single Point Mooring Buoy	SPM
Sound Signal	SS
Temporarily Replaced by	
Lighted Buoy	TRLB
Temporarily Replaced by	
Unlighted Buoy	TRUB
Topmark	TMK
Virtual AIS Aid to Navigation	V-AIS
Whistle	WHIS

Organizations

Commander, Coast Guard District CCGD (#)	
Coast Guard	CG
Corps of Engineers	USACE
National Geospatial-Intelligence Agency	NGA
National Ocean Service	NOS
National Weather Service	NWS

Vessels

Aircraft	A/C
Fishing Vessel	F/V
Liquefied Natural Gas Carrier	LNG
Motor Vessel (includes Steam Ship, Container Ship, Cargo Vessel, Tanker etc)	M/V
Pleasure Craft	P/C
Research Vessel	R/V
Sailing Vessel	S/V

Compass Directions

North	N
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South	S	Explosive Anchorage	EXPLOS ANCH
East	E	Fathom(s)	FM(S)
West	W	Foot/Feet	FT
Northeast	NE	Harbor	HBR
Northwest	NW	Height	HT
Southeast	SE	Hertz	HZ
Southwest	SW	Horizontal Clearance	HOR CL
		Hour	HR
<u>Months</u>		International Regulations for	
January	JAN	Preventing Collisions at Sea	COLREGS
February	FEB	Kilohertz	KHZ
March	MAR	Kilometer	KM
April	APR	Knot(s)	KT(S)
May	MAY	Minute (time, geo, pos)	MIN
June	JUN	Megahertz	MHZ
July	JUL	Moderate	MOD
August	AUG	Mountain, Mount	MT
September	SEP	Nautical Mile(s)	NM
October	OCT	Notice to Mariners	NTM
November	NOV	Obstruction	OBSTR
December	DEC	Occasion/Occasionally	OCCASION
		Operating Area	OPAREA
<u>Days of the Week</u>		Pacific	PAC
Monday	MON	Point(s)	PT(S)
Tuesday	TUE	Position	POS
Wednesday	WED	Position Approximate	PA
Thursday	THU	Pressure	PRES
Friday	FRI	Private, Privately	PRIV
Saturday	SAT	Prohibited	PROHIB
Sunday	SUN	Publication	PUB
		Range	RGE
<u>Various</u>		Reported	REP
Anchorage	ANCH	Restricted	RESTR
Anchorage Prohibited	ANCH PROHIB	River	RIV
Approximate	APPROX	Rock	RK
Atlantic	ATL	Saint	ST
Authorized	AUTH	Second (time, geo, pos)	SEC
Average	AVG	Signal Station	SIG STA
Bearing	BRG	Station	STA
Breakwater	BKW	Statute Mile(s)	SM
Broadcast Notice to Mariners	BNM	Storm Signal Station	S SIG STA
Canadian Aid	(C)	Temporary	TEMP
Captain of the Port	COTP	Thunderstorm	TSTORM
Channel	CHAN	Through	THRU
Code of Federal Regulations	CFR	True	T
Continue	CONT	Uncovers, Dries	UNCOV
Degrees (temp, geo, pos)	DEG	Universal Coordinate Time	UTC
Diameter	DIA	Urgent Marine Information Broadcast	UMIB
Edition	ED	Velocity	VEL
Effect/Effective	EFF	Vertical Clearance	VERT CL
Entrance	ENTR	Vessel Traffic Service	VTS

Visibility	VIS	Missouri	MO
Yard(s)	YD	Mississippi	MS
Warning	WARN	Mexico	MX
Weather	WX	Michigan	MI
Wreck	WK	Minnesota	MN

Countries and States

Alabama	AL	Nevada	NV
Alaska	AK	New Hampshire	NH
American Samoa	AS	New Jersey	NJ
Arizona	AZ	New Mexico	NM
Arkansas	AR	New York	NY
California	CA	North Carolina	NC
Canada	CN	North Dakota	ND
Colorado	CO	Northern Marianas	MP
Connecticut	CT	Ohio	OH
Delaware	DE	Oklahoma	OK
District of Columbia	DC	Oregon	OR
Florida	FL	Pennsylvania	PA
Georgia	GA	Puerto Rico	PR
Guam	GU	Rhode Island	RI
Hawaii	HI	South Carolina	SC
Idaho	ID	South Dakota	SD
Illinois	IL	Tennessee	TN
Indiana	IN	Texas	TX
Iowa	IA	United States	US
Kansas	KS	Utah	UT
Kentucky	KY	Vermont	VT
Louisiana	LA	Virgin Islands	VI
Maine	ME	Washington	WA
Maryland	MD	West Virginia	WV
Marshall Islands	MH	Wisconsin	WI
Massachusetts	MA	Wyoming	WY

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 Lights: 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 on fixed aids and by sea motion on buoys.

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, and daybeacons.

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

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 a 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 a 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 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 steady, 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 characteristic.

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 the light in each period is clearly shorter than the total duration of the darkness and in which the flashed 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 devise used to automatically determine conditions of visibility which warrant the activation 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.

Global Positioning System (GPS): A satellite based radio-navigation system providing continuous worldwide coverage. It provides navigation, position, and timing information to air, marine, and land users.

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, 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 Flash: 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.

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

Lateral System: A system of aids to navigation in which characteristics of buoys and beacons indicate the sides of a 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 a 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 waterways within that district.

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.

Luminous Range: The greatest distance a light can be expected to be seen given its nominal range and the prevailing meteorological visibility.

Mark: A visual aid to navigation. Often called navigational mark, including 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 case of night observations, could be seen and recognized if the general illumination were raised to the 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 the 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 that is 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.

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.

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 the channel centerline. The front range light is the lower of the two, and nearer to the mariner using the range. The rear 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 a 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.

Sector: See light sector.

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

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.

Topmark: One or more relatively small objects of characteristic shape and color placed on 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.

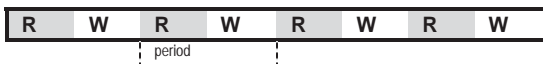
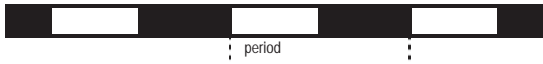
Winter Marker: An unlighted buoy without a sound signal, used to replace a conventional buoy when an aid to navigation is endangered by ice.

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 the same characteristic.

Withdrawn: The discontinuance of an aid to navigation or equipment on an aid to navigation during severe ice conditions or for the winter season.

CHARACTERISTICS OF LIGHTS

Illustration



Type Description

1. **FIXED.**
A light showing continuously and steadily.
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
 - 2.1 **Single-occulting.**
An occulting light in which an eclipse is regularly repeated.
 - 2.2 **Group-occulting.**
An occulting light in which a group of eclipses, specified in numbers, is regularly repeated.
 - 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.
3. **ISOPHASE.**
A light in which all durations of light and darkness are equal.
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.
 - 4.1 **Single-flashing.**
A flashing light in which a flash is regularly repeated (frequency not exceeding 30 flashes per minute).
 - 4.2 **Group-flashing.**
A flashing light in which a group of flashes, specified in number, is regularly repeated.
 - 4.3 **Composite group-flashing.**
A light similar to a group flashing light except that successive groups in the period have different numbers of
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.
 - 5.2 **Interrupted quick.**
A quick light in which the sequence of flashes is interrupted by regularly repeated eclipses of constant and long duration.
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.
7. **FIXED AND FLASHING.**
A light in which a fixed light is combined with a flashing light of higher luminous intensity.
8. **ALTERNATING.**
A light showing different colors alternately

Abbreviation

- F
- Oc
- Oc (2)
- Oc (2+1)
- Iso
- FI
- FI (2)
- FI (2+1)
- Q
- I Q
- Mo (A)
- F FI
- AI RW

RIVER DESCRIPTIONS

Allegheny River

The Allegheny River rises in north central Pennsylvania, flows in a northwesterly direction into southwestern New York, then flows back into Pennsylvania to Pittsburgh, where it joins the Monongahela River to form the Ohio River. The lower part of the river has been improved by the construction of locks and dams.

A channel depth of 9.0 feet is maintained throughout the pooled area which extends to mile 72.0 above East Brady, Pennsylvania. Channel depths above mile 72.0 may drop to as low as 1.0 to 2.0 feet during low water stages.

Big Sandy River

The Big Sandy River is formed at Louisa, Kentucky by the confluence of the Tug and Levisa Forks, and flows in a northerly direction for 27.4 miles into the Ohio River at mile 317.0.

The present practical head of navigation is mile 7.2, with a channel depth of 9.0 feet maintained by the Army Corps of Engineers. Slack water from the Ohio River Greenup Pool extends up the Big Sandy River to mile 8.6.

This river, which forms a portion of the Kentucky-West Virginia border, should not be confused with an identically named river in northwestern Tennessee which flows into the Tennessee River at mile 67.0. See Tennessee River listing for information on Aids to Navigation on that waterway.

Canadian River

The Canadian River is a navigable waterway of the United States from its mouth off the Arkansas River at approximate mile 355.1 to the head of navigation at mile 183.0. Lake Eufaula Dam is located near Briartown, Oklahoma.

Clinch River

The Clinch River rises in northwestern Virginia in Tazewell County and flows in a southwesterly direction for approximately 220.0 miles, joining the Tennessee River one mile below Kingston, Tennessee at mile 567.7.

From the mouth to mile 61.5, upstream from Clinton, Tennessee, a channel depth of 9.0 feet and a minimum width of 125.0 feet is provided and is marked with unlighted buoys and daymarks.

Cumberland River

The Cumberland River is formed by the confluence of Poor and Clover Forks in the southeastern part of Kentucky flowing southwesterly into Tennessee, thence northwesterly into Kentucky and empties into the Ohio River near Smithland, Kentucky, 920.5 miles below Pittsburgh. The head of navigation is at mile 381.0 near Celina, Tennessee.

The present navigation project on the Cumberland River provides for a navigable depth of 9.0 feet from mile 0.0 to mile 308.0 and a depth of 6.0 feet from mile 308.0 to mile 381.0.

First and Second class safety landings are available for use in various locations on the Cumberland River. These landings are shown on U.S. Army Corps of Engineers river charts and are not listed within this publication.

Green River

The river is navigated by commercial carriers from the mouth to mile 108.5 at Lock No. 3 near Skilesville, Kentucky. In this section, a channel 9.0 feet deep and 200.0 feet wide is maintained for the first 103.0 miles. Above that point to mile 149.0, a depth of 5.5 feet is maintained.

A navigable depth cannot be maintained from mile 108.5 to mile 167.9 at Lock No. 5 due to failure of Dam No. 4. Lock No. 4, Lock No. 5 and Lock No. 6 at mile 181.6 are closed to Navigation. Pleasure craft operate in the pools above to latter two dams.

Hiwassee River

The Hiwassee River is a navigable tributary entering the Tennessee River in Chichamauga Reservoir at mile 499.4, approximately 35.0 miles from Chattanooga, Tennessee.

From the mouth to mile 20.4 upstream from Charleston, Tennessee, a channel depth of 9.0 feet and a minimum width of 200.0 feet is provided and is marked with unlighted buoys and daymarks.

Illinois Waterway

The Illinois Waterway rises in the vicinity of Chicago, Illinois and embraces improved natural waterways and canals to empty into the Upper Mississippi River at Grafton, Illinois. Through a controlling works, Lake Michigan waters enter the Chicago River flowing westerly. A branch of the waterway, the Calumet-Sag Channel, leaves the main waterway at mile 303.5 near Lemont, Illinois and proceeds southeasterly to join the Little Calumet, Calumet and the Grand Calumet Rivers, thus affording access to Lake Michigan at Calumet Harbor, Illinois.

In this publication, the waterway is described in its entirety with a channel depth of 9.0 feet provided throughout.

Aids to navigation for all branches of the waterway between Lake Michigan and Lockport Lock and Dam, mile 291.1, are under the jurisdiction of the Commander, Ninth Coast Guard District, Cleveland, Ohio.

Aids to navigation between Lockport Lock and Dam and the mouth of the Illinois River are under the jurisdiction of the Commander, Eighth Coast Guard District, New Orleans, Louisiana.

Vertical clearances under bridges between Lake Michigan and Lockport Lock and Dam are shown above low water datum (LWD), for Lake Michigan. Lesser clearances may prevail for a few hours after heavy rainfall in the Chicago area.

Kanawha River

The Kanawha River is formed by the confluence of the New and Bauley Rivers in southwestern West Virginia. It flows in a northwesterly direction and empties into the Ohio River at Point Pleasant, West Virginia, 265.7 miles below Pittsburgh.

The river is pooled by dams. A channel depth of 9.0 feet is maintained throughout the improved section, to mile 90.6.

Kaskaskia River

The Kaskaskia River is about 325.0 miles in length. It rises in Champaign County, Illinois and flows in a southeasterly direction across Illinois and empties into the Upper Mississippi River, 117.4 miles above the mouth of the Ohio River.

The Army Corps of Engineers is presently improving the lower 50.0 miles of the river for navigation. After completion, a navigable channel of 9.0 feet deep by 225.0 feet wide will be available from the mouth of the river to Fayetteville, Illinois, project mile 36.2. The Coast Guard considers the Kaskaskia River to project mile 36.2. The present head of navigation is project mile 29.2.

Reflectorized mile markers (old river mileage) have been installed along portions of the waterway but are not individually listed in this publication.

Lake Texoma

Lake Texoma is a navigable waterway of the United States located on the Red River at Denison Dam, mile 725.9, near Denison, Texas. The lake lies on the border of Texas and Oklahoma.

Little Tennessee River

The Little Tennessee River is a navigable tributary formed in the Great Smokey Mountains flowing in a northerly direction. It enters the Tennessee River just downstream from Fort Loudon Dam. Telleco Dam, located at Little Tennessee River mile 0.3, is bypassed via a 1000 foot canal which joins Telleco and Fort Loudon reservoirs just upstream from each dam. A channel with a depth of 11.0 feet and width of 200.0 feet is provided from the entrance of the canal to mile 19.1 and maintained by the Army Corps of Engineers.

Lower Mississippi River

The Lower Mississippi River is formed at Cairo, Illinois, by the confluence of the Upper Mississippi and Ohio Rivers, and flows southerly to empty into the Gulf of Mexico, 115.0 miles south of New Orleans, Louisiana, via Southwest Pass.

The origin or zero of the mileage system is the Head of Passes, 95.0 miles below New Orleans and 20.0 miles above the Gulf of Mexico via Southwest Pass. Cairo, Illinois, at the head of the river, is at mile 955.8 AHP (Above Head of Passes).

The river has been improved to provide a project depth of 12.0 feet above Baton Rouge, Louisiana, mile 232.5 to Cairo, Illinois, mile 955.8. A channel depth of at least 40.0 feet is provided below Baton Rouge, Louisiana. Channel depths of 9.0 feet are maintained during low water stages. There are no locks or dams.

Upper Mississippi River

The Upper Mississippi River rises at Lake Itasca, Minnesota, and flows generally southward to join the Ohio River at Cairo, Illinois. The head of navigation is the Soo Line Railroad Bridge, mile 857.6 at Minneapolis Upper Harbor, Minnesota.

From the head of navigation to Lock and Dam No. 26, at Alton, Illinois, mile 203.1; the river is improved with locks and dams providing a project depth of 9.0 feet. Below Alton, Illinois to mile 0.0 at Cairo, Illinois a project depth of 9.0 feet is maintained by dredging when necessary.

Between mile 194.3 and mile 184.0, the open river Chain of Rocks Reach is bypassed by the Chain of Rocks Canal, containing Lock No. 27. The canal also has a project depth of 9.0 feet.

Minnesota River

The Minnesota River rises in Big Stone Lake in west central Minnesota. It flows southeasterly, then northeasterly for 330.0 miles to enter the Upper Mississippi River opposite St. Paul, Minnesota.

From the mouth to mile 14.7, a channel with a depth of 9.0 feet and a general width of 150.0 feet is provided and maintained by the Army Corps of Engineers. From mile 14.7 to mile 21.8, a channel with a depth of 9.0 feet and a general width of 100.0 feet is provided and maintained by private interests. From mile 21.8 to mile 25.2, the river is in natural condition with a controlling depth of less than 3.0 feet and a width of about 50.0 feet.

Missouri River

The Missouri River is formed in southwestern Montana by the confluence of the Jefferson, Madison and Gallatin Rivers at Three Forks, Montana. The river flows successively northerly and southeasterly for 2,315.2 miles (1960 mileage) to join the Mississippi River 15.3 miles above St. Louis, Missouri.

The present practical head of navigation is Sioux City, Iowa. Water released from upstream storage reservoirs permits regulation and maintenance of a 9-foot channel between Sioux City and the mouth of the river.

Portable daymarks without number boards are frequently relocated as channel conditions become known. These portable daymarks are not listed within this publication.

The commercial navigation season is normally open from late March to late November at Sioux City and from April 1 to December 1 at the mouth. Ice conditions and low water preclude navigation for the rest of the year.

Mariners are reminded that all lighted and floating aids to navigation are discontinued or removed from the Missouri River when the commercial navigation season has ended. Mariners will be notified in advance when the season opens and closes.

Monongahela River

The Monongahela River is formed by the confluence of the West Fork and Tygart Rivers about one mile south of Fairmont, West Virginia. It flows in a northeasterly direction into southwestern Pennsylvania and then in a northerly direction to Pittsburgh, Pennsylvania where it joins the Allegheny River to form the Ohio River.

The river is pooled by dams. Channel depths of 9.0 feet are available up to the head of navigation, mile 128.7.

Ohio River

The Ohio River is formed by the confluence of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, mile 0.0, and flows generally southwestward for 981.0 miles, joining the Mississippi River at Cairo, Illinois.

Between Pittsburgh, Pennsylvania and Lock and Dam No. 53, mile 962.6, the river has been improved with locks and dams. Below mile 962.6, dredging is performed as required. This improvement and maintenance provide a project depth of 9.0 feet for the entire river.

Ouachita-Black Waterway

The Ouachita-Black Waterway rises in the vicinity of Camden, Arkansas, and embraces improved natural waterways to the Lower Mississippi River at mile 304.0 AHP via the Red and Lower Old River. It also connects with the Gulf Intracoastal Waterway (West) via the Red River and Atchafalaya River.

The authorized navigation project provides a channel depth of 12.0 feet and a width of 125.0 feet on the Lower Old River (Red). The remainder of the Waterway provides a depth of 9.0 feet and a width of 100.0 feet.

Red River

The Red River Waterway project provides a channel depth of 9.0 feet and a width of 200 feet for approximately 294 miles from the mouth of the Lower Old River at Lower Mississippi River mile 304.0 to the Caddo-Bossier Port Commission Light. The waterway consists of five locks and dams, and numerous cut-offs and bank re-alignments. The waterway is marked by aids to navigation to mile 211.4.

St. Croix River

The St. Croix River rises in northwestern Wisconsin and flows in a southerly direction for approximately 164.0 miles, joining the Upper Mississippi River at Prescott, Wisconsin.

From the mouth to Stillwater, Minnesota, mile 24.5, the authorized navigation project provides a channel with a depth of 9.0 feet and a width of at least 300.0 feet during the navigation season. The river is closed by ice for about four months in the winter. Pool stage is provided by Dam No. 3, Upper Mississippi River, mile 796.9.

From Stillwater to Taylor Falls, a distance of 28.5 miles, the open channel is about 1.5 feet deep and 50.0 feet wide at low discharges.

Tennessee River

The Tennessee River, which is formed by the confluence of the Holston and French Broad Rivers 5 miles above Knoxville, Tennessee, flows successively southwest, west and north through parts of Alabama, Mississippi, Tennessee, and Kentucky, to empty into the Ohio River at Paducah, Kentucky, 934.4 miles below Pittsburgh, Pennsylvania and 44.9 miles above Cairo, Illinois. Total length of the river is about 652.0 miles.

A navigable channel with a depth of 9.0 feet is provided from the mouth at Paducah, Kentucky to 652.0.

Many tributaries of the Tennessee River have adequate depths of 9.0 feet. Approximate notes on navigability are shown for each stream buoyed by the Coast Guard.

Other tributary and secondary channels of the Tennessee River are buoyed by the Tennessee Valley Authority.

First and Second class safety landings are available for use in various locations on the Tennessee River. These landings are shown on the U.S. Army Corps of Engineers river charts and are not listed within this publication.

Tennessee-Tombigbee Waterway

The Tennessee-Tombigbee Waterway extends upstream from Demopolis, Alabama mile 217.0 via the Tombigbee River through the basin divide into the Yellow Creek Embayment of Pickwick Lake at mile 215.2 on the Tennessee River, which is mile 450.7 on the Tennessee-Tombigbee Waterway. This represents a total distance of 234.0 navigable miles which is comprised of river, canal, and divide sections. The river section (149.0 miles) extends up the Tombigbee River from Demopolis, Alabama to a point just south of Armory, Mississippi.

Ten locks and five dams improve the river, and depths of 9.0 feet are provided within the river section and 12.0 feet within the canal and divide sections.

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INDEX OF CITIES, TOWNS AND LANDINGS ON THE MISSISSIPPI RIVER

Cities, Towns, and Landings	Mile	Bank	River	Cities, Towns, and Landings	Mile	Bank	River
A							
Aberdeen, OH.....	408.4	R	Ohio	Catlettsburg, KY.....	317.2	L	Ohio
Albany, IL.....	513.5	L	Upper Miss	Cave-in-Rock, IL.....	881.0	R	Ohio
Alexandria, MO.....	359.1	R	Upper Miss	Cement City, MO.....	355.0	R	Missouri
Aliquippa, PA.....	20.0	L	Ohio	Chamois, MO.....	117.8	R	Missouri
Alma, WI.....	752.7	L	Upper Miss	Charlerio, PA.....	42.0	L	Monongahela
Alton, IL.....	203.1	L	Upper Miss	Charleston, TN.....	18.7	L	Hiwassee
Alton, IN.....	679.0	R	Ohio	Charleston, WV.....	58.4	R	Kanawha
Ambridge, PA.....	16.0	R	Ohio	Chattanooga, TN.....	464.1	L	Tennessee
Andalusia, IL.....	473.0	L	Upper Miss	Cheshire, OH.....	257.6	R	Ohio
Angola, LA.....	302.7	L	Lower Miss	Chester, IL.....	109.5	L	Upper Miss
Arkansas City, AR.....	556.5	L	Lower Miss	Chesterfield, MO.....	39.0	R	Missouri
Ashland, KY.....	322.6	L	Ohio	Chicago, IL.....	320.0		Illinois
Ashland City, TN.....	158.2	R	Cumberland				Waterway
Atchison, KS.....	422.4	R	Missouri	Chillicothe, IL.....	180.5	R	Illinois
Athalia, OH.....	296.6	R	Ohio	Cincinnati, OH.....	470.3	R	Ohio
Augusta, KY.....	427.0	L	Ohio	Cincinnati Landing, IL..	296.4	L	Upper Miss
Aurora, IN.....	496.6	R	Ohio	Clarington, OH.....	117.8	R	Ohio
B				Clarksville, MO.....	273.1	R	Upper Miss
Bayou Sara LA.....	265.7	L	Lower Miss	Clarksville, TN.....	126.1	R	Cumberland
Beardstown, IL.....	88.5	L	Illinois	Claryville, MO.....	109.0	R	Upper Miss
Bedford, IL.....	48.5	R	Illinois	Clayton, IA.....	624.7	R	Upper Miss
Bellaire, OH.....	94.5	R	Ohio	Clifton, TN.....	158.1	R	Tennessee
Belle Vernon, PA.....	43.5	R	Monongahela	Clinton, IA.....	518.2	R	Upper Miss
Bellevue, IA.....	556.7	R	Upper Miss	Clinton, TN.....	57.0	R	Clinch
Bellevue, NE.....	601.4	R	Missouri	Cloverport, KY.....	711.1	L	Ohio
Belmont, MO.....	936.9	R	Lower Miss	Columbus, KY.....	937.0	L	Lower Miss
Belpre, OH.....	184.2	R	Ohio	Commerce, MO.....	39.5	R	Upper Miss
Benwood, WV.....	94.0	L	Ohio	Concord, TN.....	617.2	R	Tennessee
Bernhaimer, MO.....	86.3	L	Missouri	Cordova, IL.....	503.1	L	Upper Miss
Bettendorf, IA.....	485.7	R	Upper Miss	Cottonwood Point, MO..	832.8	R	Lower Miss
Birk City, KY.....	22.9	R	Green	Council Bluffs, IA.....	615.9	L	Missouri
Black Walnut, MO.....	16.5	L	Missouri	Covington, KY.....	470.5	L	Ohio
Blair, NE.....	648.3	R	Missouri	Crown City, OH.....	290.9	R	Ohio
Bluff City, KY.....	13.5	L	Green	Cumberland City, TN...	104.1	L	Cumberland
Boonville, MO.....	196.7	R	Missouri	D			
Braddock, PA.....	10.6	R	Monongahela	Dakota, MN.....	706.9	R	Upper Miss
Brandenburg, KY.....	646.1	L	Ohio	Dakota City, NE.....	726.0	R	Missouri
Brickeys Mill Landing, MO	135.9	R	Upper Miss	Dallas City, IL.....	390.7	L	Upper Miss
Brookport, IL.....	937.4	R	Ohio	Davenport, IA.....	482.4	R	Upper Miss
Browning, IL.....	97.3	R	Illinois	Dayton, TN.....	504.4	R	Tennessee
Brownville, NE.....	535.3	R	Missouri	Decatur, AL.....	304.5	L	Tennessee
Brownsville, MN.....	689.0	R	Upper Miss	Decatur, NE.....	691.0	R	Missouri
Brownsville, PA.....	56.0	R	Monongahela	DeSoto, WI.....	667.6	L	Upper Miss
Buena Vista Springs, TN	187.1	L	Cumberland	Diamond Bluff, WI.....	800.3	L	Upper Miss
Buffalo, IA.....	473.0	R	Upper Miss	Donaldsonville, LA.....	175.3	R	Lower Miss
Burlington, IA.....	403.9	R	Upper Miss	Dover KY.....	419.7	L	Ohio
Burlington, OH.....	313.2	R	Ohio	Dover, TN.....	88.8	L	Cumberland
C				Dover Station, MO.....	305.5	R	Missouri
Cairo, IL.....	2.0	R	Lower Miss	Dresback, MN.....	705.5	R	Upper Miss
.....	979.3	R	Ohio	Dubuque, IA.....	579.4	R	Upper Miss
Calhoun, KY.....	63.6	L	Green	Dundee, MO.....	76.5	R	Missouri
Camanche, IA.....	511.7	R	Upper Miss	Dycusburg, KY.....	19.6	R	Cumberland
Cannelton, IN.....	724.0	R	Ohio	E			
Canton, KY.....	62.8	R	Cumberland	East Brady, PA.....	69.3	L	Allegheny
Canton, MO.....	342.3	R	Upper Miss	East Dubuque, IL.....	579.8	L	Upper Miss
Cape Girardeau, MO...	52.0	R	Upper Miss	East Liverpool, OH.....	43.5	R	Ohio
Carrollton, KY.....	545.7	L	Ohio	East St. Louis, IL.....	180.0	L	Upper Miss
Carthage, TN.....	308.1	R	Cumberland	Eddyville, KY.....	43.7	R	Cumberland
Caruthersville, MO.....	846.0	R	Lower Miss	Elizabeth, PA.....	22.9	R	Monongahela
Caseyville, KY.....	871.2	L	Ohio	Elizabethtown, IL.....	889.0	R	Ohio
Cassville, WI.....	606.6	L	Upper Miss	Evansville, IN.....	792.3	R	Ohio

INDEX OF CITIES, TOWNS AND LANDINGS ON THE MISSISSIPPI RIVER

Cities, Towns, and Landings	Mile	Bank	River	Cities, Towns, and Landings	Mile	Bank	River
F				I			
Fairmont, WV	127.2	L	Monongahela	Ironton, OH	327.2	R	Ohio
Fairport, IA	463.1	R	Upper Miss	Isbell, MO	127.7	R	Missouri
Fayette City, PA	46.0	R	Monongahela	J			
Florence, AL	256.4	R	Tennessee	Jefferson City, MO	143.2	R	Missouri
Florence, IL	55.7	R	Illinois	Jeffersonville, IN	602.8	R	Ohio
Ford City, PA	41.9	L	Allegheny	Jersey Landing (Elash), IL	214.3	L	Upper Miss
Fort Gage, IL	115.6	L	Upper Miss	Johnsonville, TN	100.5	R	Tennessee
Fort Madison, IA	383.4	R	Upper Miss	Jonesville, LA	40.0	R	Ouchita-Black
Fredrick, IL	91.7	R	Illinois	Joliet, IL	288.0	R	Illinois
Fountain City, WI	732.9	L	Upper Miss	K			
Freeport, PA	29.0	R	Allegheny	Kampsville, IL	32.0	R	Illinois
Friar Point, MS	652.0	L	Lower Miss	Kansas City, MO	365.8	R	Missouri
Frontenac, MN	779.0	R	Upper Miss	Kaskaskia, IL	114.0	R	Upper Miss
Fulton, IL	520.3	L	Upper Miss	Keithsburg, IL	427.5	L	Upper Miss
Fulton, TN	778.2	L	Lower Miss	Keokuk, IA	363.8	R	Upper Miss
G				Kimmswick, MO	159.0	R	Upper Miss
Gallipolis, OH	269.7	R	Ohio	Kingston, TN	567.8	R	Tennessee
Genoa, WI	679.5	L	Upper Miss	Kingston Landing, IL	145.6	R	Illinois
Ghent, KY	537.5	L	Ohio	Kittanning, PA	45.1	L	Allegheny
Glasgow, MO	226.5	L	Missouri	Knoxville, TN	647.7	R	Tennessee
Glenwood, WV	286.0	L	Ohio	Kuttawa, KY	41.4	R	Cumberland
Golconda, IL	902.4	R	Ohio	L			
Grafton, IL	0.1	L	Illinois	Lacon, IL	189.1	L	Illinois
.....	218.0	L	Upper Miss	LaCrosse, WI	697.9	L	Upper Miss
Grand Lake, AR	513.0	R	Lower Miss	La Grange Landing, La	80.3	R	Illinois
Grand Pass, IL	43.1	L	Illinois	La Grange, MO	336.0	R	Upper Miss
Grand Rivers, KY	24.1	R	Tennessee	Lake City, MN	772.6	R	Upper Miss
Grand Tower, IL	80.0	L	Upper Miss	Lake Providence, LA	487.5	R	Lower Miss
Granite City, IL	183.5	L	Upper Miss	Lancaster Landing, IL	144.1	R	Illinois
Greensboro, PA	84.5	L	Monongahela	Lansing, IA	663.2	R	Upper Miss
Greenup, KY	336.0	L	Ohio	La Salle, IL	224.1	R	Illinois
Greenville, MS	537.2	L	Lower Miss	Lawrenceburg, IN	493.0	R	Ohio
Griggsville Landing, IL	60.9	R	Illinois	Leavenworth, IN	664.1	R	Ohio
Guntersville, AL	358.1	L	Tennessee	Leavenworth, KS	397.0	R	Missouri
Guttenburg, IA	614.8	R	Upper Miss	Le Claire, IA	497.1	R	Upper Miss
Guyandot, WV	305.0	L	Ohio	Lemont, IL	300.7	L	Illinois
H				Lenoir, KY	601.1	L	Tennessee
Hadleys Landing, IL	13.6	R	Illinois	Lewisport, KY	737.9	L	Ohio
Hamburg, IL	258.6	L	Upper Miss	Lexington, MO	317.3	R	Missouri
Hamburg, MO	47.4	L	Missouri	Linton, KY	73.2	R	Cumberland
Hannibal, MO	308.8	R	Upper Miss	Little Rock, AR	177.0	R	Arkansas
Hardin, IL	20.7	R	Illinois	Livermore, KY	71.0	R	Green
Hastings, MN	813.8	R	Upper Miss	Liverpool, IL	128.0	R	Illinois
Havana, IL	120.1	L	Illinois	Lockport, IL	292.7	L	Illinois
Hawesville, KY	723.9	R	Ohio	Long Bottom, OH	209.4	R	Ohio
Helena, AK	663.4	L	Lower Miss	Loudon, TN	591.6	L	Tennessee
Henderson, KY	803.9	L	Ohio	Louisiana, MO	283.8	R	Upper Miss
Hennepin, IL	207.5	L	Illinois	Louisville, KY	603.8	L	Ohio
Henry, IL	195.7	R	Illinois	Lupus, MO	174.8	R	Missouri
Herculaneum, MO	151.8	R	Upper Miss	Luxora, AR	788.5	R	Lower Miss
Hermann, MO	97.9	R	Missouri	Lynxville, WI	651.1	L	Upper Miss
Hickman, KY	922.0	L	Lower Miss	Lyons, IA	520.4	R	Upper Miss
Higginsport, OH	424.6	R	Ohio	M			
Homer, MN	720.7	R	Upper Miss	McGregor, IA	633.5	R	Upper Miss
Homestead, PA	7.5	L	Monongahela	McKeesport, PA	15.4	R	Monongahela
Hudson, WI	16.7	L	St. Croix	Machens, MO	14.8	L	Missouri
Huntington, WV	308.3	L	Ohio	Madison, IN	557.8	R	Ohio

INDEX OF CITIES, TOWNS AND LANDINGS ON THE MISSISSIPPI RIVER

Cities, Towns, and Landings	Mile	Bank	River	Cities, Towns, and Landings	Mile	Bank	River				
Mahoning Creek, PA....	55.6	L	Allegheny	Oak Ridge, TN.....	57.6	R	Clinch				
Malden, WV.....	64.3	R	Kanawha	Oakmont, PA.....	12.0	L	Allegheny				
Manchester, OH.....	397.3	R	Ohio	Old Hickory, TN.....	219.5	L	Cumberland				
Manorville, PA.....	43.1	L	Allegheny	Omaha, NE.....	615.9	R	Missouri				
Marietta, OH.....	171.9	R	Ohio	Oquawka, IL.....	415.8	L	Upper Miss				
Marion, MO.....	158.0	R	Missouri	Osceloa, AR.....	786.0	R	Lower Miss				
Marquette, IA.....	634.7	R	Upper Miss	Ottawa, IL.....	239.5	L	Ohio				
Marseilles, IL.....	247.3	R	Illinois	O							
Martins Ferry, OH.....	88.8	R	Ohio	P							
Marthasville, MO.....	73.9	L	Missouri	Paden City, WV.....	133.3	L	Ohio				
Mauckport, IN.....	648.3	R	Ohio	Paducah, KY.....	0.0	L	Tennessee				
Maysville, KY.....	408.5	L	Ohio	.....	934.4	L	Ohio			
Memphis, TN.....	736.0	L	Lower Miss	Parkersburg, WV.....	184.5	L	Ohio				
Meridosia, IL.....	71.3	L	Illinois	Parkville, MO.....	377.6	L	Missouri				
Metropolis, IL.....	943.8	R	Ohio	Pearl Landing, IL.....	41.9	R	Illinois				
Miami, MO.....	262.7	R	Missouri	Pekin, IL.....	152.8	L	Illinois				
Middleport, OH.....	252.6	R	Ohio	Peoria, IL.....	162.6	R	Illinois				
Midland, PA.....	36.5	R	Ohio	Pepin, MN.....	767.1	L	Upper Miss				
Miller, OH.....	295.0	R	Ohio	Perryville, TN.....	135.5	L	Tennessee				
Millsboro, PA.....	65.5	L	Monongahela	Peru, IL.....	222.7	R	Illinois				
Millwood, WV.....	231.4	L	Ohio	Phillipston, PA.....	66.5	L	Allegheny				
Mining City, KY.....	117.7	L	Green	Pickwick Landing, TN..	206.7	L	Tennessee				
Minneapolis, MN.....	853.0	R	Upper Miss	Pinckneyville, KY.....	15.9	R	Cumberland				
Minneiska, MN.....	742.2	R	Upper Miss	Pine Bluff, AR.....	72.0	R	Arkansas				
Missouri City, MO.....	344.2	L	Missouri	Pittsburgh, PA.....	0.6	R	Monongahela				
Moccason Springs, MO	66.3	R	Upper Miss	.....	0.0	L	Allegheny			
Mokane, MO.....	123.3	L	Missouri	.....	0.0	R	Ohio			
Moline, IL.....	486.0	L	Upper Miss	Pittsburg Landing, TN..	198.1	L	Tennessee				
Monongahela, PA.....	31.9	L	Monongahela	Plaquemine, LA.....	208.6	R	Lower Miss				
Montezuma, IL.....	50.1	R	Illinois	Plattsmouth, NE.....	591.2	R	Missouri				
Montpelier, IA.....	468.5	R	Upper Miss	Point Douglas, MN.....	812.5	L	Upper Miss				
Montrose, IA.....	374.8	R	Upper Miss	Point Marion, PA.....	89.7	R	Monongahela				
Morgantown, KY.....	143.2	L	Green	Point Pleasant, WV.....	0.0	R	Kanawha				
Morgantown, WV.....	101.1	R	Monongahela	.....	265.4	L	Ohio			
Morris, IL.....	263.3	R	Illinois	Pomeroy, OH.....	249.7	R	Ohio				
Moscow, OH.....	442.6	R	Ohio	Pontoosac, IL.....	388.6	L	Upper Miss				
Mossville, IL.....	171.9	R	Illinois	Port Byron, IL.....	497.7	L	Upper Miss				
Mound City, IL.....	973.3	R	Ohio	Portage, MO.....	212.4	R	Upper Miss				
Moundsville, WV.....	101.9	L	Ohio	Portland, MO.....	114.2	L	Missouri				
Mount Vernon, IN.....	829.2	R	Ohio	Portsmouth, OH.....	356.0	R	Ohio				
Mozier Landing, IL.....	260.3	L	Upper Miss	Powhatan, OH.....	109.8	R	Ohio				
Muscatine, IA.....	455.2	R	Upper Miss	Prairie Du Chien, WI....	635.1	L	Upper Miss				
Myrick, MO.....	318.1	R	Missouri	Prescot, WI.....	0.1	L	St. Croix				
N											
Naples, IL.....	65.6	L	Illinois	.....	811.4	L	Upper Miss			
Napoleon, MO.....	329.2	R	Missouri	Princeton, IA.....	502.4	R	Upper Miss				
Nashville, TN.....	191.0	L	Cumberland	Proctorville, OH.....	304.5	R	Ohio				
Natchez, MS.....	364.2	L	Lower Miss	Q							
Nauvoo, IL.....	374.8	L	Upper Miss	Quincy, IL.....	327.1	L	Upper Miss				
Nebraska City, NE.....	561.9	R	Missouri	R							
New Albany, IN.....	608.5	R	Ohio	Racine, OH.....	241.6	R	Ohio				
New Boston, IL.....	433.0	L	Upper Miss	Rankin, PA.....	9.3	R	Monongahela				
Newburgh, IN.....	778.0	R	Ohio	Ravenwood, WV.....	220.5	L	Ohio				
New Cumberland, WV.	56.7	L	Ohio	Raymond City, WV.....	39.0	R	Kanawha				
New Haven, MO.....	81.6	R	Missouri	Reads Landing, MN.....	763.0	R	Upper Miss				
New Kensington, PA....	19.0	L	Allegheny	Red Bank Creek, PA....	64.0	L	Allegheny				
New Madrid, MO.....	890.0	R	Lower Miss	Red Wing, MN.....	790.9	R	Upper Miss				
New Martinsville, WV..	128.2	L	Ohio	Reelfoot, TN.....	857.5	L	Lower Miss				
New Orleans, LA.....	95.0	L	Lower Miss	Rices Landing, PA.....	68.1	L	Monongahela				
Newport, KY.....	469.8	L	Ohio	Rimerton, PA.....	60.2	L	Allegheny				
Newport, MN.....	830.9	L	Upper Miss	Ripley, OH.....	417.4	R	Ohio				
New Providence, TN....	125.0	R	Cumberland	Rising Sun, IN.....	506.0	R	Ohio				
New Richmond, OH.....	450.0	R	Ohio								

INDEX OF CITIES, TOWNS AND LANDINGS ON THE MISSISSIPPI RIVER

Cities, Towns, and Landings	Mile	Bank	River	Cities, Towns, and Landings	Mile	Bank	River
Rocheport, MO	186.5	L	Missouri				
Rochester, KY	109.0	L	Green				
Rochester, PA	25.1	R	Ohio	Toronto, OH	59.1	R	Ohio
Rockcastle, KY	56.0	R	Cumberland	Trempealeau, WI	714.7	L	Upper Miss
Rock Island, IL	482.3	L	Upper Miss	Trenton Landing, WI....	794.2	L	Upper Miss
Rockport, IN	747.2	R	Ohio	Troy, IN	730.9	R	Ohio
Rockport, KY	94.6	R	Green				
Rome, IL	177.8	R	Illinois				
Romeo, IL	396.3	L	Illinois				
Roseclare, IL	891.6	R	Ohio	Uniontown, KY	842.4	L	Ohio
Ruegg, MO	8.2	R	Missouri	Utica, IN	595.7	R	Ohio
Rulo, NE	498.0	R	Missouri				
Rumsey, KY	63.3	L	Green				
Rushville, MO	427.5	L	Missouri				
	S						
Sabula, IA	535.3	R	Upper Miss	Vanceburg, KY	377.9	L	Ohio
St. Albens, MO	53.9	R	Missouri	Verona, PA	11.0	L	Allegheny
St. Albens, WV	45.8	L	Kanawha	Vevay, IN	537.6	R	Ohio
St. Charles, MO	28.2	L	Missouri	Vicksburg, MS	0.0	L	Lower Miss
St. Francisville, LA	265.5	L	Lower Miss	Victory, WI	672.8	L	Upper Miss
St. Joseph, MO	448.2	L	Missouri	Vidalia, IA	363.3	R	Lower Miss
St. Louis, MO	180.0	R	Upper Miss				
St. Marys, WV	155.0	L	Ohio				
St. Paul, MN	839.1	L	Upper Miss				
St. Genevieve, MO	123.0	R	Upper Miss				
Salttillo, TN	172.2	L	Tennessee				
Sandy Hook, MO	164.9	R	Missouri				
Savanna, IL	537.4	L	Upper Miss				
Savannah, TN	189.8	R	Tennessee				
Saverton, MO	302.4	R	Upper Miss				
Sciotoville, OH	349.3	R	Ohio				
Selma, MO	146.4	R	Upper Miss				
Sewickly, PA	11.8	R	Ohio				
Sharpsburg, PA	6.0	R	Allegheny				
Shawneetown, IL	857.9	R	Ohio				
Sheffield, AL	254.2	L	Tennessee				
Sioux City, IA	732.3	L	Missouri				
Sisterville, WV	137.6	L	Ohio				
Smithland, KY	2.1	L	Cumberland				
.....	920.5	L	Ohio				
Smiths Landing, WI	804.4	L	Upper Miss				
Soddy, TN	487.7	R	Tennessee				
South Carrollton, KY	83.8	L	Green				
South Ottawa, IL	239.5	L	Illinois				
South Pittsburg, TN	418.2	R	Tennessee				
South Point, MO	66.0	R	Missouri				
South Sioux City, NE	730.5	R	Missouri				
Spring Bay, IL	174.0	L	Illinois				
Spring Valley, IL	218.4	R	Illinois				
Stephensport, KY	701.0	L	Ohio				
Sterlington, LA	192.5	L	Ouachita				
Steubenville, OH	68.0	R	Ouachita				
Stillwater, MN	23.3	R	St. Croix				
Stockholm, WI	774.4	L	Upper Miss				
Sulphur Springs, MO	156.7	R	Upper Miss				
Summit, IL	313.3	L	Illinois				
Syracuse, OH	245.2	R	Ohio				
	T						
Tarentum, PA	22.1	R	Allegheny				
Tell City, IN	727.0	R	Ohio				
Templeton, PA	54.4	L	Allegheny				
Thebes, IL	44.0	L	Upper Miss				
Tiptonville, TN	873.0	L	Lower Miss				

INDEX OF RIVER MOUTHS ON THE MISSISSIPPI RIVER SYTEM

River Mouth	Mile	Bank	Receiving River	River Mouth	Mile	Bank	Receiving River
A				L			
Arkansas River.....	582.2	R	Lower Miss	Lake Ferguson Chute (Entrance).....	537.0	L	Lower Miss
Atchafalaya River.....	6.9	L	Lower Old	Lamine River.....	202.5	R	Missouri
Auxvasse River.....	120.6	L	Missouri	Licking River.....	470.2	L	Ohio
B				Little Blue River.....	339.4	R	Missouri
Barkley Canal.....	25.2	R	Tennessee	Little Kanawha River.....	184.6	L	Ohio
Beaver River.....	25.4	R	Ohio	Little Miami River.....	463.5	R	Ohio
Bear Creek.....	225.0	L	Tennessee	Little Platte River.....	391.1	L	Missouri
Bennett Lake.....	432.0	R	Tennessee	Little River.....	59.0	R	Cumberland
Big Black River.....	304.0	R	Lower Miss	Little River.....	41.1	R	Ouachita
Big Blue River.....	358.0	R	Missouri	Little River.....	635.6	L	Tennessee
Big Nemaha River.....	494.9	R	Missouri	Little Tennessee River.....	602.6	L	Tennessee
Big Sandy River.....	67.0	L	Tennessee	M			
Big Sandy River.....	317.1	L	Ohio	Maquoketa River.....	548.6	R	Upper Miss
Black River.....	698.2	L	Upper Miss	Memphis Harbor- McKellar Lake.....	725.7	L	Lower Miss
Black River.....	34.2	L	Red (LMR)	Meramec River.....	160.7	R	Upper Miss
C				Minnesota River.....	844.0	R	Upper Miss
Cedar Creek.....	148.3	L	Missouri	Missouri River.....	195.3	R	Upper Miss
Chain of Rocks Canal.....	194.1	L	Missouri	Moreau River.....	138.6	R	Missouri
Chariton River.....	227.8	L	Missouri	Muskingum River.....	172.2	R	Ohio
Cheat River.....	88.8	R	Monongahela	N			
Chippewa River.....	763.5	L	Upper Miss	New Chariton River.....	238.8	L	Missouri
Clinch River.....	567.7	R	Tennessee	Nodaway River.....	462.9	L	Missouri
Crooked River.....	311.8	L	Missouri	O			
Cumberland River.....	920.5	L	Ohio	Obey River.....	380.8	L	Cumberland
D				Obion River.....	819.4	L	Lower Miss
Des Peres River.....	172.0	R	Upper Miss	Ohio River.....	0.0	L	Upper Miss
Duck River.....	110.8	R	Tennessee	.....	953.8	L	Lower Miss
E				Old River Mouth (Entrance Red and Atchafalaya Rivers).....	304.0	R	Lower Miss
East Channel Lower Entrance.....	633.0	L	Upper Miss	Old Wolf River.....	736.0	L	Lower Miss
East Channel Upper Entrance.....	636.4	L	Upper Miss	Osage River.....	129.9	R	Missouri
Elk River.....	284.1	R	Tennessee	P			
Elk River.....	57.8	R	Kanawha	Piney River.....	532.4	R	Tennessee
Emory River.....	4.4	R	Clinch	Platte River.....	595.0	R	Missouri
F				Poteau River.....	308.7	R	Arkansas
Fishing River.....	334.1	L	Missouri	R			
Holston and French Broad Rivers.....	652.2		Tennessee	Red River.....	125.3	R	Cumberland
G				Rock River.....	479.1	L	Upper Miss
Gasconade River.....	104.5	R	Missouri	S			
Grand River.....	250.0	L	Missouri	St. Croix River.....	811.3	L	Upper Miss
Grand (Neosho) River.....	394.2	L	Arkansas	St. Francis River.....	672.3	R	Lower Miss
Great Miami River.....	490.8	R	Ohio	Salt River.....	629.9	L	Ohio
Green River.....	784.2	L	Ohio	Sans Bois Creek.....	342.6	R	Arkansas
Guyandot River.....	305.2	L	Ohio	Sangamon River.....	98.0	L	Illinois
H				Scioto River.....	356.5	R	Illinois
Harpeth River.....	152.9	L	Cumberland	Skunk River.....	395.9	R	Upper Miss
Hiwasse River.....	499.4	L	Tennessee	Sni-A-Bar River Mouth.....	322.5	R	Missouri
I				Soddy Creek.....	487.3	R	Tennessee
Illinois and Mississippi (Hennepin) Canal.....	479.1	L	Upper Miss	Spring Creek.....	252.2	L	Tennessee
Illinois River.....	217.9	L	Upper Miss	Stones River.....	205.9	L	Cumberland
Iowa River.....	434.3	R	Upper Miss	Sulphur Creek.....	207.9	L	Tennessee
K				T			
Kanawha River.....	265.6	L	Ohio	Tennessee River.....	934.4	L	Ohio
Kansas River.....	367.5	R	Missouri	Tennessee Chute (Entrance).....	725.7	L	Lower Miss
Kaskaskia River.....	117.4	L	Upper Miss	Tensas River.....	41.4	R	Black
Kentucky River.....	545.8	L	Ohio	Tygart and West Fork Rivers.....	128.7		Monongahela
Kings Creek.....	553.0	R	Tennessee				
Kiskiminetas River.....	30.2	L	Allegheny				

INDEX OF RIVER MOUTHS ON THE MISSISSIPPI RIVER SYTEM

River Mouth	Mile	Bank	Receiving River	River Mouth	Mile	Bank	Receiving River
V							
Verdigris River	395.1	L	Arkansas				
W							
Wabash River	848.2	R	Ohio				
White River (Old Mouth)...	590.6	R	Lower Miss				
White River (New Mouth)...	599.0	R	Lower Miss				
Wisconsin River	631.0	L	Upper Miss				
Wolf Creek	478.8	R	Missouri				
Wyaconda River.....	337.3	R	Upper Miss				
Y							
Yazoo River.....	437.2	L	Lower Miss				
Yellow Creek.....	215.0	L	Tennessee				
Youghiogheny River	15.6	R	Monongahela				

INDEX OF LOCKS AND DAMS ON THE MISSISSIPPI RIVER SYSTEM

Locks and Dams	Mile	Bank	Locks and Dams	Mile	Bank
Allegheny River					
Lock and Dam No. 2	6.7	L			
Lock and Dam No. 3	14.5	L			
Lock and Dam No. 4	24.2	R			
Lock and Dam No. 5	30.4	R			
Lock and Dam No. 6	36.3	R			
Lock and Dam No. 7	45.7	R			
Lock and Dam No. 8	52.6	L			
Lock and Dam No. 9	62.2	L			
Arkansas Post Canal					
Norrell Lock and Dam (No. 1).....	10.3	L			
Lock No. 2	13.3	L			
Arkansas River					
Lock and Dam No. 3	50.2	L			
Lock and Dam No. 4	66.0	R			
Lock and Dam No. 5	86.3	L			
David D. Terry Lock and Dam (No. 6).....	108.1	L			
Murray Lock and Dam (No. 7).....	125.4	R			
Toad Suck Ferry Lock and Dam (No. 8).....	155.9	L			
Aurthur V. Ormond Lock and Dam (No. 9).....	176.9	R			
Dardanell Lock and Dam (No. 10).....	205.5	L			
Ozark Jeta Taylor Lock and Dam (No. 12)....	256.8	L			
James N. Trimble Lock and Dam (No. 13).....	292.8	R			
W.D. Mayo Lock and Dam (No. 14).....	319.5	R			
Robert S. Kerr Lock and Dam (No. 15).....	336.2	L			
Webbers Falls Lock and Dam (No. 16).....	366.6	L			
Black River					
Jonesville Lock and Dam ..	24.7	R			
Clinch River					
Melton Hill Lock	23.1				
Cumberland River					
Barkley Lock and Dam	30.6	L			
Cheatham Lock and Dam .	148.7	R			
Old Hickory Lock and Dam	216.2	L			
Cordell Hull Lock and Dam	313.5	L			
Green River					
Lock and Dam No. 1	9.1	R			
Lock and Dam No. 2	63.1	R			
Lock and Dam No. 3	108.5	R			
Lock and Dam No. 4	148.1	L			
Illinois River					
LaGrange Lock and Dam...	80.2	R			
Peoria Lock and Dam	157.7	L			
Starved Rock Lock and Dam	31.0	R			
Marseilles Lock and Dam..	244.6	R			
Dresden Island Lock Dam .	271.5	L			
Brandon Road Lock and Dam	286.0	R			
Lockport Lock and Dam	291.1	L			
Kanawha River					
Old Lock No. 9.....	25.5	R			
Winfield Lock and Dam	31.1	R			
Marmet Lock and Dam.....	67.7	R			
London Lock and Dam.....	82.8	R			
			Kaskaskia River		
			Kaskaskia River Lock and Dam.....	0.8	R
			Monongahela River		
			Locks and Dam No. 2.....	11.2	R
			Locks and Dam No. 3.....	23.8	R
			Locks and Dam No. 4.....	41.5	R
			Maxwell Lock and Dam.....	61.2	R
			Point Marion Lock and Dam (No. 8).....	90.8	L
			Morgantown Lock and Dam.....	102.0	L
			Hildebrand Lock and Dam .	108.0	L
			Opekiska Lock and Dam .	115.4	R
			Ohio River		
			Emsworth Locks and Dam	6.2	R
			Dashfield's Locks and Dam	13.3	L
			Montgomery Locks and Dam.....	31.7	L
			New Cumberland Locks and Dam.....	54.4	R
			Pike Island Locks and Dam	84.3	L
			Hannibal Locks and Dam ..	126.4	R
			Willow Island Locks and Dam	161.7	R
			Belleville Locks and Dams .	203.9	
			Racine Locks and Dam	237.5	L
			Robert C Byrd Locks and Dam	279.2	L
			Greenup Locks and Dam ..	341.1	L
			Captain Anthony Medahal Locks and Dam ..	436.2	R
			Markland Locks and Dam ..	531.5	L
			McAlpine Locks	606.8	L
			Cannelton Locks and Dam	720.7	R
			Newburgh Locks and Dam	776.1	R
			Uniontown Locks and Dam	846.0	R
			Smithland Locks and Dam	918.5	R
			Locks and Dam No. 52.....	938.9	R
			Locks and Dam No. 53.....	962.6	R
			Ouachita River		
			Columbia Lock and Dam ...	116.7	L
			Felsenthal Locks and Dam	226.8	R
			H K Thatcher Lock and Dam....	281.9	R
			Red River		
			Lower Old River Lock and Dam	01.0	
			L C Boggs (Lock No. 1).....	44.0	
			John H Overton (Lock No. 2)	74.5	L
			Edwin Edwards (Lock No. 3)	118.0	
			Russel B Long Lock and Dam (No. 4)	169.0	
			Joe D. Waggoner Lock and Dam (No. 5).....	200.0	L
			Tennessee River		
			Kentucky Landing Lock and Dam	22.4	R
			Pickwick Landing Lock and Dam	206.7	L
			Wilson Locks and Dam	259.4	R
			General Joe Wheeler Lock and Dam	274.9	R
			Guntersville Lock and Dam	349.0	R
			Nickajack Lock and Dam...	424.7	R
			Chickamauga Lock and Dam	471.0	R
			Watts Bar Lock and Dam ..	529.9	L
			Fort Loudoun Lock and Dam	602.3	L

INDEX OF LOCKS AND DAMS ON THE MISSISSIPPI RIVER SYSTEM

Locks and Dams	Mile	Bank	Locks and Dams	Mile	Bank
Tennessee-Tombigbee Waterway					
Jamie C Witten Lock and Dam	411.9		Lock and Dam No.14.....	493.3	R
Upper Mississippi River			Lock and Dam No.15.....	482.9	L
Upper St. Anthony Falls Lock	853.8	R	Lock and Dam No.16.....	457.2	L
Lower St. Anthony Falls Lock	853.4	R	Lock and Dam No.17.....	437.1	L
Lock and Dam No.1.....	847.6	R	Lock and Dam No.18.....	410.5	L
Lock and Dam No.2.....	815.2	R	Lock and Dam No.19.....	364.3	R
Lock and Dam No.3.....	796.9	R	Lock and Dam No.20.....	343.2	R
Lock and Dam No.4.....	752.8	L	Lock and Dam No.21.....	324.9	L
Lock and Dam No.5.....	738.1	R	Lock and Dam No.22.....	301.2	R
Lock and Dam No.5A.....	728.5	R	Lock and Dam No.24.....	273.4	R
Lock and Dam No.6.....	714.3	L	Lock and Dam No.25.....	241.4	R
Lock and Dam No.7.....	702.5	R	Melvin E. Price Locks and Dam (No. 26).....	200.8	
Lock and Dam No.8.....	679.2	L	Chain of Rocks Twin 5 Locks (No. 27).....	185.5	L
Lock and Dam No.9.....	647.9	L	Verdigris River		
Lock and Dam No.10.....	615.1	R	Chouteau Lock	6.4	L
Lock and Dam No.11.....	583.0	R	Newt Graham Lock and Dam (No.18).....	26.6	L
Lock and Dam No.12.....	556.7	R			
Lock and Dam No.13.....	522.5	L			

CONVERSION TABLES

FEET TO METERS

(1 foot = 0.3048 meters) - (1 meter = 3.2808 feet)

Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
0	0	35	10.7	70	21.3	105	32.0	140	42.7	175	53.3
1	0.3	36	11.0	71	21.6	106	32.3	141	43.0	176	53.6
2	0.6	37	11.3	72	22.0	107	32.6	142	43.3	177	54.0
3	0.9	38	11.6	73	22.3	108	32.9	143	43.6	178	54.3
4	1.2	39	11.9	74	22.6	109	33.2	144	43.9	179	54.6
5	1.5	40	12.2	75	22.9	110	33.5	145	44.2	180	54.9
6	1.8	41	12.5	76	23.2	111	33.8	146	44.5	181	55.2
7	2.1	42	12.8	77	23.5	112	34.1	147	44.8	182	55.5
8	2.4	43	13.1	78	23.8	113	34.4	148	45.1	183	55.8
9	2.7	44	13.4	79	24.1	114	34.8	149	45.4	184	56.1
10	3.1	45	13.7	80	24.4	115	35.1	150	45.7	185	56.4
11	3.4	46	14.0	81	24.7	116	35.4	151	46.0	186	56.7
12	3.7	47	14.3	82	25.0	117	35.7	152	46.3	187	57.0
13	4.0	48	14.6	83	25.3	118	36.0	153	46.6	188	57.3
14	4.3	49	14.9	84	25.6	119	36.3	154	46.9	189	57.6
15	4.6	50	15.2	85	25.9	120	36.6	155	47.2	190	57.9
16	4.9	51	15.5	86	26.2	121	36.9	156	47.6	191	58.2
17	5.2	52	15.9	87	26.5	122	37.2	157	47.9	192	58.5
18	5.5	53	16.2	88	26.8	123	37.5	158	48.2	193	58.8
19	5.8	54	16.5	89	27.1	124	37.8	159	48.5	194	59.1
20	6.1	55	16.8	90	27.4	125	38.1	160	48.8	195	59.4
21	6.4	56	17.1	91	27.7	126	38.4	161	49.1	196	59.7
22	6.7	57	17.4	92	28.0	127	38.7	162	49.4	197	60.1
23	7.0	58	17.7	93	28.4	128	39.0	163	49.7	198	60.4
24	7.3	59	18.0	94	28.7	129	39.3	164	50.0	199	60.7
25	7.6	60	18.3	95	29.0	130	39.6	165	50.3	200	61.0
26	7.9	61	18.6	96	29.3	131	39.9	166	50.6	300	91.4
27	8.2	62	18.9	97	29.6	132	40.2	167	50.9	400	121.9
28	8.5	63	19.2	98	29.9	133	40.5	168	51.2	500	152.4
29	8.8	64	19.5	99	30.2	134	40.8	169	51.5	600	182.9
30	9.1	65	19.8	100	30.5	135	41.2	170	51.8	700	213.4
31	9.5	66	20.1	101	30.8	136	41.5	171	52.1	800	243.8
32	9.8	67	20.4	102	31.1	137	41.8	172	52.4	900	274.3
33	10.1	68	20.7	103	31.4	138	42.1	173	52.7	1000	304.8
34	10.4	69	21.0	104	31.7	139	42.4	174	53.0	2000	609.6

STATUTE MILES (St M) TO NAUTICAL MILES (NM)

(1 St M = 5,280 feet) - (1 NM = 6,076.1 feet)

St M	NM	St M	NM	St M	NM	St M	NM	St M	NM	St M	NM
1	0.9	21	18.3	41	35.6	61	53.0	81	70.4	101	87.8
2	1.7	22	19.1	42	36.5	62	53.9	82	71.3	102	88.6
3	2.6	23	20.0	43	37.4	63	54.8	83	72.1	103	89.5
4	3.5	24	20.9	44	38.2	64	55.6	84	73.0	104	90.3
5	4.4	25	21.7	45	39.1	65	56.5	85	73.9	105	91.2
6	5.2	26	22.6	46	40.0	66	57.4	86	74.7	106	92.1
7	6.1	27	23.5	47	40.8	67	58.2	87	75.6	107	93.0
8	7.0	28	24.3	48	41.7	68	59.1	88	76.4	108	93.8
9	7.8	29	25.2	49	42.6	69	60.0	89	77.3	109	94.7
10	8.7	30	26.1	50	43.5	70	60.8	90	78.2	110	95.6
11	9.6	31	26.9	51	44.3	71	61.7	91	79.1	111	96.5
12	10.4	32	27.8	52	45.2	72	62.6	92	80.0	112	97.3
13	11.3	33	28.7	53	46.1	73	63.4	93	80.9	113	98.2
14	12.2	34	29.6	54	46.9	74	64.3	94	81.7	114	99.1
15	13.0	35	30.4	55	47.8	75	65.2	95	82.6	115	99.9
16	13.9	36	31.3	56	48.7	76	66.0	96	83.4	116	100.8
17	14.8	37	32.2	57	49.5	77	66.9	97	84.3	117	101.7
18	15.6	38	33.0	58	50.4	78	67.8	98	85.2	118	102.5
19	16.5	39	33.9	59	51.3	79	68.7	99	86.0	119	103.4
20	17.4	40	34.8	60	52.1	80	69.5	100	86.9	120	104.3