COAST PILOT CORRECTIONS

COAST PILOT 1 41 Ed 2011 Change No. 1
LAST NM 19/11

Page 105—Paragraph 1432, line 6 to Page 106—Paragraph 1437, line 10; read:

engaged in commerce, must have a satellite navigation receiver with–

(1) Automatic acquisition of satellite signals after initial operator settings have been entered; and

(2) Position updates derived from satellite information during each usable satellite pass.

(b) A system that is found by the Commandant to meet the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. "Federal Radionavigation Plan" (Report No. DOD-NO 46450.4-P, 1 or No. DOT-TSC-RSPA-80-16, 1). A person desiring a finding by the Commandant under this subparagraph must submit a written application describing the device to the Coast Guard Deputy Commander for Operations (CG-DCO), 2100 2nd St, SW., Stop 7471, Washington, DC 20593-7471. After reviewing …

(FR 6/2/11) 27/11

Page 106—Paragraphs 1443 to 1446; strike out.

(FR 6/2/11) 27/11

Page 244—Paragraph 122, lines 5 to 7; read:

west. The pilot will board 3 miles east of Penobscot Bay …

(NOS/11) 27/11

COAST PILOT 2 40 Ed 2011 Change No. 11
LAST NM 23/11

Page 121—Paragraph 2143, line 6 to Paragraph 2148, line 11; read:

engaged in commerce, must have a satellite navigation receiver with–

(1) Automatic acquisition of satellite signals after initial operator settings have been entered; and

(2) Position updates derived from satellite information during each usable satellite pass.

(b) A system that is found by the Commandant to meet the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. "Federal Radionavigation Plan" (Report No. DOD-NO 46450.4-P, 1 or No. DOT-TSC-RSPA-80-16, 1). A person desiring a finding by the Commandant under this subparagraph must submit a written application describing the device to the Coast Guard Deputy Commander for Operations (CG-DCO), 2100 2nd St, SW., Stop 7471, Washington, DC 20593-7471. After reviewing the application, the Commandant …

(FR 6/2/11) 27/11

Page 121—Paragraphs 2154 to 2157; strike out.

(FR 6/2/11) 27/11

Page 236—Paragraph 217, lines 4 to 16; read:

Cape Cod Canal. (See Notice to Mariners and the latest edition of the chart for controlling depths.) In 1992, a rock was reported near the railroad bridge crossing Cohasset Narrows in 41°44'46"N., 70°37'22"W. The railroad bridge has a bascule span with a clearance of 6 feet; the bridge is kept in a closed position. A highway bridge, just above the railroad bridge, has a fixed span with a clearance of 9 feet. A marina is on the east side of Cohasset Narrows just south of the railroad bridge and can provide transient berths, gasoline, diesel fuel, water, ice, marine supplies, pump-out and a launching ramp. Several small piers for shallow-draft boats are in Buttermilk Bay.

(NOS 13236; DB-19363-small) 27/11

Page 259—Paragraph 197, lines 8 to 18; read:

The entrance channel is marked by buoys. In 2011, the controlling depth was 6 feet in the entrance channel and the turning basin; 5 to 6 feet was available in the anchorage basin. A 12-foot-high protective …

(L-406-2011; DD 19682) 27/11

Page 276—Paragraph 92, line 1; read:

Race Rock Light (41°14'37"N., 72°02'50"W.), 67 …

(20/11 CG1) 27/11

Page 394—Paragraph 239, lines 4 to 18; read:

channel connects several channels which lead to various facilities along the New Jersey waterfront including: the Army Corps of Engineers Caven Point Terminal, New York Waterway Ferry Landing, Claremont Terminal, New York Cross Island Railroad Terminal, Port Jersey Imported Automobile Terminal and Global Terminal and Container Services. A Federal project provides for a depth of 20 feet in the channel (See Notice to Mariners and the latest edition of the chart for controlling depths.) The channels are well marked with lighted and unlighted buoys.

(PS 5/99; L-338-2011; NOS 12334) 27/11

COAST PILOT 5 39 Ed 2011 Change No. 1
LAST NM 24/11

Page 527—Paragraph 168, line 5; read:

wharf.

Pilotage, Arecibo

COAST PILOT 5 (Continued)

See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilots board vessels about one mile NW of Arecibo Light.
(20/11 CG7) 27/11

Page 530—Paragraph 210, line 1; read:
Pilots board vessels about 2.7 miles N of Bahia de San Juan Lighted Buoy 2 off the harbor entrance …
(20/11 CG7) 27/11

Page 544—Paragraph 453, lines 3 to 4; read:
inbound vessels about 1.5 miles SE of Puerto Yabucoa Channel Lighted Buoy 2.
(20/11 CG7) 27/11

Page 545—Paragraph 479, line 2; read:
this chapter. Pilots board vessels about 1.5 miles S of Las Mareas Lighted Buoy LM off the entrance …
(20/11 CG7) 27/11

Page 546—Paragraph 493, line 3; read:
Vessels are boarded about 3.1 miles SW of Bahia de Jobos Light off Cayos de Ratones.
(20/11 CG7) 27/11

Page 548—Paragraph 532, line 2; read:
this chapter. Pilots board vessels about one mile S of Bahia de Ponce Lighted Buoy 1.
(20/11 CG7) 27/11

Page 551—Paragraph 568, lines 2 to 4; read:
this chapter. Pilots board vessels about 3 miles S of Bahia de Guayanilla Entrance Lighted Buoy 1. Pilots can be contacted on 2182 and …
(20/11 CG7) 27/11

Page 552—Paragraph 592, lines 3 to 4; read:
Bahia de Guanica. Pilots board vessels about 1.2 miles SE of Bahia de Guanica Entrance Lighted Buoy 2. Pilots can be contacted on 2182 …
(20/11 CG7) 27/11

Page 556—Paragraph 650, lines 2 to 3; read:
this chapter. Pilots board vessels about 1.1 miles W of Bahia de Mayaguez Entrance Lighted Buoy 3.
(20/11 CG7) 27/11

COAST PILOT 6 41 Ed 2011 Change No. 6
LAST NM 20/11

Page 110—Paragraph 1542, line 6 to Page 111—Paragraph 1547, line 11; read:
engaged in commerce, must have a satellite navigation receiver with–

(1) Automatic acquisition of satellite signals after initial operator settings have been entered; and

(2) Position updates derived from satellite information during each usable satellite pass.

(b) A system that is found by the Commandant to meet the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. "Federal Radionavigation Plan" (Report No. DOD-NO 46450.4-P, 1 or No. DOT-TSC-RSPA-80-16, 1). A person desiring a finding by the Commandant under this subparagraph must submit a written application describing the device to the Coast Guard Deputy Commander for Operations (CG-DCO), 2100 2nd St, SW., Stop 7471, Washington, DC 20593-7471. After reviewing the application, the Commandant …
(FR 6/2/11) 27/11

Page 111—Paragraphs 1553 to 1556; strike out.
(FR 6/2/11) 27/11

Page 206—Paragraph 197, lines 6 to 10; read:
Tuscarora Bay. (See Notices to Mariners and the latest edition of the chart for controlling depths.)
(L-375-2011; 22/11 CG9) 27/11

Page 237—Paragraph 267, line 13; read:
light on the W end. In May 2011, shoaling to 25 feet was reported in the entrance channel just off the outer end of the W breakwater in 41°55'14"N., 80°47'40"W.
(22/11 CG9) 27/11

Page 257—Paragraph 535, lines 4 to 5; read:
thence 27 feet in the river channel to the turning basin 6.3 miles above the mouth; thence 25 feet to the upstream limit of the project with 10 feet in Riverside Turning …
(L-498-2011) 27/11

Page 308—Paragraph 75, lines 5 to 7; read:
A private marina is located just S of the Detroit …
(NOS 14862) 27/11

Page 310—Paragraph 102, lines 7 to 12; read:
a private **113.5°** lighted range. Buoys in the dredged channel may be relocated as necessary to best mark the channel limits. (See Notice to Mariners and the latest edition of the chart for controlling depths.)
(NOS 14863; 21/09 CG9) 27/11

Page 321—Paragraph 245, lines 4 to 7; read:
deep-draft vessels, especially during heavy weather. Submerged wrecks are near the NE extremity of the bank. A lighted buoy with a racon 0.2 mile ESE of the …
(L-913-2010) 27/11

COAST PILOT 6 (Continued)

Page 341—Paragraph 60, lines 1 to 3; read:

In 2011, the controlling depths were 15 feet in the entrance to Round Lake, thence 16 feet in the dredged channel from Round Lake …

(DD-20047) 27/11

Page 349—Paragraph 175, line 7; read:

2011, the controlling depth was 5 feet in the entrance …

(DD-19776) 27/11

Page 365—Paragraph 377, line 13 to Paragraph 378; read:

channel, is entered through a cut in the E pier. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

(NOS 14905; 02/11 CG9) 27/11

Page 457—Paragraph 208, lines 6 to 8; read:

is at the W pierhead light. In 2011, the controlling depth was 19 feet in the dredged channel with lesser depths to 17 feet along the edges. Shoaling in the harbor …

(DD-19871) 27/11

COAST PILOT 7 43 Ed 2011 Change No. 12
LAST NM 22/11

Page 188—Paragraph 3368; insert after:

§165.1184 Safety Zone; Coast Guard Use of Force Training Exercises, San Pablo Bay, CA

(a) *Location.* This safety zone will apply to the navigable waters in the San Pablo Bay, and will encompass an area beginning at position

38°01'44"N., 122°27'06"W.;
38°04'36"N., 122°22'06"W.;
38°00'35"N., 122°26'07"W.;
38°03'00"N., 122°20'20"W. (NAD 83) and back to the starting point.

(b) *Enforcement.* The Coast Guard will notify the public via a Broadcast Notice to Mariners prior to the activation of this safety zone. The safety zone will be activated on average two times per month, but could be activated up to six times per month. It will be in effect for approximately three hours from 9 a.m. to 11:59 p.m. If the exercises conclude prior to the scheduled termination time, the Coast Guard will cease enforcement of this safety zone and will announce that fact via Broadcast Notice to Mariners. Persons and vessels may also contact the Coast Guard to determine the status of the safety zone on VHF–16 or the 24-hour Command Center via telephone at (415) 399–3547.

(c) *Definitions.* As used in this section, designated representative means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel and a Federal, State, and local officer designated by or assisting the Captain of the Port San Francisco (COTP) in the enforcement of the safety zone.

(d) *Regulations.* (1) Under the general regulations in § 165.23, entry into, transiting, or anchoring within the safety zone is prohibited unless authorized by the COTP or the COTP's designated representative.

(2) The safety zone is closed to all vessel traffic, except as may be permitted by the COTP or the COTP's designated representative.

(3) Vessel operators desiring to enter or operate within the safety zone must contact the COTP or the COTP's representative to obtain permission to do so. Vessel operators given permission to enter or operate in the safety zone must comply with all directions given to them by the COTP or the COTP's designated representative. Persons and vessels may request permission to enter the safety zone on VHF–16 or the 24-hour Command Center via telephone at (415) 399–3547.

(FR 5/5/11) 27/11

Page 296—Paragraph 89, lines 1 to 3; read:

In 2010, the controlling depth was 10 feet (20 feet at midchannel) in the dredged channel to the highway bridge; general depths of 15 to 18 feet were available in …

(DD 19212) 27/11

Page 386—Paragraph 348, line 13 to Paragraph 349, line 1; read:

Lighted Buoy E and the entrance to Carquinez Strait.

A **regulated navigation area** has been established in San Pablo Bay N of the Pinole Shoal Channel. (See **33 CFR 165.1184**, chapter 2, for limits and regulations.)

General and naval anchorages are in San Pablo …

(FR 5/5/11) 27/11

COAST PILOT 7 43 Ed 2011 Change No. 13

Page 302—Paragraph 186; insert after:

New graphic titled **Vessel Operating Procedures for Los Angeles/Long Beach (Best Maritime Practices)** from back of this Subsection.

(L-542-2011) 27/11

Page 385—Paragraph 343, lines 7 to 12; read:

the bridge. In 2011, the controlling depth was 3 feet at midchannel from the channel entrance to the mouth of the creek, thence 2 feet at midchannel to the turning basin, with 2 feet in the basin. The channel entrance is …

(DD 19560-61) 27/11

Page 514—Paragraph 123, lines 9 to 11; read:

rock covered 5 fathoms is at 48°07'22"N.; 123°13'18"W. A shoal with a least depth of 2¼ fathoms is 330 yards NW of the NW corner of the …

(H 11751; DD 18690) 27/11

COAST PILOT 7 (Continued)

Page 515—Paragraph 146, lines 5 to 6; read:

lights. In 2007, the controlling depth in the entrance and basin was 16 feet with 12 feet alongside the berths. About 660 berths, electricity …

(H 11751; DD 18690) 27/11

Page 523—Paragraph 246, line 17; read:

Gasoline, diesel fuel, water, ice, and marine supplies are available at Friday …

(DB-19422-small) 27/11

COAST PILOT 7 43 Ed 2011 Change No. 14

Page 166—Paragraph 2715, line 6 to Paragraph 2720, line 11; read:

engaged in commerce, must have a satellite navigation receiver with–

(1) Automatic acquisition of satellite signals after initial operator settings have been entered; and

(2) Position updates derived from satellite information during each usable satellite pass.

(b) A system that is found by the Commandant to meet the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. "Federal Radionavigation Plan" (Report No. DOD-NO 46450.4-P, 1 or No. DOT-TSC-RSPA-80-16, 1). A person desiring a finding by the Commandant under this subparagraph must submit a written application describing the device to the Coast Guard Deputy Commander for Operations (CG-DCO), 2100 2nd St, SW., Stop 7471, Washington, DC 20593-7471. After reviewing the application, the Commandant …

(FR 6/2/11) 27/11

Page 166—Paragraphs 2726 to 2729; strike out.

(FR 6/2/11) 27/11

Page 209—Paragraph 3932; insert after:

§165.1335 Security Zone; Vessels Carrying Hazardous Cargo, Sector Columbia River Captain of the Port Zone.

(a) *Location*. The following area is a security zone: All waters within 500 yards. In all directions, of any vessel carrying hazardous cargo, as determined by the Captain of the Port (COTP) Columbia River, while such a vessel is located in the Sector Columbia River COTP Zone as defined in 33 CFR 3.65-15 and the COTP Columbia River determines that a security zone is necessary and enforcement of the security zone is practicable.

(b) *Regulations.* (1) In accordance with the general regulations in 33 CFR part 165, Subpart D, no person or vessel may enter or remain in a security zone created by this section without the permission of the COTP Columbia River or his/her designated representative. Designated representatives are Coast Guard personnel authorized by the COTP Columbia River to grant persons or vessels permission to enter or remain in a security zone created by this section. Subpart D of 33 CFR part 165 contains additional provisions applicable to a security zone created by this section.

(2) To request permission to enter a security zone created by this section, contact Coast Guard Sector Columbia River at telephone number 503-861-6212 or via VHF channel 16 (156.8 MHz) or VHF channel 22 (157.1 MHz).

(c) *Notification*. When a security zone is created by this section, one or more Coast Guard vessels will be present to enforce the security zone and the COTP Columba River will issue a local broadcast notice to mariners.

(FR 5/17/11) 27/11

Page 296—Paragraph 88, line 6; read:

microphone five times on VHF-FM channel 81A. A prominent …

(22/11 CG11; LL/11) 27/11

Page 412—Paragraph 74, line 13; read:

and a sound signal. The horn is activated by keying the microphone five times on VHF-FM channel 81A. Small rocks extend from Mooring Rock to …

(22/11 CG11; LL/11) 27/11

Page 444—Paragraph 187, line 2; read:

hard sand and rock covered 4 to 25 feet and marked by breakers. The reef extends …

(H 11981; DD 19508) 27/11

Page 444—Paragraph 188, line 1; read:

South Reef, with a least depth of 8 feet, is a S continuation of …

(H 11981; DD 19508) 27/11

Page 444—Paragraph 191, lines 8 to 9; read:

buoys. Between the jetties, numerous submerged rocks lie along the outside of the charted entrance channel limits.

(H 11981; DD 19508) 27/11

COAST PILOT 9 28 Ed 2010 Change No. 10
LAST NM 22/11

Page 217—Paragraph 1195, line 9; read:

anchoring. The Captain of the Port, Western Alaska, in consultation with the marine community has guidelines for vessels anchoring in Kachemak Bay in response to previous instance of vessels dragging anchor. These guidelines shall be followed at all times by any vessel anchoring in Kachemak Bay.

General Requirements for All Vessels

While anchored in Kachemak Bay, a 24-hour bridge watch shall be maintained by an English-speaking deck watch officer. If the vessel is found to be dragging anchor, the agent, master, operator or person in charge shall ensure that Sector

COAST PILOT 9 (Continued)

Anchorage or Marine Safety Detachment Kenai is immediately notified of hazardous condition as soon as practical.

Specific Actions for Heavy Weather

Gale Warnings, if forecasted and/or actual winds are in excess of 34 knots the propulsion plant shall be on standby and ready to provide immediate propulsion. The vessel's position and under-keel clearance shall be confirmed at a minimum of once every 15 minutes by the licensed deck watch officer. Ensure a second anchor is made ready for letting go.

Storm Warnings, if forecasted and/or actual winds are in excess of 48 knots the vessel must take the precautions for Gale Warnings and discuss the following measures with the local Coast Guard, the Southwest Alaska Pilot's Association and the vessel agent. Consider increasing the scope of anchor chain as appropriate. Determine the availability and locations of potential stand by tugs, with the appropriate size and horsepower, which could assist the vessel in holding position. Assess the need to bring a Pilot onboard and if the Master and Pilot deem it necessary, put to sea for the duration of the heavy weather.

(L-401-2011) 27/11

Page 487—Paragraph 27, line 6; read:

City. In July 2010, a 2-knot northwesterly current was experienced by NOAA Ship Fairweather while anchored there.

(L-211-2011) 27/11

Page 488—Paragraph 32, line 7; read:

ice conditions and the remoteness of the locality. Changing current and wind conditions offshore of the shoal often cause confused, choppy seas which may be dangerous for small craft.

(L-211-2011) 27/11

Page 488—Paragraph 33, lines 3 to 4; read:

and steep sided.

(L-211-2011) 27/11

Page 488—Paragraph 34, line 5; read:

the islands are deep, the bottom is mostly rocky, but varies locally from stone to broken shell to mud, and …

(L-211-2011) 27/11

Page 488—Paragraph 35, lines 3 to 18; read:

and 8 miles NNW of Fairway Rock. **Diomede** (native name Inalik), the only village on the island, is midway along the W shore. A helipad is on a filled jetty W of the village. A yellow, white, and green rotating aerobeacon shows atop a cylindrical white water tank just E of the helipad when incoming or outgoing aircraft are expected. The aerobeacon is obscured between approximately 000° and 180°. Diomede has a health clinic and a native store. Very limited amounts of food and fuel are available. Mail is delivered on regular helicopter flights via Nome and Wales. A shoal extends W from the helipad toward the S end of Big Diomede Island across the U.S.-Russia boundary. Vessels approaching Little Diomede Island from the S and E may run close along the S shore, keeping in depths greater than 14 fathoms until the village is sighted, and anchor S of the shoal. Approach from E also has been made …

(L-608-2011) 27/11

NOS TIDE TABLES CORRECTIONS

EAST PACIFIC Ed 2011 LAST NM N4/11

Page 200 to Page 203;

Replace with pages from back of this Subsection.

(NOAA) N27/11

Vessel Operating Procedures for Los Angeles/Long Beach
(Best Maritime Practices)

Anchoring Procedures

In addition to observing all port tariffs and U.S. Coast Guard regulations, the Master of any commercial vessel at anchor shall implement the following Standards of Care:

1. Maintain a 24-hour bridge watch by an English speaking licensed deck officer monitoring VHF-FM Channel 16.
2. Make frequent checks to assure vessel is not dragging anchor.
3. When winds exceed 40 knots, have the propulsion plant ready to bring on line on short notice and make another anchor ready to let go.
4. Provide 15-minute advance notice to the respective pilot station (inside anchorages) or to VTS (outside anchorages) before heaving anchor to get underway.

General Anchoring Guidelines

Outside the Federal breakwaters:

1. All anchorages outside the Federal breakwater will be managed and monitored by the Vessel Traffic Service (VTS).
2. Any vessel desiring to use one of these anchorages must advise their intentions to VTS on VHF-FM Channel 14 and receive clearance to do so from VTS.

Inside the Federal breakwaters:

1. All anchorages inside the Federal breakwater will be managed and monitored by the Long Beach and/or Los Angeles Pilot Station.

Under-Keel Clearance

Minimum clearances (between the deepest point on the vessel and the bottom in still water conditions) are established for these ports and depend upon transit/anchor location.

1. Between **Los Angeles Lighted Whistle Buoy 3** and **Los Angeles Main Channel Lighted Buoy 11**, and between **Long Beach Channel Approach Lighted Whistle Buoy** and **Long Beach Channel Lighted Buoy 3**, minimum under-keel clearance before correction for roll and pitch is 10 percent of vessel's draft.
2. In the channel between **Los Angeles Main Channel Lighted Buoy 11** and position off of designated berth, and in the channel between **Long Beach Channel Lighted Buoy 3** and position off of designated berth, minimum under-keel clearance is 1.5 feet (.46 meter).
3. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel clearance is 3 feet (.91 meter).
4. Larger vessels require more under-keel clearance.
5. In the final approach to the berth, and while at berth, the vessel must always remain afloat.
6. Terminal or vessel operators may require minimum under-keel clearances that are more restrictive than the above guidelines.

Reduced Visibility

In Los Angeles/Long Beach harbors Standards of Care exist for movements in reduced visibility. The definition of reduced visibility is dependent upon vessel type and size, but generally ranges from 0.5 nautical mile to 1.0 nautical mile. Special provisions providing equivalent safety levels may permit some operation in reduced visibility. Whenever visibility inside the Federal breakwater is less than 0.5 mile, the respective Vessel Traffic Center (VTC) will impose one-way traffic where appropriate.

General guidelines for movements in reduced visibility without a pilot are:

1. Masters must make a positive evaluation of factors including, but not limited to, traffic in the harbors, planned transit speeds, vessel maneuverability, quality of the vessel's navigation systems, availability of assist tugs, and other special circumstances.
2. Vessels 1600 GT or greater shall make the following broadcast to the VTS on VHF-FM channel 14 at least 15 minutes prior to getting underway: "*Vessel name/call sign*, making our inclement weather COTP notification, as per guidance within the Harbor Safety Plan, that we intend to transit from *vessel location* to *intended destination*."
3. A safety broadcast shall also be made on VHF-FM Channel 13, and the vessel shall coordinate its movement with the appropriate Vessel Traffic Center (VTC).

Port Moller, Bristol Bay, Alaska, 2011

Times and Heights of High and Low Waters

January

	Time	Height	
	h m	ft	cm
1 Sa	0127	–2.0	–61
	0842	10.8	329
	1400	5.5	168
	1857	9.8	299
2 Su	0217	–2.0	–61
	0939	11.0	335
	1500	5.6	171
	1946	9.3	283
3 M	0306	–1.8	–55
	1032	11.2	341
	1558	5.6	171
	2038	8.8	268
4 Tu ●	0354	–1.5	–46
	1120	11.2	341
	1654	5.4	165
	2134	8.3	253
5 W	0441	–1.0	–30
	1204	11.2	341
	1749	5.1	155
	2235	7.9	241
6 Th	0527	–0.4	–12
	1244	11.1	338
	1841	4.6	140
	2337	7.6	232
7 F	0612	0.3	9
	1322	11.0	335
	1932	4.0	122
8 Sa	0041	7.4	226
	0658	1.1	34
	1356	10.8	329
	2019	3.3	101
9 Su	0147	7.4	226
	0744	2.0	61
	1429	10.5	320
	2102	2.7	82
10 M	0251	7.5	229
	0831	2.9	88
	1500	10.2	311
	2144	2.0	61
11 Tu	0354	7.8	238
	0919	3.9	119
	1529	9.8	299
	2223	1.4	43
12 W ◐	0454	8.1	247
	1008	4.7	143
	1555	9.5	290
	2301	0.9	27
13 Th	0552	8.4	256
	1058	5.5	168
	1618	9.2	280
	2338	0.4	12
14 F	0646	8.8	268
	1149	6.1	186
	1639	9.0	274
15 Sa	0015	0.0	0
	0736	9.2	280
	1238	6.6	201
	1704	9.1	277

	Time	Height	
	h m	ft	cm
16 Su	0052	–0.5	–15
	0823	9.5	290
	1326	6.8	207
	1738	9.2	280
17 M	0131	–1.0	–30
	0907	9.8	299
	1413	6.9	210
	1821	9.3	283
18 Tu	0214	–1.4	–43
	0949	10.1	308
	1502	6.7	204
	1913	9.3	283
19 W ○	0300	–1.6	–49
	1029	10.4	317
	1555	6.2	189
	2014	9.2	280
20 Th	0349	–1.5	–46
	1109	10.8	329
	1651	5.4	165
	2127	8.9	271
21 F	0441	–1.2	–37
	1149	11.1	338
	1747	4.4	134
	2251	8.7	265
22 Sa	0536	–0.6	–18
	1230	11.3	344
	1844	3.1	94
23 Su	0016	8.7	265
	0634	0.3	9
	1313	11.4	347
	1941	1.8	55
24 M	0138	8.9	271
	0734	1.3	40
	1357	11.5	351
	2037	0.5	15
25 Tu	0256	9.2	280
	0836	2.4	73
	1443	11.3	344
	2133	–0.5	–15
26 W ◑	0410	9.7	296
	0939	3.3	101
	1530	11.1	338
	2229	–1.2	–37
27 Th	0520	10.1	308
	1043	4.1	125
	1620	10.7	326
	2324	–1.7	–52
28 F	0626	10.5	320
	1147	4.6	140
	1711	10.3	314
29 Sa	0019	–1.8	–55
	0727	10.7	326
	1250	5.0	152
	1804	9.9	302
30 Su	0113	–1.8	–55
	0825	10.8	329
	1349	5.1	155
	1856	9.5	290
31 M	0203	–1.5	–46
	0919	10.8	329
	1446	5.2	158
	1947	9.0	274

February

	Time	Height	
	h m	ft	cm
1 Tu	0251	–1.1	–34
	1009	10.8	329
	1631	4.9	149
	2039	8.6	262
2 W ●	0337	–0.6	–18
	1053	10.6	323
	1631	4.9	149
	2134	8.2	250
3 Th	0422	0.1	3
	1131	10.4	317
	1720	4.5	137
	2231	7.9	241
4 F	0505	0.8	24
	1206	10.2	311
	1807	4.1	125
	2330	7.8	238
5 Sa	0548	1.5	46
	1237	10.0	305
	1851	3.5	107
6 Su	0029	7.8	238
	0632	2.3	70
	1307	9.7	296
	1933	2.9	88
7 M	0129	7.9	241
	0717	3.1	94
	1337	9.5	290
	2014	2.3	70
8 Tu	0229	8.1	247
	0804	3.9	119
	1406	9.2	280
	2052	1.8	55
9 W	0325	8.3	253
	0851	4.6	140
	1433	9.0	274
	2130	1.3	40
10 Th ◐	0420	8.6	262
	0938	5.2	158
	1459	8.8	268
	2208	0.9	27
11 F	0513	8.8	268
	1026	5.7	174
	1524	8.8	268
	2247	0.4	12
12 Sa	0604	9.1	277
	1113	6.2	189
	1553	8.9	271
	2329	0.0	0
13 Su	0652	9.3	283
	1200	6.4	195
	1631	9.1	277
14 M	0012	–0.5	–15
	0736	9.5	290
	1247	6.4	195
	1718	9.3	283
15 Tu	0058	–0.8	–24
	0817	9.7	296
	1336	6.1	186
	1812	9.4	287

	Time	Height	
	h m	ft	cm
16 W	0145	–1.0	–30
	0856	9.9	302
	1426	5.6	171
	1914	9.5	290
17 Th ○	0235	–1.0	–30
	0936	10.2	311
	1520	4.7	143
	2025	9.4	287
18 F	0328	–0.6	–18
	1017	10.5	320
	1616	3.7	113
	2143	9.4	287
19 Sa	0424	0.0	0
	1059	10.7	326
	1713	2.5	76
	2304	9.5	290
20 Su	0522	0.7	21
	1143	10.8	329
	1810	1.3	40
21 M	0022	9.7	296
	0622	1.6	49
	1230	10.9	332
	1908	0.2	6
22 Tu	0138	10.1	308
	0725	2.4	73
	1320	10.8	329
	2007	–0.7	–21
23 W	0249	10.4	317
	0828	3.1	94
	1413	10.7	326
	2105	–1.2	–37
24 Th ◑	0357	10.7	326
	0932	3.7	113
	1509	10.5	320
	2203	–1.5	–46
25 F	0501	10.9	332
	1034	4.0	122
	1606	10.2	311
	2301	–1.5	–46
26 Sa	0603	10.9	332
	1137	4.3	131
	1703	9.9	302
	2358	–1.3	–40
27 Su	0702	10.9	332
	1237	4.3	131
	1801	9.5	290
28 M	0053	–1.0	–30
	0756	10.7	326
	1334	4.3	131
	1857	9.2	280

March

	Time	Height	
	h m	ft	cm
1 Tu	0145	–0.5	–15
	0846	10.5	320
	1427	4.2	128
	1951	8.9	271
2 W	0233	0.1	3
	0931	10.2	311
	1517	4.1	125
	2045	8.6	262
3 Th	0318	0.8	24
	1011	9.9	302
	1603	3.8	116
	2140	8.4	256
4 F ●	0402	1.5	46
	1045	9.5	290
	1646	3.5	107
	2235	8.3	253
5 Sa	0445	2.3	70
	1114	9.2	280
	1726	3.1	94
	2329	8.3	253
6 Su	0528	3.0	91
	1142	8.9	271
	1804	2.6	79
7 M	0022	8.5	259
	0613	3.7	113
	1210	8.6	262
	1841	2.2	67
8 Tu	0114	8.7	265
	0658	4.2	128
	1237	8.4	256
	1919	1.8	55
9 W	0206	8.9	271
	0745	4.7	143
	1305	8.2	250
	1956	1.4	43
10 Th	0256	9.1	277
	0832	5.1	155
	1332	8.2	250
	2035	1.0	30
11 F	0345	9.3	283
	0917	5.5	168
	1402	8.2	250
	2115	0.7	21
12 Sa ◐	0433	9.4	287
	1001	5.8	177
	1437	8.4	256
	2158	0.3	9
13 Su	0520	9.5	290
	1046	5.9	180
	1521	8.6	262
	2245	0.1	3
14 M	0604	9.6	293
	1133	5.8	177
	1612	8.8	268
	2334	–0.1	–3
15 Tu	0644	9.7	296
	1221	5.4	165
	1712	9.0	274

	Time	Height	
	h m	ft	cm
16 W	0026	–0.2	–6
	0723	9.8	299
	1310	4.7	143
	1819	9.2	280
17 Th	0119	0.0	0
	0800	10.0	305
	1400	3.8	116
	1929	9.4	287
18 F	0213	0.4	12
	0839	10.1	308
	1453	2.7	82
	2043	9.6	293
19 Sa ○	0310	1.0	30
	0921	10.2	311
	1547	1.5	46
	2159	10.0	305
20 Su	0409	1.7	52
	1007	10.3	314
	1642	0.4	12
	2313	10.4	317
21 M	0510	2.4	73
	1056	10.3	314
	1739	–0.5	–15
22 Tu	0023	10.8	329
	0613	3.0	91
	1149	10.2	311
	1837	–1.1	–34
23 W	0131	11.2	341
	0716	3.4	104
	1246	10.1	308
	1936	–1.5	–46
24 Th	0235	11.4	347
	0819	3.6	110
	1347	9.9	302
	2036	–1.5	–46
25 F	0336	11.5	351
	0921	3.7	113
	1449	9.7	296
	2135	–1.3	–40
26 Sa ◑	0436	11.4	347
	1022	3.7	113
	1551	9.5	290
	2233	–0.9	–27
27 Su	0533	11.2	341
	1122	3.6	110
	1653	9.3	283
	2331	–0.4	–12
28 M	0626	11.0	335
	1219	3.5	107
	1755	9.1	277
29 Tu	0026	0.2	6
	0716	10.6	323
	1313	3.3	101
	1855	8.9	271
30 W	0119	0.9	27
	0800	10.2	311
	1403	3.0	91
	1952	8.7	265
31 Th	0208	1.7	52
	0840	9.7	296
	1448	2.8	85
	2049	8.7	265

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Port Moller, Bristol Bay, Alaska, 2011

Times and Heights of High and Low Waters

April

	Time	Height	
	h m	ft	cm
1 F	0255	2.5	76
	0914	9.2	280
	1529	2.5	76
	2144	8.7	265
2 Sa	0341	3.2	98
	0944	8.7	265
	1606	2.2	67
	2236	8.9	271
3 Su ●	0426	3.9	119
	1010	8.3	253
	1642	1.9	58
	2326	9.1	277
4 M	0511	4.5	137
	1036	7.9	241
	1716	1.6	49
5 Tu	0013	9.4	287
	0557	4.9	149
	1101	7.7	235
	1750	1.3	40
6 W	0059	9.6	293
	0644	5.2	158
	1127	7.6	232
	1825	1.0	30
7 Th	0144	9.8	299
	0730	5.4	165
	1156	7.6	232
	1903	0.7	21
8 F	0229	10.0	305
	0815	5.6	171
	1230	7.7	235
	1945	0.5	15
9 Sa	0313	10.1	308
	0859	5.6	171
	1313	7.8	238
	2030	0.3	9
10 Su	0356	10.1	308
	0943	5.6	171
	1405	8.0	244
	2117	0.2	6
11 M ◐	0437	10.1	308
	1027	5.3	162
	1505	8.1	247
	2207	0.3	9
12 Tu	0516	10.1	308
	1114	4.7	143
	1611	8.3	253
	2301	0.5	15
13 W	0554	10.1	308
	1202	3.9	119
	1723	8.6	262
	2357	1.0	30
14 Th	0630	10.2	311
	1251	2.9	88
	1837	8.9	271
15 F	0056	1.6	49
	0707	10.2	311
	1340	1.7	52
	1949	9.4	287

	Time	Height	
	h m	ft	cm
16 Sa	0155	2.3	70
	0747	10.2	311
	1431	0.5	15
	2101	10.0	305
17 Su ○	0256	2.9	88
	0830	10.1	308
	1523	–0.5	–15
	2210	10.6	323
18 M	0358	3.5	107
	0920	10.0	305
	1618	–1.3	–40
	2317	11.2	341
19 Tu	0501	3.9	119
	1014	9.8	299
	1713	–1.7	–52
20 W	0019	11.6	354
	0603	4.1	125
	1114	9.6	293
	1810	–1.9	–58
21 Th	0119	11.9	363
	0706	4.1	125
	1216	9.4	287
	1908	–1.8	–55
22 F	0217	12.0	366
	0807	3.9	119
	1322	9.2	280
	2007	–1.4	–43
23 Sa	0312	11.9	363
	0907	3.7	113
	1428	9.0	274
	2104	–0.9	–27
24 Su ◑	0405	11.7	357
	1005	3.3	101
	1534	8.8	268
	2201	–0.2	–6
25 M	0456	11.4	347
	1102	3.0	91
	1639	8.6	262
	2257	0.6	18
26 Tu	0543	11.0	335
	1156	2.6	79
	1744	8.6	262
	2352	1.5	46
27 W	0627	10.5	320
	1247	2.2	67
	1847	8.6	262
28 Th	0046	2.4	73
	0705	9.9	302
	1332	1.8	55
	1947	8.7	265
29 F	0137	3.3	101
	0739	9.3	283
	1413	1.5	46
	2045	8.9	271
30 Sa	0227	4.1	125
	0808	8.7	265
	1451	1.2	37
	2139	9.2	280

May

	Time	Height	
	h m	ft	cm
1 Su	0316	4.8	146
	0833	8.2	250
	1525	1.0	30
	2229	9.5	290
2 M ●	0405	5.3	162
	0855	7.8	238
	1558	0.8	24
	2315	9.8	299
3 Tu	0452	5.7	174
	0914	7.6	232
	1631	0.6	18
	2358	10.1	308
4 W	0539	5.9	180
	0938	7.5	229
	1705	0.3	9
5 Th	0040	10.3	314
	0625	6.0	183
	1011	7.5	229
	1742	0.1	3
6 F	0121	10.5	320
	0710	6.0	183
	1054	7.5	229
	1823	–0.1	–3
7 Sa	0202	10.7	326
	0755	5.8	177
	1145	7.5	229
	1908	–0.2	–6
8 Su	0241	10.8	329
	0840	5.5	168
	1245	7.6	232
	1956	–0.1	–3
9 M	0320	10.8	329
	0924	5.0	152
	1354	7.6	232
	2046	0.2	6
10 Tu ◐	0356	10.8	329
	1010	4.2	128
	1509	7.7	235
	2138	0.8	24
11 W	0432	10.7	326
	1057	3.3	101
	1626	8.0	244
	2235	1.5	46
12 Th	0507	10.7	326
	1145	2.1	64
	1743	8.4	256
	2335	2.4	73
13 F	0544	10.6	323
	1234	0.9	27
	1856	9.0	274
14 Sa	0038	3.3	101
	0622	10.5	320
	1323	–0.2	–6
	2005	9.7	296
15 Su	0142	4.0	122
	0704	10.3	314
	1413	–1.2	–37
	2112	10.4	317

	Time	Height	
	h m	ft	cm
16 M	0245	4.6	140
	0750	10.1	308
	1505	–1.8	–55
	2216	11.0	335
17 Tu ○	0348	4.9	149
	0842	9.8	299
	1558	–2.2	–67
	2315	11.5	351
18 W	0451	5.0	152
	0941	9.4	287
	1652	–2.2	–67
19 Th	0011	11.9	363
	0552	4.8	146
	1045	9.1	277
	1747	–2.0	–61
20 F	0105	12.1	369
	0652	4.5	137
	1151	8.8	268
	1843	–1.6	–49
21 Sa	0156	12.1	369
	0752	4.1	125
	1258	8.5	259
	1938	–1.0	–30
22 Su	0245	12.0	366
	0849	3.6	110
	1406	8.3	253
	2032	–0.2	–6
23 M	0331	11.8	360
	0943	3.0	91
	1514	8.2	250
	2125	0.7	21
24 Tu ◑	0415	11.4	347
	1036	2.4	73
	1620	8.2	250
	2218	1.7	52
25 W	0455	10.9	332
	1126	1.9	58
	1727	8.2	250
	2312	2.8	85
26 Th	0533	10.3	314
	1212	1.4	43
	1831	8.5	259
27 F	0007	3.8	116
	0606	9.7	296
	1255	1.0	30
	1932	8.8	268
28 Sa	0101	4.7	143
	0636	9.1	277
	1334	0.7	21
	2029	9.1	277
29 Su	0154	5.4	165
	0701	8.6	262
	1410	0.4	12
	2122	9.5	290
30 M	0245	5.9	180
	0720	8.2	250
	1444	0.2	6
	2211	9.8	299
31 Tu	0335	6.3	192
	0735	8.0	244
	1517	0.0	0
	2255	10.1	308

June

	Time	Height	
	h m	ft	cm
1 W ●	0423	6.5	198
	0757	7.9	241
	1551	–0.3	–9
	2336	10.4	317
2 Th	0509	6.6	201
	0832	7.8	238
	1629	–0.5	–15
3 F	0015	10.6	323
	0555	6.5	198
	0920	7.8	238
	1710	–0.6	–18
4 Sa	0053	10.9	332
	0641	6.2	189
	1020	7.7	235
	1754	–0.7	–21
5 Su	0131	11.1	338
	0728	5.6	171
	1128	7.6	232
	1841	–0.5	–15
6 M	0207	11.2	341
	0814	4.9	149
	1244	7.6	232
	1932	–0.1	–3
7 Tu	0243	11.3	344
	0901	3.9	119
	1405	7.6	232
	2025	0.7	21
8 W ◐	0318	11.3	344
	0949	2.8	85
	1525	7.8	238
	2120	1.6	49
9 Th	0353	11.2	341
	1037	1.6	49
	1642	8.2	250
	2219	2.7	82
10 F	0430	11.0	335
	1127	0.4	12
	1756	8.8	268
	2322	3.7	113
11 Sa	0509	10.8	329
	1217	–0.6	–18
	1907	9.5	290
12 Su	0028	4.6	140
	0551	10.5	320
	1308	–1.5	–46
	2012	10.1	308
13 M	0133	5.2	158
	0636	10.2	311
	1359	–2.0	–61
	2115	10.7	326
14 Tu	0236	5.5	168
	0725	9.9	302
	1451	–2.3	–70
	2214	11.2	341
15 W ○	0338	5.6	171
	0820	9.5	290
	1543	–2.2	–67
	2308	11.5	351

	Time	Height	
	h m	ft	cm
16 Th	0438	5.4	165
	0920	9.1	277
	1636	–2.0	–61
	2359	11.7	357
17 F	0538	5.1	155
	1025	8.7	265
	1727	–1.6	–49
18 Sa	0046	11.8	360
	0635	4.6	140
	1132	8.4	256
	1819	–1.0	–30
19 Su	0132	11.8	360
	0731	4.0	122
	1239	8.1	247
	1910	–0.3	–9
20 M	0214	11.6	354
	0825	3.4	104
	1346	8.0	244
	2001	0.6	18
21 Tu	0253	11.4	347
	0915	2.7	82
	1453	7.9	241
	2051	1.6	49
22 W	0330	11.0	335
	1002	2.0	61
	1559	8.0	244
	2141	2.7	82
23 Th ◑	0405	10.5	320
	1047	1.5	46
	1703	8.2	250
	2233	3.7	113
24 F	0438	10.0	305
	1131	1.0	30
	1806	8.5	259
	2327	4.7	143
25 Sa	0508	9.4	287
	1212	0.6	18
	1905	8.8	268
26 Su	0022	5.5	168
	0535	9.0	274
	1250	0.3	9
	2000	9.2	280
27 M	0115	6.1	186
	0557	8.6	262
	1327	0.0	0
	2051	9.5	290
28 Tu	0205	6.6	201
	0615	8.4	256
	1402	–0.2	–6
	2139	9.7	296
29 W	0253	6.8	207
	0639	8.4	256
	1438	–0.5	–15
	2222	10.0	305
30 Th ●	0340	6.9	210
	0714	8.4	256
	1516	–0.7	–21
	2302	10.3	314

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Port Moller, Bristol Bay, Alaska, 2011

Times and Heights of High and Low Waters

July

	Time	Height	
	h m	ft	cm
1 F	0426	6.8	207
	0801	8.4	256
	1558	–0.9	–27
	2339	10.5	320
2 Sa	0514	6.4	195
	0901	8.2	250
	1643	–0.9	–27
3 Su	0015	10.8	329
	0602	5.7	174
	1014	8.1	247
	1731	–0.7	–21
4 M	0051	11.1	338
	0652	4.8	146
	1135	8.0	244
	1822	–0.2	–6
5 Tu	0127	11.3	344
	0743	3.7	113
	1257	8.0	244
	1916	0.5	15
6 W	0204	11.4	347
	0833	2.4	73
	1418	8.2	250
	2012	1.5	46
7 Th ◐	0241	11.3	344
	0923	1.2	37
	1534	8.6	262
	2111	2.5	76
8 F	0321	11.2	341
	1015	0.0	0
	1648	9.1	277
	2212	3.6	110
9 Sa	0402	11.0	335
	1107	–0.9	–27
	1758	9.6	293
	2316	4.4	134
10 Su	0447	10.7	326
	1201	–1.5	–46
	1904	10.1	308
11 M	0021	5.1	155
	0534	10.4	317
	1254	–1.9	–58
	2007	10.5	320
12 Tu	0125	5.4	165
	0625	10.0	305
	1347	–2.0	–61
	2106	10.8	329
13 W	0226	5.6	171
	0717	9.6	293
	1439	–1.9	–58
	2202	10.9	332
14 Th ○	0325	5.5	168
	0813	9.2	280
	1530	–1.6	–49
	2253	11.1	338
15 F	0423	5.3	162
	0914	8.8	268
	1620	–1.2	–37
	2339	11.1	338

	Time	Height	
	h m	ft	cm
16 Sa	0519	4.9	149
	1018	8.4	256
	1709	–0.6	–18
17 Su	0021	11.1	338
	0613	4.4	134
	1122	8.2	250
	1757	0.1	3
18 M	0100	11.0	335
	0704	3.7	113
	1227	8.0	244
	1845	0.9	27
19 Tu	0136	10.8	329
	0752	3.0	91
	1331	8.0	244
	1933	1.7	52
20 W	0211	10.5	320
	0838	2.4	73
	1434	8.1	247
	2022	2.7	82
21 Th	0244	10.2	311
	0921	1.8	55
	1534	8.3	253
	2111	3.6	110
22 F ◑	0316	9.8	299
	1002	1.3	40
	1633	8.6	262
	2200	4.4	134
23 Sa	0346	9.4	287
	1043	0.9	27
	1731	8.8	268
	2251	5.2	158
24 Su	0414	9.0	274
	1123	0.6	18
	1826	9.0	274
	2342	5.8	177
25 M	0440	8.8	268
	1202	0.3	9
	1918	9.2	280
26 Tu	0032	6.3	192
	0503	8.7	265
	1241	0.0	0
	2006	9.3	283
27 W	0119	6.6	201
	0531	8.7	265
	1320	–0.3	–9
	2051	9.5	290
28 Th	0204	6.7	204
	0609	8.8	268
	1400	–0.5	–15
	2133	9.7	296
29 F	0250	6.6	201
	0656	8.8	268
	1443	–0.7	–21
	2212	9.9	302
30 Sa ●	0338	6.2	189
	0754	8.8	268
	1530	–0.7	–21
	2249	10.2	311
31 Su	0429	5.5	168
	0905	8.6	262
	1620	–0.5	–15
	2326	10.5	320

August

	Time	Height	
	h m	ft	cm
1 M	0521	4.5	137
	1027	8.6	262
	1712	0.0	0
2 Tu	0003	10.7	326
	0614	3.3	101
	1149	8.7	265
	1808	0.7	21
3 W	0042	10.9	332
	0708	2.0	61
	1308	9.0	274
	1906	1.5	46
4 Th	0124	11.0	335
	0802	0.8	24
	1423	9.4	287
	2006	2.4	73
5 F	0208	11.0	335
	0856	–0.3	–9
	1533	9.8	299
	2107	3.2	98
6 Sa ◐	0255	10.9	332
	0951	–1.1	–34
	1641	10.2	311
	2209	3.9	119
7 Su	0344	10.7	326
	1047	–1.5	–46
	1746	10.4	317
	2311	4.5	137
8 M	0436	10.4	317
	1143	–1.7	–52
	1849	10.6	323
9 Tu	0014	4.8	146
	0530	10.1	308
	1240	–1.7	–52
	1948	10.7	326
10 W	0115	5.0	152
	0626	9.7	296
	1334	–1.4	–43
	2045	10.6	323
11 Th	0213	5.0	152
	0722	9.3	283
	1426	–1.0	–30
	2137	10.6	323
12 F	0310	4.8	146
	0819	8.9	271
	1516	–0.5	–15
	2225	10.4	317
13 Sa ○	0403	4.5	137
	0919	8.6	262
	1604	0.1	3
	2307	10.3	314
14 Su	0454	4.1	125
	1020	8.4	256
	1651	0.8	24
	2344	10.1	308
15 M	0542	3.6	110
	1121	8.3	253
	1737	1.6	49

	Time	Height	
	h m	ft	cm
16 Tu	0018	9.8	299
	0628	3.1	94
	1221	8.3	253
	1824	2.3	70
17 W	0051	9.6	293
	0711	2.5	76
	1319	8.5	259
	1912	3.0	91
18 Th	0122	9.3	283
	0753	2.0	61
	1415	8.7	265
	2001	3.7	113
19 F	0154	9.0	274
	0833	1.6	49
	1509	9.0	274
	2049	4.3	131
20 Sa	0226	8.8	268
	0912	1.2	37
	1601	9.1	277
	2135	4.9	149
21 Su ◑	0256	8.6	262
	0951	0.9	27
	1651	9.2	280
	2222	5.3	162
22 M	0325	8.5	259
	1031	0.7	21
	1741	9.3	283
	2307	5.8	177
23 Tu	0353	8.5	259
	1111	0.4	12
	1828	9.3	283
	2352	6.0	183
24 W	0425	8.6	262
	1154	0.2	6
	1912	9.3	283
25 Th	0035	6.1	186
	0506	8.7	265
	1238	0.0	0
	1952	9.4	287
26 F	0119	5.9	180
	0556	8.9	271
	1323	–0.1	–3
	2030	9.5	290
27 Sa	0206	5.4	165
	0655	9.0	274
	1412	0.0	0
	2107	9.7	296
28 Su ●	0255	4.7	143
	0803	9.0	274
	1503	0.3	9
	2146	9.9	302
29 M	0347	3.7	113
	0921	9.1	277
	1558	0.8	24
	2226	10.1	308
30 Tu	0442	2.5	76
	1041	9.4	287
	1656	1.4	43
	2309	10.2	311
31 W	0537	1.3	40
	1157	9.8	299
	1757	2.1	64
	2355	10.4	317

September

	Time	Height	
	h m	ft	cm
1 Th	0633	0.2	6
	1309	10.3	314
	1858	2.7	82
2 F	0045	10.4	317
	0731	–0.7	–21
	1418	10.7	326
	2001	3.2	98
3 Sa	0138	10.4	317
	0829	–1.3	–40
	1523	11.0	335
	2102	3.6	110
4 Su ◐	0234	10.3	314
	0927	–1.6	–49
	1625	11.2	341
	2203	3.9	119
5 M	0332	10.1	308
	1025	–1.6	–49
	1725	11.1	338
	2304	4.0	122
6 Tu	0431	9.9	302
	1123	–1.3	–40
	1824	11.0	335
7 W	0004	4.0	122
	0531	9.6	293
	1220	–0.9	–27
	1919	10.8	329
8 Th	0102	4.0	122
	0631	9.4	287
	1315	–0.4	–12
	2011	10.5	320
9 F	0157	3.8	116
	0730	9.1	277
	1407	0.3	9
	2058	10.2	311
10 Sa	0249	3.6	110
	0829	8.8	268
	1457	1.0	30
	2141	9.8	299
11 Su	0338	3.3	101
	0928	8.7	265
	1546	1.8	55
	2219	9.3	283
12 M ○	0423	3.0	91
	1027	8.7	265
	1633	2.6	79
	2253	8.9	271
13 Tu	0505	2.6	79
	1123	8.8	268
	1721	3.2	98
	2324	8.6	262
14 W	0545	2.2	67
	1216	9.0	274
	1809	3.8	116
	2355	8.3	253
15 Th	0624	1.9	58
	1307	9.3	283
	1858	4.3	131

	Time	Height	
	h m	ft	cm
16 F	0026	8.1	247
	0702	1.5	46
	1356	9.5	290
	1946	4.6	140
17 Sa	0059	7.9	241
	0741	1.3	40
	1443	9.7	296
	2032	4.9	149
18 Su	0132	7.8	238
	0820	1.0	30
	1529	9.8	299
	2116	5.2	158
19 M	0205	7.8	238
	0859	0.8	24
	1613	9.8	299
	2159	5.4	165
20 Tu ◑	0239	7.9	241
	0940	0.7	21
	1657	9.8	299
	2240	5.5	168
21 W	0317	8.0	244
	1022	0.5	15
	1738	9.7	296
	2321	5.4	165
22 Th	0402	8.2	250
	1108	0.5	15
	1816	9.7	296
23 F	0004	5.1	155
	0456	8.5	259
	1157	0.6	18
	1851	9.7	296
24 Sa	0047	4.5	137
	0559	8.7	265
	1248	0.9	27
	1925	9.7	296
25 Su	0133	3.6	110
	0707	9.0	274
	1342	1.3	40
	2001	9.8	299
26 M	0222	2.6	79
	0819	9.3	283
	1440	1.9	58
	2040	9.8	299
27 Tu ●	0314	1.4	43
	0935	9.7	296
	1540	2.5	76
	2125	9.9	302
28 W	0409	0.3	9
	1049	10.3	314
	1643	3.1	94
	2215	9.9	302
29 Th	0505	–0.6	–18
	1158	10.9	332
	1746	3.5	107
	2310	9.9	302
30 F	0603	–1.3	–40
	1304	11.4	347
	1850	3.7	113

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Port Moller, Bristol Bay, Alaska, 2011

Times and Heights of High and Low Waters

October

	Time	Height	
	h m	ft	cm
1 Sa	0009	9.8	299
	0702	–1.7	–52
	1407	11.8	360
	1953	3.8	116
2 Su	0112	9.7	296
	0802	–1.8	–55
	1506	11.9	363
	2054	3.7	113
3 M ◐	0216	9.6	293
	0901	–1.6	–49
	1603	11.9	363
	2154	3.5	107
4 Tu	0321	9.5	290
	1000	–1.2	–37
	1659	11.7	357
	2253	3.3	101
5 W	0425	9.4	287
	1058	–0.6	–18
	1752	11.4	347
	2350	3.0	91
6 Th	0529	9.2	280
	1155	0.1	3
	1841	10.9	332
7 F	0045	2.7	82
	0633	9.0	274
	1251	1.0	30
	1927	10.4	317
8 Sa	0137	2.4	73
	0734	8.9	271
	1344	1.8	55
	2008	9.8	299
9 Su	0224	2.1	64
	0835	8.9	271
	1435	2.7	82
	2045	9.2	280
10 M	0307	1.9	58
	0934	9.0	274
	1526	3.5	107
	2118	8.6	262
11 Tu ○	0347	1.6	49
	1029	9.2	280
	1616	4.2	128
	2148	8.1	247
12 W	0425	1.4	43
	1120	9.5	290
	1706	4.8	146
	2217	7.7	235
13 Th	0500	1.3	40
	1207	9.8	299
	1755	5.1	155
	2246	7.4	226
14 F	0536	1.1	34
	1252	10.0	305
	1844	5.3	162
	2317	7.2	219
15 Sa	0612	0.9	27
	1336	10.2	311
	1931	5.4	165
	2351	7.2	219

	Time	Height	
	h m	ft	cm
16 Su	0650	0.8	24
	1418	10.4	317
	2016	5.5	168
17 M	0027	7.2	219
	0730	0.6	18
	1459	10.4	317
	2059	5.4	165
18 Tu	0109	7.3	223
	0811	0.5	15
	1538	10.4	317
	2139	5.3	162
19 W ◑	0158	7.4	226
	0855	0.6	18
	1615	10.4	317
	2218	5.0	152
20 Th	0253	7.6	232
	0940	0.7	21
	1650	10.3	314
	2258	4.5	137
21 F	0355	7.8	238
	1029	1.0	30
	1722	10.2	311
	2340	3.7	113
22 Sa	0503	8.1	247
	1122	1.6	49
	1754	10.2	311
23 Su	0024	2.7	82
	0613	8.5	259
	1219	2.2	67
	1828	10.2	311
24 M	0110	1.5	46
	0723	9.1	277
	1319	2.9	88
	1904	10.2	311
25 Tu	0158	0.4	12
	0834	9.7	296
	1421	3.6	110
	1946	10.1	308
26 W ●	0249	–0.7	–21
	0943	10.4	317
	1525	4.2	128
	2033	10.0	305
27 Th	0343	–1.5	–46
	1050	11.1	338
	1630	4.5	137
	2129	9.8	299
28 F	0439	–2.0	–61
	1153	11.7	357
	1735	4.6	140
	2231	9.5	290
29 Sa	0537	–2.2	–67
	1253	12.1	369
	1839	4.4	134
	2338	9.3	283
30 Su	0636	–2.2	–67
	1351	12.3	375
	1941	4.1	125
31 M	0048	9.1	277
	0736	–1.9	–58
	1445	12.4	378
	2042	3.6	110

November

	Time	Height	
	h m	ft	cm
1 Tu	0158	9.0	274
	0835	–1.3	–40
	1537	12.3	375
	2140	3.1	94
2 W ◐	0307	8.9	271
	0932	–0.6	–18
	1627	12.0	366
	2236	2.6	79
3 Th	0415	8.8	268
	1029	0.3	9
	1714	11.6	354
	2331	2.1	64
4 F	0522	8.7	265
	1125	1.4	43
	1758	11.0	335
5 Sa	0023	1.6	49
	0628	8.8	268
	1221	2.4	73
	1838	10.3	314
6 Su	0110	1.2	37
	0731	9.0	274
	1315	3.4	104
	1913	9.6	293
7 M	0153	0.9	27
	0832	9.2	280
	1409	4.3	131
	1944	8.9	271
8 Tu	0233	0.7	21
	0929	9.5	290
	1502	5.0	152
	2011	8.3	253
9 W	0309	0.5	15
	1021	9.8	299
	1554	5.5	168
	2035	7.8	238
10 Th ○	0344	0.5	15
	1108	10.1	308
	1646	5.9	180
	2055	7.4	226
11 F	0418	0.4	12
	1151	10.3	314
	1735	6.1	186
	2117	7.2	219
12 Sa	0452	0.3	9
	1233	10.5	320
	1823	6.1	186
	2148	7.1	216
13 Su	0528	0.2	6
	1312	10.7	326
	1910	6.0	183
	2232	7.0	213
14 M	0607	0.2	6
	1351	10.8	329
	1954	5.8	177
	2325	7.0	213
15 Tu	0648	0.2	6
	1427	10.9	332
	2036	5.5	168

	Time	Height	
	h m	ft	cm
16 W	0026	7.0	213
	0733	0.3	9
	1502	10.9	332
	2116	4.9	149
17 Th	0136	7.1	216
	0819	0.6	18
	1534	10.9	332
	2156	4.2	128
18 F ◑	0250	7.2	219
	0908	1.1	34
	1605	10.9	332
	2236	3.2	98
19 Sa	0404	7.5	229
	1000	1.9	58
	1636	10.8	329
	2319	2.1	64
20 Su	0517	8.0	244
	1057	2.8	85
	1708	10.7	326
21 M	0004	0.9	27
	0628	8.7	265
	1159	3.7	113
	1743	10.6	323
22 Tu	0051	–0.3	–9
	0736	9.4	287
	1303	4.5	137
	1822	10.5	320
23 W	0140	–1.4	–43
	0842	10.2	311
	1407	5.0	152
	1907	10.3	314
24 Th ●	0231	–2.1	–64
	0946	10.9	332
	1512	5.4	165
	1958	10.1	308
25 F	0324	–2.5	–76
	1047	11.5	351
	1617	5.4	165
	2056	9.7	296
26 Sa	0419	–2.7	–82
	1144	11.9	363
	1721	5.2	158
	2202	9.3	283
27 Su	0516	–2.5	–76
	1238	12.2	372
	1823	4.8	146
	2314	8.9	271
28 M	0613	–2.1	–64
	1331	12.3	375
	1925	4.2	128
29 Tu	0027	8.6	262
	0710	–1.5	–46
	1420	12.3	375
	2024	3.5	107
30 W	0140	8.4	256
	0806	–0.6	–18
	1507	12.2	372
	2120	2.8	85

December

	Time	Height	
	h m	ft	cm
1 Th	0252	8.3	253
	0901	0.3	9
	1551	11.9	363
	2214	2.0	61
2 F ◐	0401	8.3	253
	0956	1.4	43
	1632	11.4	347
	2305	1.4	43
3 Sa	0509	8.5	259
	1051	2.6	79
	1711	10.8	329
	2352	0.8	24
4 Su	0616	8.7	265
	1148	3.7	113
	1747	10.1	308
5 M	0037	0.4	12
	0718	9.1	277
	1244	4.6	140
	1819	9.4	287
6 Tu	0118	0.1	3
	0816	9.4	287
	1340	5.4	165
	1847	8.8	268
7 W	0156	–0.1	–3
	0910	9.7	296
	1433	6.0	183
	1911	8.3	253
8 Th	0232	–0.1	–3
	1000	10.0	305
	1525	6.4	195
	1928	7.9	241
9 F	0306	–0.2	–6
	1045	10.2	311
	1614	6.6	201
	1944	7.7	235
10 Sa ○	0340	–0.2	–6
	1127	10.4	317
	1702	6.7	204
	2010	7.6	232
11 Su	0415	–0.3	–9
	1205	10.6	323
	1748	6.6	201
	2051	7.5	229
12 M	0453	–0.3	–9
	1241	10.8	329
	1834	6.3	192
	2148	7.3	223
13 Tu	0533	–0.3	–9
	1316	10.9	332
	1918	5.8	177
	2256	7.2	219
14 W	0617	–0.1	–3
	1349	11.1	338
	2002	5.1	155
15 Th	0014	7.1	216
	0704	0.3	9
	1421	11.1	338
	2045	4.1	125

	Time	Height	
	h m	ft	cm
16 F	0138	7.1	216
	0754	1.0	30
	1452	11.1	338
	2128	3.0	91
17 Sa ◑	0259	7.4	226
	0847	1.9	58
	1524	11.1	338
	2212	1.7	52
18 Su	0415	7.9	241
	0944	2.9	88
	1557	11.0	335
	2258	0.5	15
19 M	0528	8.5	259
	1045	3.9	119
	1633	10.9	332
	2346	–0.6	–18
20 Tu	0637	9.2	280
	1149	4.8	146
	1713	10.8	329
21 W	0036	–1.6	–49
	0741	9.9	302
	1255	5.4	165
	1757	10.6	323
22 Th	0126	–2.2	–67
	0842	10.6	323
	1358	5.7	174
	1846	10.3	314
23 F	0218	–2.6	–79
	0941	11.0	335
	1501	5.8	177
	1940	10.0	305
24 Sa ●	0311	–2.7	–82
	1037	11.4	347
	1603	5.7	174
	2040	9.5	290
25 Su	0404	–2.5	–76
	1129	11.7	357
	1704	5.3	162
	2147	9.1	277
26 M	0458	–2.1	–64
	1218	11.8	360
	1804	4.8	146
	2258	8.7	265
27 Tu	0551	–1.4	–43
	1305	11.9	363
	1903	4.1	125
28 W	0011	8.3	253
	0644	–0.6	–18
	1349	11.8	360
	2000	3.3	101
29 Th	0123	8.1	247
	0738	0.4	12
	1431	11.6	354
	2053	2.4	73
30 F	0234	8.1	247
	0831	1.4	43
	1510	11.3	344
	2142	1.7	52
31 Sa	0343	8.2	250
	0925	2.5	76
	1548	10.8	329
	2230	1.0	30

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.