



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

LOCAL NOTICE TO MARINERS

District: 13

Week: 20/09

ISSUED BY: COMMANDER, THIRTEENTH COAST GUARD DISTRICT (dpw)
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LIGHT LIST REFERENCE: COMDTPUB P16502.6, Light List Volume VI, 2009 Edition

UNITED STATES COAST GUARD NAVIGATION INFORMATION SERVICE (NIS)

The United States Coast Guard Navigation Information Service (NIS), operated by the USCG Navigation Center, is staffed 24 hours a day, 7 days a week. The NIS provides information on the current operational status, effective policies, and general information for GPS, DGPS, and LORAN-C. The NIS also disseminates Safety Broadcasts (BNM), Local Notice to Mariners (LNM), and the latest Notice Advisory to Navstar Users (NANU). NANU notices can also be obtained via e-mail subscription through the USCG Navigation Center website
<http://www.navcen.uscg.gov/gps/status/default.htm>.

In addition, the NIS investigates all reports of degradation or loss of GPS, DGPS or LORAN service. Mariners are encouraged to report all degradation of radio navigation services to the NIS via any of the following: Phone: 703-313-5900, Email: webmaster@navcen.uscg.mil or on the World Wide Web at: <http://www.navcen.uscg.gov>.

BROADCAST NOTICE TO MARINERS

This section contains a range of all the significant Broadcast Notice to Mariners (BNM's) on the date of this edition.

Originating Unit	Beginning BNM	Ending BNM
CGD THIRTEEN	D13-0289-09	D13-0307-09

ABBREVIATIONS

A through H

ACOE - Army Corps of Engineers
ADRIFT - Buoy Adrift
AICW - Atlantic Intracoastal Waterway
AI - Alternating
B - Buoy
BKW - Breakwater
bl - Blast
BNM - Broadcast Notice to Mariner
bu - Blue
C - Canadian
CHAN - Channel
CGD - Coast Guard District
C/O - Cut Off
CONT - Contour
CRK - Creek
CONST - Construction
DBN/Dbn - Daybeacon
DBD/DAYBD - Dayboard
DEFAC - Defaced
DEST - Destroyed
DISCON - Discontinued
DMGD/DAMGD - Damaged
ec - eclipse
EST - Established Aid
ev - every
EVAL - Evaluation
EXT - Extinguished
F - Fixed

I through O

I - Interrupted
ICW - Intracoastal Waterway
IMCH - Improper Characteristic
INL - Inlet
INOP - Not Operating
INT - Intensity
ISL - Islet
Iso - Isophase
kHz - Kilohertz
LAT - Latitude
LB - Lighted Buoy
LBB - Lighted Bell Buoy
LHB - Lighted Horn Buoy
LGB - Lighted Gong Buoy
LONG - Longitude
LNM - Local Notice to Mariners
LT - Light
LT CONT - Light Continuous
LTR - Letter
LWB - Lighted Whistle Buoy
LWP - Left Watching Properly
MHz - Megahertz
MISS/MSNG - Missing
Mo - Morse Code
MSLD - Misleading
N/C - Not Charted
NGA - National Geospatial-Intelligence Agency
NO/NUM - Number

P through Z

PRIV - Private Aid
Q - Quick
R - Red
RACON - Radar Transponder Beacon
Ra ref - Radar reflector
RBN - Radio Beacon
REBUILT - Aid Rebuilt
RECOVERED - Aid Recovered
RED - Red Buoy
REFL - Reflective
RRL - Range Rear Light
RELIGHTED - Aid Relit
RELOC - Relocated
RESET ON STATION - Aid Reset on Station
RFL - Range Front Light
RIV - River
s - seconds
SEC - Section
SHL - Shoaling
si - silent
SIG - Signal
SND - Sound
SPM - Single Point Mooring Buoy
SS - Sound Signal
STA - Station
STRUCT - Structure
St M - Statute Mile
TEMP - Temporary Aid Change

fl - flash
Fl - Flashing
G - Green
HAZ - Hazard to Navigation
HBR - Harbor
HOR - Horizontal Clearance
HT - Height

NOS - National Ocean Service
NW - Notice Writer
OBSCU - Obscured
OBST - Obstruction
OBSTR - Obstruction
Oc - Occulting
ODAS - Anchored Oceanographic Data Buoy

TMK - Topmark
TRLB - Temporarily Replaced by Lighted Buoy
TRLT - Temporarily Replaced by Light
TRUB - Temporarily Replaced by Unlighted Buoy
W - White
Y - Yellow

Additional Abbreviations Specific to this LNM Edition: None

SECTION I - SPECIAL NOTICES

This section contains information of special concern to the Mariner.

WASHINGTON - OFF SHORE - Research Buoys

The Olympic Coast National Marine Sanctuary will be deploying oceanographic research buoys in the waters of the sanctuary from 13 May to 01 Nov 09 at approximate positions 48-19-30N 124-40-54W, 48-19-18N 124-44-36W, 48-09-54N 124-45-24W, 48-09-54N 124-48-12W, 48-09-54N 124-53-36W, 47-52-30N 124-37-06W, 47-52-36N 124-44-00W, 47-35-54N 124-25-36W, 47-35-36N 124-29-36W, 47-21-18N 124-21-06W, 47-21-18N 124-28-06W, and 47-21-18N 124-34-06W. Each buoy will have a blinking yellow light, small orange flag and a radar reflector. For additional information, contact the Olympic Coast National Marine Sanctuary at (360) 457-6622 ext 14.

Chart 18480

LNM: 20/09

WASHINGTON - ORCAS ISLANDS - Research Buoys

Naval Research Laboratory is conducting current and tidal testing in the south and east Orcas Island vicinity utilizing autonomous drifting yellow tubular buoys until 28 May 09. Please remain clear of these buoys and report if entangled or snared to the Naval Research Laboratory at (352) 219-1957.

Chart 18421

LNM: 20/09

WASHINGTON - STRAIT OF JUAN DE FUCA - Live Firing

The U.S Coast Guard will be conducting live firing in area Whiskey Hotel (Danger Area note D) from 0800 to 1600 on 22 through 26 Jun 09. Mariners are requested to use caution in the area. For additional information, contact the U.S. Coast Guard at (360) 461-9325.

Chart 18460

LNM: 19/09

WASHINGTON - STRAIT OF JUAN DE FUCA - Live Firing

The U.S Coast Guard will be conducting live firing in area Whiskey Hotel (Danger Area note D) from 0800 to 1600 on 08 through 12 Jun 09. Mariners are requested to use caution in the area. For additional information, contact the U.S. Coast Guard at (360) 461-9325.

Chart 18460

LNM: 19/09

WASHINGTON - ELLIOTT - Safety Zone

The Captain of the Port, Puget Sound has established the following areas as safety zones: All waters extending 1,000 yards due south from the end of Pier 91, to be in effect only during the arrival or departure of Large Passenger Cruise Vessels at Pier 91, Seattle, Washington. Additionally, a safety zone encompassing all waters within 100 yards surrounding Pier 91, Seattle, Washington is in effect when a Large Passenger Cruise Vessel is moored at Pier 91.

In accordance with the general regulations in 33 CFR Part 165, Subpart D, no person or vessel may enter or remain in this security and safety zone, except for vessels authorized by the Captain of the Port or Designated Representatives.

Chart 18450

LNM: 19/09

WASHINGTON - GRAYS HARBOR - Submerged Object

ACOE has reported a underwater obstruction at approx 25ft beneath the surface at approx pos 46-57.61187N 123-50.5159W. The obstruction is marked with a 1 to 2 ft red buoy. For additional information, contact Department of the Army at (206) 764-3401.

Chart 18502

LNM: 19/09

WASHINGTON / OREGON - JOHN DAY NAVIGATION LOCKS - Lock Closure

The John Day Navigation Lock may experience brief delays of up to 4 hrs from 0630 to 2000 on 25 Oct and from May 09 for fill/drain valves inspections. For additional information, contact the Department of the Army at (503) 808-4384.

Chart 18535

LNM: 19/09

WASHINGTON - ELLIOTT BAY - Construction

Evans-Hamilton, Inc has deployed 4 current meters at approximate position 47-35-14.052N 122-20-41.778W, 47-34-45.342N 122-20-40.686W, 47-34-20.790N 122-20-41.334W, and 47-34-10.308N 122-20-45.852W until 07 Aug 09. These buoys are bottom mounted and less than 2ft tall. For additional information, contact Evans-Hamilton, Inc at (206) 526-5622.

Chart 18449

LNM: 19/09

COLUMBIA AND SNAKE RIVERS - Summer Seasonal Lockage Schedule for Recreational Craft

The U. S. Army Corps of Engineers, Walla Walla and Portland Districts, have implemented the summer seasonal lockage schedule, which is effective from 15 May 09 to 15 Sep 09 for the passage of recreational craft through the navigation locks. For the lockage schedule and additional information, visit the following website <http://www.nwp.usace.army.mil> or contact the Walla Walla District at (509) 527-7115 or the Portland District at (503) 808-4384.

LNM: 18/09

WASHINGTON - PUGET SOUND - Resource Survey

Washington Department of Fish and Wildlife (WDFW) will be conducting a resource survey of the inland marine waters of Puget Sound from 27 Apr to 30 Jun 09. F/V Chasina has been chartered by WDFW to conduct a series of bottom trawls and will be marked WDFW RESEARCH on both sides of the vessel. Trawling will be conducted during daylight hours. F/V Chasina will be monitoring VHF FM Channel 13. For additional information, contact WDFW at (425) 379-2313.

LNM: 17/09

SECTION II - DISCREPANCIES

This section lists all reported and corrected discrepancies related to Aids to Navigation in this edition. A discrepancy is a change in the status of an aid to navigation that differs from what is published or charted.

DISCREPANCIES (FEDERAL AIDS)

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
765.2	NOAA Lighted Buoy 46005	MISSING			52/08	
8635	Chetco River Entrance Daybeacon 9	MISSING	18602	0997-08	53/08	
9135	Coos Bay South Slough Light 1	TRLB/LT EXT/DBN DMGD	18587	0882-08	47/08	
11025	Columbia City Light 76	TRLB/LT EXT/DBN DEST	18524	0202-09	13/09	
11620	Cape Horn Range Rear Light	DBN DMGD	18531	0094-09	04/09	
13686	Little Goose Dam Buoy I	OFF STA		0235-09	17/09	
14780	Cathlamet Bay Prairie Channel Daybeacon 14	TRUB/DBN DEST	18523	0153-09	08/09	
15210	Willapa Bay Entrance Light 13	DBN DMGD	18504	0072-09	03/09	
15935	Grays Harbor North Bay Buoy 4	OFF STA	18502	0945-08	50/08	
16505	Bush Point Light	REDUCED INT	18477	0525-08	27/08	
18895	Deception Pass Light 1	REDUCED INT	18427	0206-09	12/09	
19815	Boundary Pass Shoal Isolated Danger Lighted Bell Buoy DB	TMK MISSING	18431	0110-09	46/08	
19855	Ewing Island Reef Daybeacon	TRUB/DBN DEST	18431	0244-09	16/09	

DISCREPANCIES (FEDERAL AIDS) CORRECTED

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
9585	Yaquina Bay Entrance Range Rear Light	RELIGHTED	18581	0307-09	20/09	20/09
11065	Warrior Rock Range Front Light	RELIGHTED	18525	0298-09	20/09	20/09
14645	Grays Point Light 13	WATCHING PROPERLY	18521	0301-09	17/09	20/09
18828	Swinomish Channel South Entrance Buoy	WATCHING PROPERLY	18427	0296-09	19/09	20/09

DISCREPANCIES (PRIVATE AIDS)

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
635	Heceta Head Lighthouse	LT EXT	18580	0119-09	06/09	
18465	Mukilteo Ferry Dolphin Light	LT IMCH	18443	0817-08	44/08	

18598	Tulalip Tribes Breakwater Light A	LT IMCH	18443	1018-07	47/07
18955	Anacortes Ferry Terminal Lights (2)	LT IMCH	18427	0607-06	23/06
19171	Deepwater Bay South Fish Pen Lights (2)	LT EXT	18427	0290-09	20/09
19172	Secret Harbor Fish Pen Lights (2)	LT EXT	18427	0291-09	20/09
19173	Deepwater Bay North Fish Pen Lights (2)	LT EXT	18427	0292-09	20/09
19360	Skyline Marina Light 1	LT EXT/DBN DEST	18427	0157-09	08/09

DISCREPANCIES (PRIVATE AIDS) CORRECTED

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
None						

PLATFORM DISCREPANCIES

Name	Status	Position	BNM Ref.	LNM St	LNM End
None					

PLATFORM DISCREPANCIES CORRECTED

Name	Status	Position	BNM Ref.	LNM St	LNM End
None					

SECTION III - TEMPORARY CHANGES and TEMPORARY CHANGES CORRECTED

This section contains temporary changes and corrections to Aids to Navigation for this edition. When charted aids are temporarily relocated for dredging, testing, evaluation, or marking an obstruction, a temporary correction shall be listed in Section IV giving the new position.

TEMPORARY CHANGES

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
586	Port Orford Jetty Light 3	DISCONTINUED	18589	1129-07	22/08	
9630	Yaquina Bay Entrance Regulated Boating Area Warning Sign	DISCONTINUED	18581	1225-06	50/06	
17159	Commencement Bay Directional Light	DISCONTINUED	18453	0924-08	50/08	

TEMPORARY CHANGES CORRECTED

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
None						

PLATFORM TEMPORARY CHANGES

Name	Status	Position	BNM Ref.	LNM St	LNM End
None					

PLATFORM TEMPORARY CHANGES CORRECTED

Name	Status	Position	BNM Ref.	LNM St	LNM End
None					

SECTION IV - CHART CORRECTIONS

This section contains corrections to federally and privately maintained Aids to Navigation, as well as NOS corrections.

This section contains corrective actions affecting chart(s). Corrections appear numerically by chart number, and pertain to that chart only. It is up to the mariner to decide which chart(s) are to be corrected. The following example explains individual elements of a typical chart correction.

Chart Number	Chart Edition	Edition Date	Last Local Notice to Mariners	Horizontal Datum Reference	Source of Correction	Current Local Notice to Mariners
12327	91st Ed.	19-APR-97	Last LNM: 26/97	NAD 83		27/97
Chart Title: NY-NJ-NEW YORK HARBOR - RARITAN RIVER						
Main Panel 2245 NEW YORK HARBOR					CGD01	
(Temp) ADD	NATIONAL DOCK CHANNEL BUOY 3				at 40-41-09.001N	074-02-48.001W
	Green can					
Corrective Action	Object of Corrective Action				Position	

(Temp) indicates that the chart correction action is temporary in nature. Courses and bearings are given in degrees clockwise from 000 true.

Bearings of light sectors are toward the light from seaward. The nominal range of lights is expressed in nautical miles (NM) unless otherwise noted.

18440 **29th Ed.** **01-OCT-07** **Last LNM: 18/09** **NAD 83** **20/09**

Chart Title: **Puget Sound**

Main Panel 1688 PUGET SOUND. Page/Side: N/A

DELETE	Sounding in Fathoms & Fractions; 5 1/2 (NOS NW-17239)	NOS	47-17-28.600N	122-24-46.900W
DELETE	Wreck in Fathoms; 10 Wk Chart No. 1: K26 (NOS NW-17239)	NOS	47-17-36.600N	122-25-12.400W
ADD	Obstruction in Fathoms; 2 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-23.500N	122-24-40.600W
ADD	Obstruction in Fathoms; 3 3/4 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-38.700N	122-25-09.600W

18441 **46th Ed.** **01-DEC-07** **Last LNM: 18/09** **NAD 83** **20/09**

Chart Title: **Puget Sound-northern part**

Main Panel 1689 PUGET SOUND NORTHERN PART. Page/Side: N/A

DELETE	NOAA Research Buoy SB	CGD13	47-40-55.000N	122-24-46.000W
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18445 **32nd Ed.** **01-AUG-07** **Last LNM: 18/09** **NAD 83** **20/09**

Chart Title: **FOLIO SMALL-CRAFT Puget Sound-Possession Sound to Olympia including Hood Canal**

Inset 1697 POSSESSION SOUND TO OLYMPIA INCLUDING INSET 6 HOOD CANAL COMMENCEMENT. Page/Side: B

DELETE	Sounding in Fathoms & Feet; 2_5 (NOS NW-17239)	NOS	47-17-23.000N	122-24-40.800W
CHANGE	Depth Note - 51.0 to:; 51.0 (NOS NW-17239)	NOS	47-15-10.500N	122-20-59.000W
ADD	Depth Note - to:; except for an obstruction at 48 ft depth at 47°16'38.7"N/122°24'38.6"W (NOS NW-17239)	NOS	47-14-36.800N	122-21-25.700W
ADD	Obstruction in Fathoms and Feet; 3_5 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-38.700N	122-25-09.600W
ADD	Obstruction in Fathoms; 2 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-23.500N	122-24-40.600W
ADD	Obstruction in Fathoms; 8 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-16-38.700N	122-24-38.600W

Main Panel 1699 POSSESSION SOUND TO OLYMPIA INCLUDING HOOD CANAL EAST PASSAGE. Page/Side: C

DELETE	Wreck in Fathoms and Feet; 10_2 Wk Chart No. 1: K26 (NOS NW-17239)	NOS	47-17-36.600N	122-25-12.400W
ADD	Obstruction in Fathoms and Feet; 3_5 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-38.700N	122-25-09.600W
ADD	Obstruction in Fathoms; 2 Obstn Chart No. 1: K41 (NOS NW-17239)	NOS	47-17-23.500N	122-24-40.600W

18446 **17th Ed.** **01-SEP-05** **Last LNM: 17/09** **NAD 83** **20/09**

Chart Title: **Puget Sound-Apple Cove Point to Keyport;Agate Passage**

Main Panel 1707 PUGET SOUND APPLE COVE POINT TO KEYPORT. Page/Side: N/A

DELETE	NOAA Research Buoy SB			CGD13 47-40-55.000N	122-24-46.000W
18447	29th Ed.	01-MAY-08	Last LNM: 17/09	NAD 83	20/09
<i>ChartTitle: Lake Washington Ship Canal and Lake Washington</i>					
CHART 3A - LAKE WASHINGTON SHIP CANAL AND LAKE WASHINGTON. Page/Side: N/A					
DELETE	NOAA Research Buoy SB			CGD13 47-40-55.000N	122-24-46.000W
ADD	Net Anchor Piling Light (Priv) Fl Y 4s			CGD13 at 47-38-52.506N	122-19-35.465W
ADD	Wards Cove Float House Light A (Priv) Fl Y 4s			CGD13 at 47-38-49.099N	122-19-37.706W
ADD	Wards Cove Float House Light B (Priv) Fl Y 4s			CGD13 at 47-38-50.218N	122-19-36.976W
ADD	Wards Cove Float House Light C (Priv) Fl Y 4s			CGD13 at 47-38-50.367N	122-19-35.436W
ADD	Wards Cove Marina Light A (Priv) Fl Y 4s			CGD13 at 47-38-46.361N	122-19-41.299W
ADD	Wards Cove Marina Light B (Priv) Fl Y 4s			CGD13 at 47-38-48.813N	122-19-39.600W
18448	34th Ed.	01-JUL-06	Last LNM: 17/09	NAD 83	20/09
<i>ChartTitle: Puget Sound-southern part</i>					
Extension 1712 PUGET SOUND SOUTHERN PART. Page/Side: N/A					
DELETE	Wreck in Fathoms; 10 Wk	Chart No. 1: K26	(NOS NW-17239)	NOS 47-17-36.600N	122-25-12.400W
ADD	Obstruction in Fathoms; 2 Obstn	Chart No. 1: K41	(NOS NW-17239)	NOS 47-17-23.500N	122-24-40.600W
ADD	Obstruction in Fathoms; 3 3/4 Obstn	Chart No. 1: K41	(NOS NW-17239)	NOS 47-17-38.700N	122-25-09.600W
18453	25th Ed.	01-OCT-07	Last LNM: 13/09	NAD 83	20/09
<i>ChartTitle: Tacoma Harbor</i>					
Main Panel 1716 TACOMA HARBOR. Page/Side: N/A					
DELETE	Sounding in Feet; 17	(NOS NW-17239)		NOS 47-17-23.000N	122-24-40.800W
ADD	Obstruction in Feet; 12 Obstn	Chart No. 1: K41	(NOS NW-17239)	NOS 47-17-23.500N	122-24-40.600W
ADD	Obstruction in Feet; 23 Obstn	Chart No. 1: K41	(NOS NW-17239)	NOS 47-17-38.700N	122-25-09.600W
ADD	Obstruction in Feet; 48 Obstn	Chart No. 1: K41	(NOS NW-17239)	NOS 47-16-38.700N	122-24-38.600W
18473	8th Ed.	01-SEP-05	Last LNM: 18/09	NAD 83	20/09
<i>ChartTitle: Puget Sound-Oak Bay to Shilshole Bay</i>					
Main Panel 1937 OAK BAY TO SHILSHOLE BAY PUGET SOUND. Page/Side: N/A					
DELETE	NOAA Research Buoy SB			CGD13 47-40-55.000N	122-24-46.000W
18474	8th Ed.	01-OCT-03	Last LNM: 16/09	NAD 83	20/09
<i>ChartTitle: Puget Sound-Shilshole Bay to Commencement Bay</i>					
Main Panel 1679 PUGET SOUND - SHILSHOLE BAY TO COMMENCEMENT BAY. Page/Side: N/A					
DELETE	Sounding in Fathoms & Feet; 2_5	(NOS NW-17239)		NOS 47-17-23.000N	122-24-40.800W

ADD	Obstruction in Fathoms and Feet; 3_5 Obstn	Chart No. 1: K41 (NOS NW-17239)	NOS 47-17-38.700N	122-25-09.600W
ADD	Obstruction in Fathoms; 2 Obstn	Chart No. 1: K41 (NOS NW-17239)	NOS 47-17-23.500N	122-24-40.600W

18500 **30th Ed.** **01-MAY-08** **Last LNM: 18/09** **NAD 83** **20/09**

ChartTitle: Columbia River to Destruction Island

Main Panel 1730 COLUMBIA RIVER TO DESTRUCTION ISLAND. Page/Side: N/A

DELETE	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.100N	124-07-08.600W
ADD	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.142N	124-07-08.562W

18502 **86th Ed.** **01-MAY-07** **Last LNM: 18/09** **NAD 83** **20/09**

ChartTitle: Grays Harbor;Westhaven Cove

Inset 1732 WESTHAVEN COVE. Page/Side: N/A

DELETE	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.100N	124-07-08.600W
ADD	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.142N	124-07-08.562W

Main Panel 1731 GRAYS HARBOR. Page/Side: N/A

DELETE	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.100N	124-07-08.600W
ADD	Point Chehalis Range Rear Light; Iso R 6s 73ft (NOS NW-17315)	NOS 46-54-30.142N	124-07-08.562W

18526 **58th Ed.** **01-SEP-06** **Last LNM: 09/09** **NAD 83** **20/09**

ChartTitle: Port of Portland, Including Vancouver;Multnomah Channel-southern part

Main Panel 1743 PORT OF PORTLAND INCLUDING VANCOUVER. Page/Side: N/A

DELETE	Sounding in Feet; 33 (NOS NW-17317)	NOS 45-34-12.530N	122-43-57.060W
ADD	Obstruction in Feet; 6 Obstn PA Chart No. 1: K41 (NOS NW-17317)	NOS 45-34-13.100N	122-43-55.700W

18527 **22nd Ed.** **01-SEP-05** **Last LNM: 07/09** **NAD 83** **20/09**

ChartTitle: Willamette River-Swan Island Basin

Main Panel 1745 SWAN ISLAND BASIN WILLAMETTE RIVER. Page/Side: N/A

ADD	Obstruction in Feet; 6 Obstn PA Chart No. 1: K41 (NOS NW-17317)	NOS 45-34-13.100N	122-43-55.700W
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SECTION VI - PROPOSED CHANGES

Periodically, the Coast Guard evaluates its system of aids to navigation to determine whether the conditions for which the aids to navigation were established have changed. When changes occur, the feasibility of improving, relocating, replacing, or discontinuing aids are considered. This section contains notice(s) of non-approved, proposed projects open for comment. SPECIAL NOTE: Mariners are requested to respond in writing to the District office unless otherwise noted (see banner page for address).

PROPOSED WATERWAY PROJECTS OPEN FOR PUBLIC COMMENT

<u>Proposed Project(s)</u>	<u>Closing</u>	<u>Docket No.</u>	<u>Ref. LNM</u>
COLUMBIA RIVER - PACIFIC OCEAN TO HARRINGTON POINT	22-MAY-09		16/09
WASHINGTON - STRAIT OF JUAN DE FUCA TO STRAIT OF GEORGIA	29-MAY-09		17/09

Proposed Change Notice(s)

COLUMBIA RIVER - PACIFIC OCEAN TO HARRINGTON POINT

Navigation Aids: To align the light intensities between the front and rear range lights.

Change Harrington Point Range Rear Light (LLNR 10180) from visible all around; higher intensity on rangeline and upstream to visible fourteen (14) degrees each side of rangeline and a second independent omni-directional flashing white light every two and a half seconds (FL W 2.5(.3)) with a nominal range of five (5) nautical miles.

Chart 18521

LNM: 16/09

WASHINGTON - STRAIT OF JUAN DE FUCA TO STRAIT OF GEORGIA

Navigation Aids: To denote the turn in the vessel traffic lanes and to properly mark the seven fathom shoal approximately seven and one half

miles north and west of the vessel traffic lanes.

Change Belle Rock Light (LLNR 19395) and Belle Rock Sector Warning Light (LLNR 19397) from a flashing white light every 2.5 seconds (FL W 2.5s) to a quick flashing white light (Q W) and establish Rosario Strait Lighted Buoy 11 (LLNR 19457), in approximate position 48-33-20N, 122-45-45W, showing a flashing green light every 2.5 seconds (FL G 2.5s), with a nominal range of four (4) nautical miles.

Charts: 18429 18430

LNLM: 17/09

SECTION VII - GENERAL

This section contains information of general concern to the Mariners. Mariners are advised to use caution while transiting these areas.

OREGON - Bridge Information

Burlington Northern Santa Fe Railroad Swingbridge

The Burlington Northern Santa Fe Railroad Swingbridge at Oregon Slough mile 3.2 need not open for the passage of vessels from 0600 13 May to 1700 23 May and from 0600 26 May to 05 Jun 09. The drawbridge will be operational through the Memorial Day weekend. The temporary closures are for the replacement of the end lift systems of the drawspan.

Chart 18526

LNLM: 17/09

OREGON - Bridge Information

Burnside Bridge

The draw need not open for vessels from 0600 to 1100 28 Jun 09 for the Beat the Burnside event.

Chart 18526

LNLM: 18/09

OREGON - Bridge Information

Burnside Bridge

The draw need not open for vessels from 0700 to 1400 06 Jun 09 during the Rose Festival Parade.

Chart 18526

LNLM: 20/09

WASHINGTON - Bridge Information

University Bridge

Debris tarps will be deployed below the drawspan from 0700 07 Nov 08 to 1600 29 May 09. The tarps will slant down from the center to the sides of the bascule span, reducing vertical clearance by 6 feet. Single-leaf openings will be provided according to the established operating schedule. Double-leaf openings will be provided if at least four hours notice is provided.

Chart 18447

LNLM: 45/08

WASHINGTON - Bridge Information

State Route 520 Floating Bridge

The State Route 520 Floating Bridge at Evergreen Point draw need not open from 0500 to 2100 09 May to 25 May, 05 Jul to 27 Jul, and 08 Aug to 24 Aug 09. This is the normal closed period for the drawspan on weekdays. The additional closures are to accommodate heavier traffic diverted from maintenance work on the I-90 and I-405 corridors.

Chart 18447

LNLM: 18/09

Bridge Lighting Discrepancies:

Lights on the following bridges have been reported extinguished.

Waterway	Bridge Name	Location	Status	Date reported	BNM
Coos Bay	Coos Bay RR bidge	Coos Bay, OR	EXT/Bell INOP	06/14/07	0595-07
Siuslaw	CO and PRR Bridge	Acme, OR	EXT	04/06/09	0221-09
Yaquina Bay	Yaquina Bay Bridge	Newport, OR	EXT	04/30/09	0256-09
Siletz River	Kernsville Bridge	Kernsville, OR	EXT	05/03/09	0268-09
Columbia River	I-205 Bridge	Vancouver, WA	EXT	04/17/09	0231-09
Columbia River	Bridge of the Gods	Cascade Locks, OR	EXT	05/11/09	0282-09
Columbia River	BNRR Bridge	Celilo, OR	EXT	05/11/09	0281-09
Columbia River	Marryhill-Biggs Bridge	Celilo, OR	EXT	05/11/09	0280-09
Willamette River	Lake Oswego RR Bridge	Lake Oswego, OR	EXT	05/28/07	0544-07
Willamette River	Wilsonville RR Bridge	Wilsonville, OR	EXT	09/26/08	N/A
Pend Oreille River	Spokane International RR Bridge	Sandpoint, ID	EXT	08/12/08	N/A
Grays Harbor	1001 Bridge	Aberdeen, WA	EXT	04/11/09	0226-09
Lake Washington	Salmon Bay Bridge	Seattle, WA	EXT	05/08/09	0279-09
Commencement Bay	11th Street Bridge	Tacoma, WA	EXT	01/14/09	0076-09

LNLM: 20/09

Bridge Lighting Discrepancies Corrected:

The following bridge discrepancies have been corrected since the last Local Notice to Mariners:

Bridge Lighting Discrepancies Corrected:

Waterway	Bridge Name	Location	Status	Date reported	BNM
Columbia River	Hood River Bridge	Hood River, OR	LWP	04/22/09	0293-09

LNM: 20/09

THIRTEENTH COAST GUARD DISTRICT - LORAN

Single rated LORAN stations Jupiter, FL (7980-y), Las Cruces, NM (9610-x), and Middletown, CA, (9940-x) will be on air testing the LORAN Data Channel (LDC) uninterrupted until further notice.

Dual rated LORAN stations Dana, IN (9960-z), George (9940-w), Seneca, NY (8970-x), Gillette, WY (8290-x), and Grangeville, LA (7980-y) will be on air testing LDC between 0800 and 1500 local time Monday through Friday.

The test broadcast will use pulse position modulation of a ninth pulse added one thousand microseconds after the standard pulse group. Throughout the test period the signal will meet all service performance parameters published in the 1994 specification of the LORAN-C signal. Users should not experience any tracking errors or service interference from this test broadcast. Users will be notified of any changes to the test schedule and when the testing is complete.

Loran users are encouraged to report any LORAN service degradation or outages they experience via the following methods:

- NAVCEN Information Service (East) at (703) 313-5900
- NAVCEN Detachment (Western Operations) at (707) 765-7598
- NAVCEN web site's report a LORAN problem worksheet at www.navcen.uscg.gov. Additional information on the LORAN Data Channel and the 1994 LORAN-C signal specification may also be found at this web site.

LNM: 18/08

COLUMBIA AND SNAKE RIVERS - Winter Seasonal Lockage Schedule for Recreational Craft

The U.S. Army Corps of Engineers, Walla Walla and Portland Districts, have implemented the winter seasonal lockage schedule, which is effective from 16 Sep 08 to 14 May 09 for the passage of recreational craft through the navigation locks. For the lockage schedule and additional information, visit the following website <http://www.nwp.usace.army.mil> or contact the Walla Walla District at (509) 527-7115 or the Portland District at (503) 808-4333.

LNM: 39/08

COLUMBIA RIVER - Research Trawling

NOAA will be conducting research pair-trawling operations in the vicinity of Puget Island (RM 37 to 51), between 01 Mar and 01 Oct 09. Operations may occur day or night. Trawl gear extends near the surface for approximately 100 yards behind the tow vessels, terminating in a small pontoon barge. Mariners are requested to use caution in the vicinity of the operation. NOAA vessels may be contacted on VHF-FM Channels 13, 16, and 82A. For additional information contact the Vessel Operations Coordinator at (503) 861-1818, ext 35.

Chart 18523

LNM: 09/09

COLUMBIA RIVER - Research Buoys

The Columbia River Inter-Tribal Fish Commission (CRITFC) has deployed research buoys in the Mouth of the Columbia River, Jim Crow Point, Welch Island, and Warrior Rock at approximate positions 46-14-11N 123-59-33.4W, 46-14-11.9N 123-58-58.1W, 46-14-42.3N 123-58-47.5W, 46-15-27.9N 123-35-14.1W, 46-16-12.5N 123-30-06.3W, 46-15-59.9N 123-30-42.4W, 45-48-59.6N 122-47-41.0W, 45-50-28.5N 122-47-20.9W, 45-50-51.7N 122-46-55.6W, 46-14-42.0N 123-59-40.0W, 46-15-15N 123-59-14W, 46-15-23N 123-58-18W, and 46-14-50N 123-58-56W from 16 Mar to 30 Sep 08. The buoys are fluorescent orange, approximately 1.5ft long, 6in in diameter and labeled with "CRITFC". For additional information, contact the CRITFC at (503) 731-1317.

Charts: 18521 18523

LNM: 10/09

COLUMBIA RIVER - Research Buoys (Revision of LNM 08/09)

The Columbia River Inter-Tribal Fish Commission (CRITFC) has deployed research buoys in the vicinity of Bonneville Dam at approximate positions 45-37-34.0N 122-00-42.7W, 47-37-27.5N 121-59-01.7W, 45-38-25.0N 121-57-01.8NW, 45-38-55.8N 121-56-32.0W, 45-38-49.1N 121-57-05.2W, 45-38-32.9N 121-57-28.9W, 45-35-32.0N 122-07-08.3W, 45-35-10.3N 122-06-59.8W, 45-38-43.6N 121-56-51.6W, 45-38-01.9N 121-57-38.8W, 45-36-47.9N 122-01-58.9W, 45-36-20.3N 122-03-23.9W, and 45-37-01.6N 122-00-49.7W from 24 Feb to 15 Jun 09. The buoys are fluorescent orange, approximately 1.5ft long, 6in in diameter and labeled with "CRITFC". For additional information, contact the CRITFC at (503) 731-1317.

Charts: 18531 18532

LNM: 11/09

COLUMBIA RIVER - Salvage Operations

Underwater Lumber will be conducting salvage operations on the Oregon side of Hayden Island (Oregon Slough) Mon through Fri from 06 Apr to 30 Sep 09 during daylight hours. Tug Oil King and Billy K will be monitoring VHF-FM Channel 77. Mariners are requested to use caution in the area.

Chart 18526

LNM: 13/09

OREGON - WILLAMETTE FALLS LOCKS - Lock Closure

The Willamette Falls Locks located at river mile 26.1 will remain closed to river traffic until a hydraulic steel structure inspection is performed on the chamber gates. For additional information, contact the Department of the Army at (503) 808-4333.

Chart 18528

LNM: 28/08

SNAKE RIVER - Research Floats

SNAKE RIVER - Research Floats

The NOAA Fisheries Service has deployed has deployed telemetry floats on the Snake River from 06 Apr to 15 Jul 09. The telemetry floats are deployed at 46-12-01.3N 119-01-52.3W (FI Y 4s), Ice Harbor Dam Boat Restricted Zone (FI W 4s), and Lower Monumental Dam Boat Restricted Zone (FI W 4s). For additional information, contact NOAA Fisheries Service at (509) 542-4033.

Chart 18545

LNM: 13/09

WASHINGTON - SNAKE RIVER - LAKE SACAJAWEA - Dolphins out of service

Army Corps of Engineers has declared Hard Rock Dolphins 3, 4, and 5, located up stream of the Ice Harbor Locks, structurally unsafe for use and are now out of service until repaired or removed. They are posted with signage stating their unsafe condition. For additional information contact Walla Walla District Corps of Engineers at 509-527-7115 or 509-527-7114

Chart 18545

LNM: 07/09

WASHINGTON - HOOD CANAL - Construction (Revision of LNM 14/09)

Kiewit-General Construction Company will be working on the Hood Canal Floating Bridge East Half Replacement Project from Jan to Oct 09. Specific projects include:

The East & West Channels (directly under the steel trusses) shall be intermittently closed from 17 Apr through 30 APR 09. Beginning 01 May 09, the east/west channels will be closed for the duration of the bridge closure (est. 6wks). The main shipping channel will be closed intermittently during the 6 week closure. Work will be conducted 24hrs per day 7 days a week during the closure operations.

Temporary Skiff Docks established at the west and east bridge approaches with the anchors marked with white or yellow buoys showing FI Y. Vessels are requested to remain 500 ft clear of the docks.

Two mooring buoys established near the northwest corner of the bridge and one buoy established near the southwest corner of the bridge. These buoys are white in color showing FI Y. At times three barges may be tied up to each mooring. Vessels are requested to remain 1500 ft clear of the moorings.

Demolition and construction operations of temporary structures will be taking place in the vicinity of Lofall and South Point Docks. The barge anchors will be marked with white or yellow buoys showing FI Y. Mariners are requested to remain 500 ft clear.

Several barges and buoys will be temporarily moored in the southwest corner of Port Gamble Bay and a 925 ft pontoon will temporarily be moored adjacent to the pontoon currently moored in the bay. Anchor locations are marked with white buoys showing FI W. Vessels are requested to remain 500 ft clear.

Multiple derrick barges and barges will be present during the construction project. The tug Redwood City (Radio Call Sign: WUS 6454) will be on site at all times when work is taking place. The Redwood City monitors VHF-FM Channels 13, 14, and 16. For additional information, contact Kiewit-General Construction Company at (360) 620-3423.

Chart 18476

LNM: 15/09

WASHINGTON - OSTRICH BAY - Discarded Munitions (Revision of LNM 52/04)

Mariners and divers are requested not to disturb the bottom sediments in the small back bay of Ostrich Bay, particularly in the vicinity of the Navy Ammo Loading Pier, due to unexploded ammunition. For additional information, contact Naval Base Kitsap Public Affairs Office at (360) 396-1631.

Chart 18474

LNM: 09/05

WASHINGTON - PUGET SOUND - DUWAMISH WATERWAY - Submerged Barge (Revision of LNM 05/03)

Six barges have sunk in the Duwamish Waterway approximately 150 yards south of the 1st Avenue Bridge and are protruding into the west side of the channel. The owner of the partially submerged barge has marked the corner in the channel with a red float and a quick flashing red light. Attempts to salvage the barge have been unsuccessful. An announcement will appear in this publication as changes occur. Contact the Army Corps of Engineers at (206) 764-3429 for more information.

Chart 18450

LNM: 16/03

SECTION VIII - LIGHT LIST CORRECTIONS

An Asterisk *, indicates the column in which a correction has been made to new information

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks	
11065	WARRIOR ROCK RANGE FRONT LIGHT	45-51-17.654N 122-46-47.090W	Q W	25		KRW on skeleton tower.	Visible 14° each side of rangeline.	20/09
18131	Noaa Research Buoy Sb						Remove from list.	20/09
18221	WARDS COVE MARINA LIGHT A	47-38-46.361N 122-19-41.299W	FI Y 4s			On float dock.	Private aid.	20/09
*	*	*	*	*	*	*	*	*
18221.1	WARDS COVE MARINA LIGHT B	47-38-48.813N 122-19-39.600W	FI Y 4s			On float dock.	Private aid.	20/09
*	*	*	*	*	*	*	*	*

SECTION VIII - LIGHT LIST CORRECTIONS (Continued)

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
18222	WARDS COVE FLOAT HOUSE LIGHT A	47-38-49.099N 122-19-37.706W	FI Y 4s			On float house.	Private aid. 20/09
*	*	*	*	*	*	*	*
18222.1	WARDS COVE FLOAT HOUSE LIGHT B	47-38-50.218N 122-19-36.976W	FI Y 4s			On float house.	Private aid. 20/09
*	*	*	*	*	*	*	*
18223	WARDS COVE FLOAT HOUSE LIGHT C	47-38-50.367N 122-19-35.436W	FI Y 4s			On float house.	Private aid. 20/09
*	*	*	*	*	*	*	*
18224	NET ANCHOR PILING LIGHT	47-38-52.506N 122-19-35.465W	FI Y 4s			On piling.	Private aid. 20/09
*	*	*	*	*	*	*	*

ENCLOSURES

Enclosure 1

OREGON - WASHINGTON - COLUMBIA RIVER - Dredging Operations

LNM: 19/09

Enclosure 2

WASHINGTON - SEATTLE - Marine Events

LNM: 19/09

Enclosure 3

OREGON - PORTLAND - Marine Events

LNM: 19/09

Enclosure 4

Update to the 2009 edition of the NOS Tidal Current Tables

LNM: 20/09

If you have any questions, comments, or need additional information concerning this or other LNMs (e.g. additions, deletions, corrections) contact the address or phone number on the front page.

J. F. Moriarty
 Commander, U.S. Coast Guard
 Chief, Waterways Management Branch
 Thirteenth Coast Guard District

OREGON – WASHINGTON – COLUMBIA RIVER – Dredging Operations

Dredging operations are planned or in progress at the following locations:

Start Date	End Date	Times	Location	Dredge Vessel	Assist Vessel	Channels Monitored	Disposal Area	LNМ
15 Jul 09	30 Sep 09	Mon-Sun 24 hrs	<u>Grays Harbor Cow Point Turning Basin and Cow Point Reach</u>	Patriot	Scows Liberty and Lummi Island	13 and 16, VHF-FM	South Jetty Disposal Site	52/08
28 Apr 09	25 May 09	Mon-Sun 24 hrs	<u>Grays Harbor Entrance and Point Chehalis Channel Reach</u>	Yaquina		13 and 16, VHF-FM	Half Moon Bay	15/09

*US Army Corps of Engineer dredges request mariners transit at their slowest safe speed to minimize wake when in the vicinity of a dredge and proceed after passing arrangements have been made.

SEATTLE MARINE EVENTS

EVENT DATE	EVENT NAME	EVENT LOCATION	SPONSOR
05/20/09	Wednesday Night Series	Fidalgo Bay	Anacortes Yacht Club
05/20/09	BYC Wednesday Night Series	Bellingham Bay	Bellingham Bay Yacht Club
05/20/09	Windseeker Wednesday Evening	Commencement Bay	Corinthian Yacht Club of Tacoma
05/20/09	Interim Evening	Shilshole Bay	Corinthian Yacht Club of Seattle
05/21/09	Spring Whitecap Series	Port Townsend	Port Townsend Sailing
05/23/09	WINSА Spring Series	Penn Cove	Whidbey Island Naval Sailing Association
05/23/09	Swiftsure International	Strait of Juan De Fuca	Royal Victoria Yacht Club
05/24/09	Ski to Sea	Bellingham Bay	Bellingham Whatcom Chamber of Commerce
05/24/09	Swiftsure International	Strait of Juan De Fuca	Royal Victoria Yacht Club
05/25/09	STYC Ballard Cup Series	Shilshole Bay	Sloop Tavern Yacht Club
05/25/09	Swiftsure International	Strait of Juan De Fuca	Royal Victoria Yacht Club
05/26/09	South Sound Sailing Society Races	Commencement Bay	South Sound Sailing Society
05/26/09	BYC Tuesday Series	Bellingham Bay	Bellingham Yacht Club
05/26/09	Interim Evening	Lake Washington	Corinthian Yacht Club of Seattle
05/27/09	Wednesday Night Series	Fidalgo Bay	Anacortes Yacht Club
05/27/09	BYC Wednesday Night Series	Bellingham Bay	Bellingham Bay Yacht Club
05/27/09	Windseeker Wednesday Evening	Commencement Bay	Corinthian Yacht Club of Tacoma
05/27/09	Interim Evening	Shilshole Bay	Corinthian Yacht Club of Seattle
05/28/09	South Sound Sailing Society Races	Commencement Bay	South Sound Sailing Society
05/28/09	Interim Evening	Shilshole Bay	Corinthian Yacht Club of Seattle
05/29/09	Spring Whitecap Series	Port Townsend	Port Townsend Sailing
05/29/09	Spring Friday Night Series	Sinclair Inlet	Port Orchard Yacht Club
05/30/09	WINSА Spring Series	Penn Cove	Whidbey Island Naval Sailing Association
05/30/09	South Sound Sailing Society Races	Commencement Bay	South Sound Sailing Society
05/30/09	Blake Island/ Blakely Rock Race	Puget Sound	Seattle Yacht Club
05/30/09	Mid Distance #5	Port Gardner	Milltown Sailing Association

PORTLAND MARINE EVENTS

EVENT DATE	EVENT NAME	EVENT LOCATION	SPONSOR
05/22/09	Portland Rose Festival Fireworks	Willamette River, Portland OR between the Morrison and Hawthorne Bridges	Portland Rose Festival
05/23-27/09	Lewis and Clark	Beacon Rock to Fort Clatsop WA, Columbia River	Stevenson High School
05/29/09	Portland Rose Festival Fireworks	Willamette River, Portland OR between the Morrison and Hawthorne Bridges	Portland Rose Festival
05/30-31/09	Oregon Bass Open	Columbia River, Boardman & Hood River OR	Oregon BASS Federation



NOTICE TO MARINERS



Issued By:

CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS & SERVICES

SSMC BLDG. # 4 – ROOM 7119
1305 East-West Highway
Silver Spring, MD 20910-3281
301-713-2815
301-713-4500 (24 hour fax)
Tide.Predictions@noaa.gov
<<http://tidesandcurrents.noaa.gov>>

UPDATE TO THE 2009 EDITION OF THE NOS TIDAL CURRENT TABLES

The NOAA National Ocean Service's Center for Operational Oceanographic Products and Services (CO-OPS) is issuing an update to the tidal current predictions published in the 2009 Tidal Current Tables - Pacific Coast of North America and Asia for the station at Humboldt Bay Entrance Channel, California.

Based on a reevaluation of tidal current data collected at this location; updated harmonic constants have been completed and updated tidal current predictions for 2009 have been generated. These predictions supersede the tidal current predictions published in the 2009 Tidal Current Tables - Pacific Coast of North America and Asia. The updated harmonic constants will continue to be used for this station beginning with the 2010 Tidal Current Tables - Pacific Coast of North America and Asia.

Issued: May 15, 2009

Humboldt Bay Entrance Channel, Calif., 2009

F—Flood, Dir. 140° True E—Ebb, Dir. 323° True

January				February				March															
Slack		Maximum		Slack		Maximum		Slack		Maximum		Slack		Maximum									
h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m								
1 Th		0038	1.3F	16 F		0114	1.5F	1 Su		0038	1.4F	16 M		0132	1.3F								
	0324	0537	0.9E		0354	0639	1.1E		0348	0620	1.2E		0430	0710	1.1E	1 Su	0226	0501	1.3E				
	0857	1219	1.3F		0959	1327	1.3F		1009	1321	1.2F		1113	1524	1.0F	0845	1216	1.3F	16 M	0300	0537	1.2E	
	1458	1728	1.2E		1555	1828	1.0E		1620	1833	0.9E		1751	2043	0.6E	1512	1720	1.0E	0934	1346	1.2F		
2112			2149					2134				2251				2017			1624	1858	0.7E		
2 F		0101	1.3F	17 Sa		0152	1.4F	2 M		0121	1.4F	17 Tu		0217	1.2F	2 M		0006	1.4F	17 Tu		0054	1.3F
	0400	0616	0.9E		0439	0731	1.1E		0435	0711	1.2E		0517	0757	1.0E		0309	0548	1.3E		0343	0619	1.1E
	0951	1304	1.2F		1104	1431	1.1F		1110	1421	1.1F		1209	1643	1.0F		0937	1308	1.2F		1020	1455	1.1F
	1546	1812	1.1E		1655	1928	0.8E		1727	1931	0.8E		1919	2209	0.6E		1611	1814	0.8E		1739	2036	0.6E
2143			2230					2228				2359				2106			2234				
3 Sa		0126	1.3F	18 Su		0229	1.4F	3 Tu		0214	1.4F	18 W		0315	1.2F	3 Tu		0057	1.4F	18 W		0145	1.2F
	0439	0701	0.9E		0524	0823	1.0E		0530	0809	1.2E		0611	0858	1.0E		0400	0641	1.3E		0432	0707	1.0E
	1050	1352	1.1F		1209	1549	1.0F		1218	1614	1.1F		1308	1749	1.1F		1039	1427	1.1F		1116	1611	1.1F
	1639	1900	1.0E		1806	2053	0.7E		1846	2048	0.7E		2041	2313	0.7E		1722	1919	0.7E		1904	2153	0.6E
2219			2318					2339				2041				2212			2346				
4 Su		0159	1.3F	19 M		0309	1.3F	4 W		0321	1.4F	19 Th		0422	1.2F	4 W		0158	1.4F	19 Th		0244	1.2F
	0522	0752	1.0E		0610	0918	1.0E		0631	0917	1.2E		0710	1017	1.0E		0500	0741	1.2E		0529	0803	1.0E
	1152	1450	1.1F		1311	1706	1.0F		1330	1742	1.1F		1409	1845	1.2F		1152	1611	1.1F		1221	1716	1.1F
	1743	1955	0.8E		1930	2221	0.6E		2010	2242	0.7E		2137				1842	2055	0.6E		2017	2253	0.7E
2304												2333				2333							
5 M		0245	1.4F	20 Tu		0359	1.3F	5 Th		0436	1.4F	20 F		0525	1.3F	5 Th		0310	1.4F	20 F		0352	1.2F
	0610	0849	1.1E		0658	1015	1.0E		0736	1034	1.3E		0810	1124	1.0E		0607	0851	1.2E		0632	0919	0.9E
	1256	1619	1.0F		1407	1813	1.1F		1441	1849	1.3F		1505	1933	1.3F		1310	1726	1.2F		1327	1809	1.2F
	1858	2105	0.7E		2054	2326	0.7E		2122	2354	0.8E		2217				2001	2242	0.7E		2107	2343	0.8E
												2217				2001							
6 Tu		0343	1.4F	21 W		0455	1.3F	6 F		0550	1.5F	21 Sa		0623	1.3F	6 F		0430	1.4F	21 Sa		0457	1.2F
	0703	0956	1.2E		0750	1108	1.1E		0842	1144	1.3E		0907	1214	1.1E		0717	1015	1.2E		0736	1048	1.0E
	1358	1751	1.1F		1456	1912	1.2F		1543	1946	1.4F		1552	2014	1.3F		1423	1828	1.4F		1425	1854	1.3F
	2018	2240	0.7E		2155				2218				2251				2106	2345	0.9E		2143		
												2251				2106							
7 W		0448	1.4F	22 Th		0552	1.3F	7 Sa		0659	1.6F	22 Su		0717	1.4F	7 Sa		0543	1.5F	22 Su		0025	0.9E
	0801	1101	1.3E		0843	1155	1.1E		0943	1242	1.4E		0959	1257	1.2E		0826	1130	1.3E		0244	0556	1.3F
	1459	1903	1.2F		1539	2001	1.3F		1636	2036	1.6F		1632	2050	1.4F		1522	1921	1.5F		0838	1146	1.1E
	2131	2356	0.8E		2240				2306				2321				2157					1512	1933
												2321				2157			2211				
8 Th		0555	1.5F	23 F		0648	1.4F	8 Su		0802	1.7F	23 M		0807	1.5F	8 Su		0366	1.1E	23 M		0102	1.0E
	0900	1200	1.4E		0934	1238	1.2E		1039	1333	1.5E		1046	1335	1.3E		0308	0651	1.6F		0331	0652	1.4F
	1556	2003	1.4F		1621	2044	1.4F		1723	2120	1.6F		1707	2121	1.4F		0929	1229	1.4E		0934	1230	1.1E
	2231				2319				2349				2348				1610	2009	1.6F		1549	2006	1.4F
												2241				2237							
9 F		0655	0.9E	24 Sa		0741	1.4F	9 M		0857	1.7F	24 Tu		0852	1.6F	9 M		0122	1.2E	24 Tu		0132	1.1E
	0957	1253	1.5E		1021	1318	1.3E		1131	1420	1.5E		1130	1410	1.3E		0406	0753	1.6F		0414	0745	1.4F
	1649	2055	1.5F		1702	2122	1.4F		1804	2201	1.7F		1739	2147	1.5F		1027	1320	1.4E		1024	1308	1.2E
	2323				2354								1739	2147	1.5F		1650	2051	1.7F		1621	2034	1.4F
												2321				2321			2303				
10 Sa		0146	1.0E	25 Su		0229	1.0E	10 Tu		0304	1.3E	25 W		0256	1.2E	10 Tu		0204	1.3E	25 W		0157	1.2E
	0412	0809	1.7F		0452	0829	1.5F		0557	0948	1.7F		0555	0934	1.6F		0500	0848	1.7F		0455	0834	1.5F
	1051	1344	1.6E		1106	1357	1.4E		1220	1504	1.5E		1212	1444	1.3E		1119	1405	1.4E		1110	1344	1.2E
	1740	2142	1.6F		1741	2156	1.5F		1842	2240	1.7F		1808	2209	1.5F		1725	2130	1.7F		1651	2056	1.5F
												2358				2358			2331				
11 Su		0234	1.1E	26 M		0303	1.0E	11 W		0345	1.3E	26 Th		0318	1.2E	11 W		0243	1.4E	26 Th		0219	1.3E
	0507	0905	1.7F		0534	0912	1.6F		0651	1036	1.7F		0636	1013	1.5F		0551	0938	1.7F		0534	0917	1.5F
	1142	1431	1.6E		1149	1433	1.4E		1308	1545	1.4E		1254	1518	1.3E		1208	1447	1.3E		1155	1419	1.2E
	1829	2226	1.6F		1819	2228	1.5F		1917	2317	1.6F		1837	2229	1.5F		1759	2205	1.7F		1721	2118	1.5F
												2358				2358							
12 M		0320	1.2E	27 Tu		0331	1.0E	12 Th		0426	1.3E	27 F		0346	1.3E	12 Th		0319	1.4E	27 F		0244	1.4E
	0602	0957	1.7F		0616	0953	1.6F		0745	1125	1.6F		0717	1052	1.5F		0640	1026	1.6F		0614	0959	1.5F
	1232	1517	1.6E		1231	1508	1.4E		1356	1627	1.3E		1337	1555	1.2E		1256	1527	1.3E		1238	1455	1.2E
	1915	2310	1.7F		1853	2256	1.4F		1951	2352	1.6F		1906	2252	1.5F		1832	2237	1.6F		1752	2143	1.5F
												2358				2358							
13 Tu		0406	1.2E	28 W		0356	1.1E	13 F		0506	1.3E	28 Sa		0421	1.3E	13 F		0353	1.4E	28 Sa		0316	1.4E
	0659	1047	1.7F		0658	1032	1.5F		0837	1215	1.4F		0759	1132	1.4F		0727	1113	1.5F		0654	1039	1.5F
	1321	1602	1.5E		1312	1543	1.3E		1445	1711	1.1E		1422	1635	1.1E		1343	1607	1.1E		1323	1534	1.1

Humboldt Bay Entrance Channel, Calif., 2009

F—Flood, Dir. 140° True E—Ebb, Dir. 323° True

April				May				June																		
Slack		Maximum		Slack		Maximum		Slack		Maximum		Slack		Maximum												
h	m	h	m	knots	h	m	h	m	knots	h	m	h	m	knots	h	m	h	m	knots							
1 W		0045	1.4F		16 Th	0356	0633	1.1E	1 F	0421	0705	1.3E	16 Sa	0421	0657	1.1E	1 M	0032	0354	1.3F	16 Tu	0013	0306	1.1F		
	0337	0619	1.3E	1041		1531	1.1F	1118		1529	1.4F	1107		1531	1.2F	0618		0911	1.0E	0549		0806	0.8E			
	1022	1436	1.2F	1834		2126	0.6E	1814		2055	0.8E	1831		2143	0.7E	1225		1639	1.5F	1136		1513	1.3F	1836	2135	0.9E
	1718	1921	0.7E	2323			2325			2325		2353			2353			1922	2231	1.1E						
2 Th	0149	1.4F	17 F	0453	0728	1.0E	2 Sa	0528	0815	1.2E	17 Su	0520	0751	1.0E	2 Tu	0146	0510	1.2F	17 W	0113	0419	1.0F				
	0439	0721		1.3E	1145	1632		1.2F	1220	1630		1.4F	1155	1615		1.2F	0733	1030		0.9E	0658	0909	0.7E			
	1136	1555		1.3F	1936	2225		0.7E	1914	2206		0.9E	1909	2231		0.8E	1309	1725		1.5F	1219	1556	1.3F	1919	2224	1.1E
	1834	2108		0.7E													2008	2321		1.2E						
3 F	0302	1.4F	18 Sa	0027	0319	1.2F	3 Su	0043	0408	1.3F	18 M	0053	0347	1.1F	3 W	0253	0621	1.3F	18 Th	0209	0540	1.1F				
	0547	0832		1.2E	0555	0832		1.0E	0638	0937		1.1E	0624	0853		0.9E	0850	1133		0.9E	0812	1031	0.7E			
	1250	1702		1.3F	1245	1722		1.2F	1313	1722		1.5F	1239	1648		1.2F	1354	1809		1.5F	1309	1646	1.4F	2007	2311	1.2E
	1943	2229		0.8E	2019	2313		0.8E	2005	2303		1.1E	1943	2309		0.9E	2052									
4 Sa	0049	0421	1.4F	19 Su	0126	0424	1.2F	4 M	0155	0522	1.4F	19 Tu	0150	0454	1.1F	4 Th	0004	1.3E	19 F	0301	0653	1.2F				
	0658	0958	1.2E		0700	0953	0.9E		0750	1053	1.1E		0731	1007	0.8E		0349	0725		1.3F	0922	1143	0.8E			
	1354	1759	1.4F		1336	1802	1.2F		1359	1810	1.5F		1319	1714	1.3F		0958	1227		0.9E	1404	1741	1.4F	2058	2358	1.3E
	2041	2328	1.0E		2051	2354	0.9E		2051	2352	1.2E		2017	2339	1.0E		1441	1852		1.5F						
5 Su	0201	0534	1.4F	20 M	0220	0526	1.2F	5 Tu	0301	0631	1.4F	20 W	0242	0601	1.2F	5 F	0042	1.3E	20 Sa	0201	0534	1.4F				
	0808	1114	1.2E		0805	1106	1.0E		0901	1152	1.1E		0839	1114	0.8E		0433	0821		1.4F	1021	1239	0.8E			
	1446	1849	1.5F		1419	1836	1.3F		1441	1854	1.5F		1359	1741	1.4F		1053	1316		0.9E	1459	1841	1.5F	2149		
	2128				2118				2132				2054				1529	1935		1.5F						
6 M	0305	0641	1.5F	21 Tu	0309	0626	1.3F	6 W	0358	0734	1.4F	21 Th	0329	0707	1.2F	6 Sa	0118	1.4E	21 Su	0305	0641	1.5F				
	0915	1212	1.2E		0907	1155	1.0E		1004	1243	1.1E		0941	1206	0.9E		1139	1402		0.9E	0435	0847	1.4F			
	1529	1935	1.6F		1455	1904	1.3F		1520	1935	1.6F		1441	1819	1.4F		1617	2017		1.5F	1112	1329	0.9E	1554	1946	1.6F
	2209				2146				2211				2133				2254									
7 Tu	0100	1.3E	22 W	0053	1.2E	7 Th	0446	0831	1.5F	22 F	0412	0806	1.3F	7 Su	0539	0951	1.4F	22 M	0131	1.5E						
	0403	0743		1.5F	1002		1237	1.0E	1100		1330	1.0E	1036		1253	0.9E	1221		1446	1.0E	0523	0934	1.5F			
	1015	1302		1.2E	1529		1929	1.4F	1559		2014	1.6F	1524		1907	1.5F	1706		2058	1.5F	1201	1417	1.0E	1647	2044	1.6F
	1606	2016		1.6F	2217				2247				2215				2334									
8 W	0140	1.4E	23 Th	0116	1.3E	8 F	0528	0920	1.5F	23 Sa	0453	0857	1.4F	8 M	0224	1.4E	23 Tu	0612	1020	1.6E						
	0455	0839		1.6F	1052		1316	1.1E	1149		1414	1.0E	1125		1339	1.0E		0612	1031	1.5F	0612	1020	1.6F			
	1108	1347		1.2E	1603		1956	1.5F	1640		2050	1.6F	1610		2000	1.6F		1303	1528	1.0E	1248	1504	1.1E	1741	2138	1.7F
	1640	2053		1.6F	2250				2324				2259					1754	2137	1.5F						
9 Th	0216	1.4E	24 F	0142	1.4E	9 Sa	0604	1005	1.5F	24 Su	0535	0944	1.5F	9 Tu	0013	0259	1.4E	24 W	0019	0304	1.6E					
	0542	0930		1.6F	1139		1356	1.1E	1235		1457	1.0E	1213		1424	1.0E	0649		1110	1.4F	0702	1105	1.6F			
	1158	1429		1.2E	1639		2031	1.5F	1723		2124	1.5F	1657		2053	1.6F	1345		1611	0.9E	1337	1552	1.1E	1837	2229	1.7F
	1715	2127		1.6F	2326								2344				1843		2217	1.5F						
10 F	0250	1.5E	25 Sa	0214	1.5E	10 Su	0000	0250	1.5E	25 M	0621	1030	1.5F	10 W	0054	0335	1.4E	25 Th	0108	0351	1.6E					
	0625	1016		1.5F	0553		0950	1.5F	0637		1048	1.5F	1302		1510	1.0E	0730		1150	1.4F	0752	1152	1.6F			
	1245	1510		1.1E	1225		1436	1.1E	1319		1539	1.0E	1747		2144	1.6F	1428		1656	0.9E	1426	1643	1.1E	1936	2322	1.6F
	1752	2158		1.6F	1718		2110	1.6F	1810		2159	1.5F					1932		2259	1.5F						
11 Sa	0033	0320	1.5E	26 Su	0005	0251	1.5E	11 M	0037	0322	1.4E	26 Tu	0031	0316	1.6E	11 Th	0135	0413	1.4E	26 F	0159	0440	1.5E			
	0704	1101	1.5F		0634	1035	1.5F		0712	1130	1.4F		0711	1119	1.5F		0814	1229	1.4F		0840	1239	1.6F			
	1331	1551	1.0E		1312	1518	1.0E		1404	1625	0.9E		1352	1558	1.0E		1512	1746	0.8E		1516	1740	1.1E	2039		
	1833	2228	1.5F		1801	2154	1.6F		1900	2237	1.5F		1841	2236	1.6F		2022	2343	1.4F							
12 Su	0108	0351	1.4E	27 M	0048	0332	1.6E	12 Tu	0116	0356	1.4E	27 W	0120	0403	1.6E	12 F	0219	0455	1.3E	27 Sa	0017	1.5F				
	0740	1146	1.4F		0720	1123	1.4F		0750	1214	1.4F		0804	1211	1.5F		0858	1308	1.3F		0251	0532	1.4E			
	1419	1635	0.9E		1402	1604	1.0E		1453	1719	0.8E		1446	1652	1.0E		1557	1840	0.7E		0926	1326	1.5F	1606	1843	1.0E
	1919	2302	1.5F		1849	2243	1.6F		1953	2320	1.4F		1941	2330	1.6F		2115									
13 M	0145	0424	1.3E	28 Tu	0134	0417	1.5E	13 W	0157	0434	1.3E	28 Th	0211	0453	1.5E	13 Sa	0029	1.3F	28 Su	0116	1.4F					
	0817	1233	1.3F		0811	1219	1.4F		0833	1300	1.3F		0859	1305	1.5F		0304	0539		1.2E	0348	0628	1.2E			
	1510	1730	0.8E		1458	1657	0.9E		1546	1829	0.7E		1543	1758	0.9E		0940	1343		1.3F	1010	1412	1.5F	1657	1946	1.1E
	2011	2342	1.4F		1945	2337	1.5F		2049				2046				1639	1930		0.7E	1657	1946	1.1E	2259		
14 Tu	0224	0501	1.3E	29 W	0225	0507	1.5E	14 Th	0241	0518	1.2E	29 F	0306	0548	1.4E	14 Su	0116	1.2F	29 M	0221	1.3F					
	0857	1325	1.2F		0908	1319	1.4F		0922	1349	1.2F		0955	1359	1.5F		0353	0625		1.1E	0450	0729	1.0E			
	1609	1853	0.6E		1559	1802	0.8E		1645	1941	0.6E		1642	1912	0.9E		1020	1412		1.2F	1053	1459	1.5F	1746	2047	1.1E
	2110				2051				2148				2158				1719									

Humboldt Bay Entrance Channel, Calif., 2009

F—Flood, Dir. 140° True E—Ebb, Dir. 323° True

July				August				September							
Slack		Maximum		Slack		Maximum		Slack		Maximum		Slack		Maximum	
h	m	h	m	knots	h	m	h	m	knots	h	m	h	m	knots	
1	0128	0459	1.1F		16	0028	0343	1.0F		1	0330	0755	1.3F		
W	0720	1010	0.7E		Th	0632	0830	0.7E		Sa	1033	1312	1.0E		
	1225	1635	1.4F			1130	1512	1.3F			1536	1901	1.4F		
	1922	2242	1.1E			1832	2116	1.1E			2141				
2	0236	0610	1.2F		17	0130	0525	1.0F		2	0410	0831	1.4F		
Th	0843	1118	0.7E		F	0752	1001	0.6E		W	1103	1349	1.1E		
	1319	1722	1.4F			1235	1615	1.4F			1620	1951	1.5F		
	2010	2329	1.2E			1930	2225	1.2E			2229				
3	0331	0713	1.2F		18	0231	0639	1.1F		3	0446	0902	1.5F		
F	0952	1214	0.8E		Sa	0906	1132	0.7E		Th	1132	1420	1.2E		
	1415	1811	1.4F			1344	1723	1.4F			1702	2038	1.5F		
	2059					2030	2329	1.3E			2315				
4		0010	1.2E		19	0328	0740	1.3F		4	0520	0929	1.5F		
Sa	0409	0807	1.3F		Su	1007	1232	0.9E		F	1159	1445	1.2E		
	1042	1304	0.9E			1448	1831	1.5F		O	1742	2120	1.6F		
	1511	1902	1.4F			2129					2358				
	2145				20	0421	0832	1.4F		5	0552	0952	1.5F		
5	0440	0852	1.4F		M	1058	1323	1.0E		Sa	1227	1507	1.3E		
Su	1124	1350	0.9E			1547	1938	1.6F			1822	2201	1.5F		
	1604	1951	1.5F			2225									
	2229				21	0511	0917	1.5F		6	0621	1012	1.5F		
6	0513	0932	1.4F		Tu	1144	1410	1.1E		Su	1256	1532	1.3E		
M	1203	1432	1.0E			1642	2038	1.7F			1902	2240	1.5F		
	1653	2036	1.5F		●	2317									
	2312				22	0206	0616	1.6E		7	0124	0340	1.2E		
7	0203	0548	1.4E		W	0558	1001	1.6F		M	0650	1035	1.5F		
Tu	0548	1008	1.5F			1229	1455	1.2E			1327	1602	1.3E		
O	1240	1512	1.0E			1736	2131	1.7F			1943	2319	1.4F		
	1739	2118	1.5F		8	0007	0253	1.6E		8	0208	0417	1.1E		
8	0240	0627	1.4E		Th	0644	1043	1.7F		Tu	0720	1104	1.4F		
W	0627	1044	1.5F			1313	1539	1.2E			1402	1639	1.3E		
	1317	1549	1.0E			1832	2221	1.7F			2025				
	1824	2158	1.5F		9	0057	0338	1.5E		9	0255	0459	0.9E		
9	0035	0316	1.4E		F	0727	1124	1.7F		W	0753	1142	1.4F		
Th	0708	1118	1.5F			1357	1625	1.2E			1443	1722	1.3E		
	1354	1623	1.0E			1929	2312	1.6F			2111				
	1909	2238	1.5F		10	0147	0424	1.4E		10	0348	0547	0.8E		
10	0116	0353	1.4E		Sa	0808	1206	1.6F		Th	0836	1230	1.4F		
F	0747	1150	1.4F			1440	1713	1.2E			1530	1811	1.3E		
	1429	1654	0.9E			2029					2205				
	1954	2320	1.5F		11	0006	0006	1.5F		11	0146	0146	1.1F		
11	0159	0431	1.3E		Su	0238	0512	1.3E		F	0453	0645	0.7E		
Sa	0823	1218	1.4F			0847	1246	1.6F		O	0934	1327	1.3F		
	1504	1724	0.9E			1524	1804	1.2E			1626	1907	1.2E		
	2042					2130					2312				
12		0003	1.4F		12	0101	0101	1.2F		12	0330	0330	1.1F		
Su	0243	0511	1.2E		M	0401	0609	0.9E		Sa	0608	0802	0.6E		
	0857	1243	1.3F			0908	1257	1.3F			1054	1433	1.3F		
	1538	1758	0.9E			1605	1841	1.2E			1731	2011	1.2E		
	2132				13	0150	0150	1.1F		13	0027	0453	1.2F		
13	0329	0553	1.1E		Th	0503	0702	0.7E		Su	0724	1004	0.7E		
M	0927	1307	1.3F			0954	1346	1.3F			1218	1550	1.4F		
	1614	1838	1.0E		●	1657	1935	1.2E			1840	2128	1.2E		
	2227				14	0327	0327	1.0F		14	0140	0555	1.3F		
14	0421	0639	0.9E		F	0617	0807	0.6E		M	0832	1116	0.8E		
Tu	0959	1338	1.3F			1102	1447	1.3F			1332	1707	1.4F		
	1654	1923	1.0E			1757	2037	1.2E			1950	2251	1.2E		
	2326				15	0053	0512	1.1F		15	0243	0650	1.4F		
15	0521	0729	0.8E		Sa	0737	0959	0.6E		Tu	0926	1209	1.0E		
O	1037	1419	1.3F			1222	1600	1.4F			1439	1816	1.5F		
	1740	2015	1.1E			1902	2151	1.2E			2057	2357	1.3E		
					16	0251	0654	1.2F		16	0204	0621	1.2F		
					Sa	0940	1202	0.8E		Su	0851	1127	0.7E		
						1402	1739	1.3F			1336	1714	1.4F		
						2025	2338	1.1E			2009	2308	1.3E		
					17	0332	0745	1.3F		17	0309	0718	1.3F		
					Su	1025	1250	0.9E		M	0950	1223	0.9E		
						1501	1834	1.4F			1443	1825	1.5F		
						2118					2113				
					18		0024	1.2E		18		0011	1.4E		
					M	0408	0828	1.3F		Tu	0403	0809	1.5F		
						1102	1334	1.0E			1038	1312	1.1E		
						1552	1927	1.4F			1543	1931	1.6F		
						2206					2211				
					19		0105	1.3E		19		0106	1.5E		
					Tu	0445	0905	1.4F		W	0450	0853	1.6F		
						1137	1413	1.0E			1122	1357	1.2E		
						1638	2014	1.5F			1638	2030	1.7F		
						2251					2305				
					20		0144	1.3E		20		0155	1.5E		
					W	0522	0939	1.5F		Th	0533	0935	1.7F		
					O	1210	1449	1.1E			1203	1439	1.3E		
						1721	2058	1.6F			1732	2123	1.7F		
						2334					2356				
					21		0221	1.4E		21		0240	1.5E		
					Th	0559	1010	1.5F		F	0613	1013	1.7F		
						1241	1520	1.1E			1243	1520	1.4E		
						1803	2139	1.6F			1826	2213	1.7F		
					22		0016	1.4E		22		0046	1.4E		
					F	0635	1038	1.5F		Sa	0651	1051	1.7F		
						1312	1546	1.1E			1323	1600	1.4E		
						1845	2218	1.5F			1920	2304	1.6F		
					23		0058	1.3E		23		0136	1.3E		
					Sa	0708	1103	1.5F		Su	0728	1128	1.6F		
						1342	1609	1.1E			1402	1641	1.3E		

Humboldt Bay Entrance Channel, Calif., 2009

F—Flood, Dir. 140° True E—Ebb, Dir. 323° True

October				November				December																			
Slack		Maximum		Slack		Maximum		Slack		Maximum		Slack		Maximum													
	h	m	knots		h	m	knots		h	m	knots		h	m	knots												
1 Th	0326	0745	1.4F	16 F	0337	0746	1.6F	1 Su	0347	0735	1.4F	16 M	0421	0831	1.6F	1 Tu	0350	0736	1.5F	16 W	0408	0231	1.0E	0449	0847	1.5F	
	1020	1318	1.1E		1020	1316	1.4E		1031	1328	1.4E		1105	1403	1.5E		1037	1329	1.5E		1120	1412	1.4E		1120	1412	1.4E
	1600	1928	1.4F		1631	2015	1.6F		1700	2054	1.4F		1754	2151	1.5F		1718	2129	1.4F		1806	2218	1.5F		1806	2218	1.5F
	2207				2245				2327								2357										
2 F	0401	0814	1.4F	17 Sa	0416	0827	1.7F	2 M	0422	0810	1.5F	17 Tu	0505	0911	1.6F	2 W	0436	0829	1.6F	17 Th	0436	0829	1.6F		0538	0927	1.5F
	1046	1345	1.2E		1059	1354	1.5E		1106	1357	1.5E		1144	1436	1.5E		1122	1410	1.5E		1201	1447	1.4E		1201	1447	1.4E
	1642	2019	1.5F		1722	2110	1.6F		1738	2138	1.4F		1830	2236	1.5F		1800	2213	1.5F		1839	2257	1.5F		1839	2257	1.5F
	2256				2339																						
3 Sa	0434	0838	1.5F	18 Su	0454	0905	1.7F	3 Tu	0459	0850	1.5F	18 W	0552	0948	1.5F	3 Th	0523	0920	1.6F	18 F	0523	0920	1.6F		0627	1006	1.5F
	1114	1407	1.3E		1136	1430	1.5E		1144	1432	1.5E		1223	1509	1.4E		1208	1453	1.6E		1241	1523	1.4E		1241	1523	1.4E
	1722	2105	1.5F		1809	2200	1.6F		1817	2221	1.4F		1905	2319	1.4F		1846	2257	1.5F		1916	2335	1.4F		1916	2335	1.4F
	2342																										
4 Su	0505	0900	1.5F	19 M	0532	0940	1.6F	4 W	0539	0933	1.5F	19 Th	0642	1027	1.5F	4 F	0615	1010	1.6F	19 Sa	0615	1010	1.6F		0716	1046	1.5F
	1143	1430	1.4E		1213	1504	1.5E		1226	1510	1.5E		1303	1544	1.4E		1256	1538	1.6E		1256	1538	1.6E		1321	1600	1.4E
	1800	2147	1.5F		1851	2247	1.5F		1859	2306	1.4F		1940				1935	2344	1.5F		1935	2344	1.5F		1956		
5 M	0026	0242	1.1E	20 Tu	0118	0337	1.0E	5 Th	0142	0343	1.0E	20 F	0237	0502	0.8E	5 Sa	0218	0423	1.0E	20 Su	0251	0526	0.9E		0251	0526	0.9E
	0535	0925	1.5F		0614	1015	1.6F		0624	1019	1.5F		0735	1107	1.4F		0711	1102	1.6F		0805	1127	1.4F		0805	1127	1.4F
	1216	1459	1.4E		1251	1536	1.5E		1310	1553	1.5E		1343	1621	1.3E		1345	1626	1.5E		1403	1640	1.3E		1403	1640	1.3E
	1838	2228	1.5F		1931	2335	1.4F		1945	2355	1.4F		2020				2027				2038				2038		
6 Tu	0110	0318	1.1E	21 W	0206	0422	0.9E	6 F	0232	0430	0.9E	21 Sa	0326	0604	0.8E	6 Su	0310	0519	1.0E	21 M	0334	0616	0.8E		0334	0616	0.8E
	0608	0956	1.5F		0700	1051	1.5F		0716	1110	1.5F		0830	1151	1.4F		0813	1157	1.5F		0857	1211	1.4F		0857	1211	1.4F
	1251	1533	1.5E		1329	1610	1.4E		1359	1640	1.5E		1426	1702	1.3E		1437	1718	1.4E		1447	1723	1.2E		1447	1723	1.2E
	1918	2309	1.4F		2008				2038				2104				2120				2119				2119		
7 W	0155	0357	1.0E	22 Th	0256	0516	0.8E	7 Sa	0328	0527	0.8E	22 Su	0420	0713	0.7E	7 M	0406	0626	0.9E	22 Tu	0415	0705	0.8E		0415	0705	0.8E
	0644	1035	1.5F		0752	1130	1.4F		0817	1206	1.5F		0928	1237	1.3F		0921	1255	1.5F		0951	1257	1.3F		0951	1257	1.3F
	1331	1613	1.5E		1409	1647	1.3E		1451	1733	1.4E		1511	1748	1.2E		1533	1815	1.3E		1535	1808	1.1E		1535	1808	1.1E
	2001	2355	1.3F		2047				2136				2152				2212				2200				2200		
8 Th	0244	0441	0.9E	23 F	0352	0629	0.7E	8 Su	0430	0638	0.8E	23 M	0515	0816	0.7E	8 Tu	0502	0737	1.0E	23 W	0455	0746	0.8E		0455	0746	0.8E
	0728	1121	1.5F		0850	1215	1.3F		0928	1306	1.4F		1028	1327	1.2F		1036	1359	1.4F		1049	1346	1.2F		1049	1346	1.2F
	1416	1658	1.4E		1452	1728	1.2E		1549	1831	1.3E		1601	1838	1.1E		1635	1916	1.2E		1628	1855	1.0E		1628	1855	1.0E
	2049				2130				2237				2242				2303				2239				2239		
9 F	0050	0250	1.3F	24 Sa	0457	0749	0.6E	9 M	0534	0803	0.8E	24 Tu	0604	0914	0.7E	9 W	0556	0847	1.0E	24 Th	0533	0821	0.8E		0533	0821	0.8E
	0821	1215	1.4F		0954	1304	1.2F		1046	1412	1.4F		1130	1420	1.2F		1153	1514	1.3F		1149	1442	1.1F		1149	1442	1.1F
	1507	1749	1.4E		1539	1815	1.1E		1652	1935	1.2E		1657	1931	1.0E		1743	2026	1.1E		1729	1945	0.8E		1729	1945	0.8E
	2146				2221				2338				2330				2352				2318				2318		
10 Sa	0159	0315	1.2F	25 Su	0605	0858	0.7E	10 Tu	0635	0923	0.9E	25 W	0644	1006	0.8E	10 Th	0647	0952	1.1E	25 F	0611	0903	0.9E		0611	0903	0.9E
	0445	0639	0.7E		1101	1357	1.2F		1205	1526	1.3F		1231	1521	1.1F		1309	1636	1.2F		1250	1554	1.0F		1250	1554	1.0F
	0930	1316	1.4F		1632	1908	1.0E		1800	2048	1.2E		1800	2030	0.9E		1858	2150	0.9E		1838	2044	0.7E		1838	2044	0.7E
	1605	1847	1.3E		2318																						
11 Su	0315	0810	0.7E	26 M	0706	0959	0.7E	11 W	0729	1028	1.0E	26 Th	0720	1049	0.9E	11 F	0736	1049	1.2E	26 Sa	0653	0955	1.0E		0653	0955	1.0E
	0556	0810	0.7E		1206	1456	1.1F		1320	1645	1.3F		1330	1631	1.1F		1422	1752	1.3F		1348	1721	1.0F		1348	1721	1.0F
	1052	1423	1.4F		1732	2009	1.0E		1913	2211	1.1E		1908	2145	0.8E		2019	2306	0.9E		1954	2210	0.6E		1954	2210	0.6E
	1711	1952	1.2E																								
12 M	0005	0425	1.3F	27 Tu	0016	0456	1.2F	12 Th	0124	0535	1.5F	27 F	0058	0448	1.3F	12 Sa	0129	0540	1.5F	27 Su	0048	0422	1.3F		0048	0422	1.3F
	0705	0950	0.8E		0753	1051	0.8E		0818	1121	1.2E		0755	1123	1.0E		0824	1138	1.3E		0741	1046	1.1E		0741	1046	1.1E
	1213	1539	1.4F		1306	1600	1.2F		1430	1759	1.4F		1424	1742	1.1F		1527	1901	1.3F		1442	1836	1.1F		1442	1836	1.1F
	1820	2108	1.2E		1835	2125	0.9E		2028	2321	1.1E		2020	2302	0.8E		2135				2107				2107		
13 Tu	0111																										