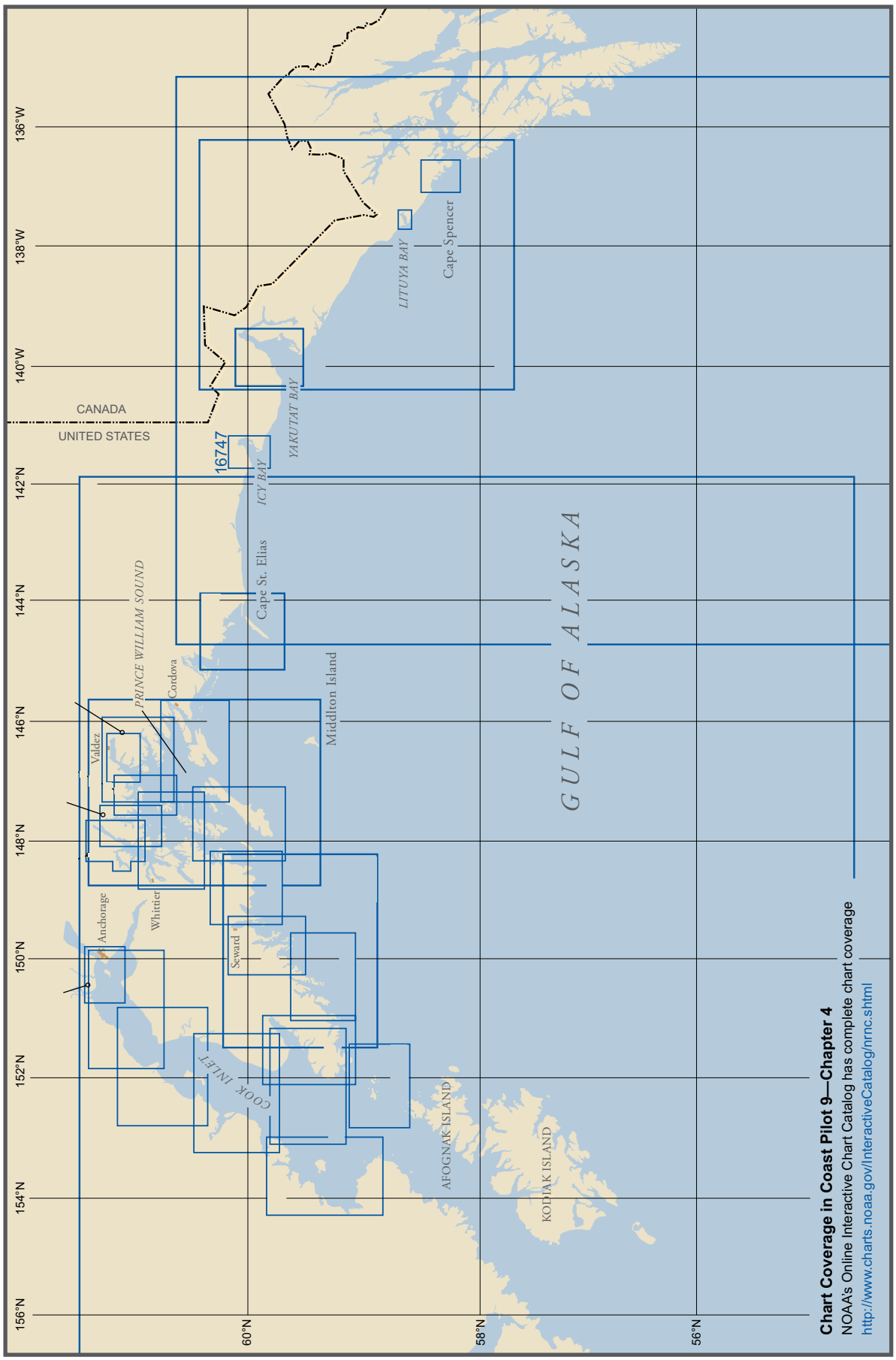
136°W
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CANADA
UNITED STATES
16747
ICY BAY
YAKUTAT BAY
LITUYA BAY
Cape Spencer
Cape St. Elias
Middlton Island
PRINCE WILLIAM SOUND
Cordova
Valdez
Whittier
Anchorage
Seward
COOK INLET
AFOGNAK ISLAND
KODIAK ISLAND
GULF OF ALASKA
Chart Coverage in Coast Pilot 9—Chapter 4
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml

Cape Spencer to Cook Inlet

(1) This chapter describes the south coast of the Alaska mainland from Cape Spencer to Cook Inlet and the many passages and tributary waters of Prince William Sound and Cook Inlet. Also described are the deepwater ports of Valdez, Whittier, Anchorage and Seward, and the petroleum terminals and facilities on the Kenai Peninsula, as well as the numerous fishing and logging ports in this area.

(2)

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(3) From Cape Spencer the coast extends northwest for about 130 miles to Yakutat Bay. The Fairweather Range begins 20 miles from Cape Spencer and extends to Alsek River. The mountains are snowcapped and have elevations of 10,000 to more than 15,000 feet. From Alsek River to Yakutat Bay the mountains are 4,000 to nearly 6,000 feet high. Along the coast are numerous glaciers with terminal moraines. The most conspicuous are La Perouse Glacier, Yakutat Glacier, 25 miles east of Yakutat Bay; and the great Malaspina Glacier, west of Yakutat Bay.

(4)

Weather, Cape Spencer to Cook Inlet

(5) Winds near the coast are only slightly less variable than over the open sea. As this coastline is irregular, with many islands, channels and inlets and is often steep, there are strong local effects to both wind speed and direction. In general, prevailing winds set parallel to the coastline, while speeds are increased by funneling effects or decreased by blocking.

(6) The gale frequencies of less than one percent at ports like Valdez, Anchorage and Cordova can be misleading since they are usually much more sheltered than their approaches. This is reflected in the frequencies of calms, which range from 12 to 40 percent during the winter season. Storms and williwaws are responsible for the gales that are most likely in early winter. Williwaws, which blow down from the mountains in winter, occur along most of the coast; they are particularly severe at Seward. Extreme sustained winds at these ports have reached 74 knots at Cape Spencer, 66 knots at Anchorage and 70 knots at Yakutat. Gusts of 60 knots or greater occur almost monthly during the winter season.

(7) In general from Cape Spencer to Yakutat, easterlies and southeasterlies are frequent, and from Yakutat to Cook Inlet, northeasterlies and easterlies prevail. At Yakutat, east winds blow 30 percent or more of the time from August through May. They also prevail at Cordova during this period. At Valdez, the sheltering effects of surrounding mountains funnel local winds into northeasterlies in winter and southwesterlies in summer. Over Controller Bay, summer winds range from the east through south and occasionally southwest. Seward's prevailing winds are from the north in winter and south in summer. In Cook Inlet, winds are most frequent from the north, with topography causing deflections to the northwest and northeast in some sections. At Anchorage, winter northerlies give way to southeasterlies and southerlies from May through September. At Kenai, northerlies prevail in winter, although gales are often out of the east in early winter and southeast later on; summer winds blow out of the south through southwest. At Homer, winter northeasterlies give way to summer southwesterlies.

(8) Precipitation along this coast is also greatly influenced by topography. The annual ranges are from 16 inches (406 mm) at Anchorage to 146 inches (3708 mm) at Yakutat; records from Latouche, which has since been abandoned, were 184 inches (4674 mm). Most of it falls during the winter season. September and October are often the rainiest months, when precipitation occurs on 20 to 26 days per month on the average, except at the well-sheltered ports. Snow is likely from October through April. At Valdez, an average of 67 inches (1702 mm) falls in January compared to 7 inches (178 mm) at Kenai. April through June is often the driest period.

(9) Poor visibilities are mainly caused by advection or sea fog in the summer and land fog or precipitation in winter. In general, sea fog affects exposed ports, while land fog is more of an influence at sheltered spots. However, visibilities are most likely to drop below one-half mile on winter mornings, even at exposed ports. Land fog can be very dense for short periods. At Cordova, for example, visibilities are most likely to be below one-half mile in January but below two miles in August. Yakutat suffers from poor visibilities in both midwinter and midsummer, when they drop below one-half mile on up to six days per month. In Cook Inlet, January is usually the foggiest month. This land fog will set in during the night and persist until about noon. Fog banks frequently hang over open waters after the harbors have been cleared. Occasionally in winter, if extremely cold air moves over the water, a steam fog or frost smoke may be experienced as relatively warm water evaporates into much colder air.

(10) Air temperatures are mild for these latitudes and reflect the influence of the land and the sea. The more continental ports have a wide daily and annual temperature spread compared to those exposed to the sea. A noticeable cooling begins in September, when daytime

highs average in the low to middle fifties °F (11 ° to 14 °C), with nighttime lows in the lower forties (5 ° to 6 °C). January is usually the coldest month and is the time when the difference between exposed and sheltered locations is most noticeable. In the sheltered Cook Inlet, average maximums are in the low twenties (-6 ° to -4 °C), while minimums drop to about 5 °F (-15 °C) or less. At Seward, daytime highs average 30 °F (-1.1 °C), with nighttime lows of 18 F (-7.8 °C). At continental locations like Kenai, Anchorage, and Valdez, temperatures fall below 0 °F (-17.8 °C) on an average of 10 to 15 days in January, compared to 3 days at Seward. Freezing temperatures, also more frequent at sheltered locations, are common from October through April. Extreme low temperatures range from a -24 °F (-31.1 °C) at Homer to a -48 °F (-44.4 °C) at Kenai. A noticeable warming begins in April, and the difference between the two types of locations becomes less noticeable. Daytime highs in the low to mid forties (5 ° to 8 °C), and nighttime lows in the upper twenties to low thirties (-2 ° to 1 °C), are common. July and August are usually the warmest months. Maximums average in the low to middle sixties (16 ° to 19 °C), while minimums are frequently in the mid- to upper forties (7 ° to 9 °C). It is often warmest at the more sheltered ports. Extreme highs reach the mid- to upper eighties (29 ° to 32 °C).

(11) Ice is most often a problem along this coast in Cook Inlet. The upper end is usually closed by ice to all but heavily built vessels, from December until late March. Elsewhere in the rivers and bays and in Prince William Sound, waters partially freeze after December 1, and some floating ice is seen through May. This ice usually does not interfere with navigation.

(12)

Cape Spencer

(13) **Cape Spencer** (58°12'45"N., 136°39'30"W.), 873 miles from Seattle by the outside route and 976 miles by the inside passage, is a conspicuous headland on the northwest side of the entrance to Cross Sound. The large shoal area that extends about 1.3 miles south from the cape has rocky islets, some of the inner ones wooded, and rocks, the outermost of which break. The cape rises rapidly to ridges about 1,800 feet high that are heavily wooded up to 1,500 feet.

(14) **Cape Spencer Light** (58°11'56"N., 136°38'26"W.), 105 feet (32 m) above the water, is shown from a white square tower on a rectangular concrete building on the outermost large rocky islet south of the cape.

(15) **Cross Sound**, between Cape Spencer and Cape Bingham, 8 miles southeast, is the northernmost passage to the inside waters of southeast Alaska. The sound is described in U.S. Coast Pilot 8, Pacific Coast, Alaska-Dixon Entrance to Cape Spencer.

(16) **Dicks Arm**, a narrow inlet less than 200 yards wide in places, extends in a north-northeast direction for about 2 miles along the southeast side of Cape Spencer. From the head of the arm, a gradually rising valley passes over a saddle to Taylor Bay. A narrow channel, with depths of 2½ to 12 fathoms leads east of **Zip Rock**, 20 feet high and bare, through the off-lying rocks and islets to the inlet. Depths of ¾ to 8 fathoms are found in the inlet to within 0.5 mile of the head, where it is shoal.

(17) **Polka Rock**, 20 feet high, is 2 miles northwest of Cape Spencer and at the outer edge of the foul ground, marked by kelp, which extends about 0.5 mile from shore in this general vicinity. Small craft approaching Graves Harbor from the southeast usually pass between Polka Rock and Graves Rocks.

(18) **Graves Rocks** are a group of islets about 3.5 miles northwest of Cape Spencer and about 1 mile from shore. Near the north end of the group is a wooded islet about 125 feet high. Rocks and kelp patches extend to the mainland and along the shore to Cape Spencer.

(19) **Libby Island**, 5.3 miles northwest of Cape Spencer and 0.7 mile from the mainland, is high and wooded. Bare rocks and rocks awash extend about 0.3 mile south of the island. **Libby Island Light** (58°16'24"N., 136°46'26"W.), 53 feet (16.2 m) above the water, is shown from a spindle with a red and white diamond-shaped daymark on an islet southeast of the island. **Horn Mountain** is a sharp, bare peak on the mainland north of Libby Island.

(20) **Graves Harbor** has an entrance about 1.2 miles wide between Graves Rocks and Libby Island Light and extends inland for about 3 miles. Depths in the harbor are 11 to 79 fathoms. The unnamed cove, which makes off to the south from the head of Graves Harbor, affords good landlocked anchorage in 7 to 15 fathoms and is easily entered. A daybeacon marks a shoal on the west side of the entrance to the cove.

(21) **Murphy Cove**, on the southeast side of Graves Harbor 1.7 miles above Graves Rocks, has depths of 11 fathoms or more in its outer part and affords snug anchorage for small vessels. **Murk Bay**, opposite Murphy Cove, is clear but too deep and open for good anchorage.

(22) **Torch Bay**, 7 miles northwest of Cape Spencer, extends inland more than 2 miles in a northern direction and varies in width from 1 mile at the entrance to 0.3 mile at the head of the western arm. Rocks, which uncover 7 feet and always marked by breakers, are 1 mile south of **Venisa Point**, on the west side of the entrance; vessels can pass on either side of these rocks when entering the bay. The bay has depths of 13 to 56 fathoms and is not a good anchorage for large vessels; small vessels can find protected anchorage in the northeast arm.

(23) **Sugarloaf Island**, 9 miles northwest of Cape Spencer, was named from its shape as seen from south, from which direction it appears barely detached from the islet-like point projecting from Hankinson Peninsula. The island is high and wooded. From west, it has a uniform north slope; the south slope has a step and is separated from the narrow south extremity by a deep V-shaped ravine. Bare rocks and some that cover fringe the shore from south around to west.

(24) **Sugarloaf Island Shoal**, about 0.5 mile long, is about 1 mile south of the southern end of Sugarloaf

Island. A rock awash and submerged rocks on the shoal usually break. A lighted whistle buoy is off the west end of the shoal.

(25) During moderate eastern gales temporary anchorage is possible in 10 to 18 fathoms, rocky bottom, in the cove northeast of Sugarloaf Island. The cove is 0.3 mile wide and open to the northwest.

(26)

Local magnetic disturbance

(27) Differences of as much as 3¼° from the normal variation, have been observed at the south end of Sugarloaf Island.

(28) **Astrolabe Point**, 11 miles northwest of Cape Spencer, is rugged and has bare cliffs on its west side; the south face of the point is moderately wooded halfway up. **Astrolabe Rocks**, some bare, submerged or awash, are 0.3 mile south of the point.

(29) **Dixon Harbor**, with its entrance between Sugarloaf Island and Astrolabe Point, has depths of 60 to 20 fathoms over an average width of 0.8 mile for 2 miles north to Thistle Cove, the northwest arm. Depths of 13 to 18 feet are just west of the middle of the entrance. A glacier above the head of the harbor is visible from the entrance.

(30) **Thistle Cove** is 1 mile long in a northern direction. At the point on the northeastern side of the entrance is a grass-covered rock, 20 feet high. In 1998, it was reported that a shoal extended across the entrance to the cove. As result, Dixon Harbor does not offer a secure anchor in southerly or westerly weather.

(31) **Palma Bay** is between Astrolabe Point and Icy Point, 6 miles to the north-northwest. This large body of water, sometimes called **Icy Bay**, has depths of 20 to 60 fathoms; large vessels have anchored close inshore in 15 to 20 fathoms.

(32) **Boussole Head**, in the eastern part of Palma Bay, is a prominent wooded 650-foot-high peninsula that extends about 1 mile into the bay. The outer end of the head is a natural arch that rises 60 feet above the water and is quite prominent from the south. **Alder Rock**, 0.3 mile south of Boussole Head, uncovers 4 feet.

(33) **Astrolabe Bay**, southeast of Boussole Head, and **Boussole Bay**, on the northwest side of the head, are open to the south but afford protection to small vessels in northerly or easterly weather. Anchorage is possible in 6 to 8 fathoms, sand bottom, near the head of each bay; the best is in Boussole Bay.

(34) Another anchorage, which affords some protection for small craft in westerly weather, is off the mouth of **Kaknau Creek,** a large stream that empties into Palma Bay on the northeast side of Icy Point; recommended anchorage is close inshore in 6 to 10 fathoms, sand bottom.

(35) **Icy Point**, on the west side of Palma Bay and 17 miles northwest of Cape Spencer, is low and wooded; from south La Perouse Glacier can be seen over the point. Many rocks fringe the point but deep water is only 0.3 mile offshore.

(36)

Pilotage, Cape Spencer

(37) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska.

(38) The pilot association which serves Cape Spencer is

(39) Southeastern Alaska Pilots Association, P.O. Box 6100, 1621 Tongass Ave., Suite 300, Ketchikan, AK 99901; telephone, 907-225-9696, fax 907-247-9696; E-mail pilots@seapa.com; cable address, SEAPILOTS; radio call, WKD-53. Their pilot office monitors VHF-FM channel 12.

(40) The Southeastern Alaska Pilots Association pilot boat is stationed at Cape Spencer pilot station. This boat CORONA BOREALIS is 36 feet long with a white hull and cabin with the word "PILOT" on the sides. CORONA BOREALIS displays the international day and night signals. Other vessels used for pilot transportation may or may not display international day and night signals. When the pilot is on the pilot boat at or near the pickup point VHF-FM channels 12, 13 and 16 are monitored and worked; the pilot station monitors channels 13 and 16 and works channels 12 and 77.

(41) Pilot services should be arranged in advance through ships' agents, or otherwise, in sufficient time to enable the pilot to travel to the area where the service is required.

(42) The established pilot boarding station or pickup point and other information for Cape Spencer is in chapter 3 of this pilot volume and also in chapter 3 of Coast Pilot 8 (Alaska: Dixon Entrance to Cape Spencer). Boarding instructions such as vessel's speed, course, ladder height and preferred boarding side will be given by the pilot prior to boarding. This information depends on weather condition and type of ship; also pilotage services are affected by weather, tides and currents and daylight hours.

(43)

La Perouse Glacier

(44) From Icy Point to La Perouse Glacier, a distance of about 8 miles, the coast is low and wooded, with rolling hills that gradually increase in height to the bare mountain peaks. Rocks extend along the coast about halfway from the point to the glacier; the rest of the way is mostly smooth sand beach.

(45) **La Perouse Glacier**, about 24 miles north of Cape Spencer, is an outstanding landmark along this coast because the mountains are often covered by clouds.

(46) Between La Perouse Glacier and Lituya Bay, 15 miles northwest the coast is low and densely wooded. About 2 miles inland are hills that rise in a succession of terraces to the snowcapped peaks of the **Fairweather Range**. Most of the shore is sandy, with occasional boulders; huge boulders cover the last 1.5 miles to Lituya Bay.

(47)

Lituya Bay

(48) **Lituya Bay**, 39 miles northwest of Cape Spencer, affords protected anchorage in all weather, but the entrance is dangerous and should never be attempted except at slack water because of the strong current. The bay extends about 6 miles in a northeast direction and has widths of 1 to 2 miles. The shoaler area along the shore around the bay is obstructed by tree trunks. Anchorage for small boats close to the shore is not recommended because of the possibility of fouling anchors in the debris of trees and roots.

(49) In July 1958, a giant wave, caused by an earthquake-induced avalanche, denuded the shores of Lituya Bay of trees to a height of 1,720 feet. Giant waves are a recurring phenomenon in the bay, and other catastrophic waves were observed in 1853, 1874 and 1936. Steep shattered cliffs at the head of the bay present a continuing hazard of avalanches; destructive waves, caused by rock falls, can occur at any time.

(50) Glacial ouburst flood events have resulted in significant infilling to the head of Lituya bay. Both **Gilbert Inlet,** on the northwest, with **Lituya Glacier** at its head and **Crillon Inlet**, on the southeast, with **North Crillon Glacier** at its head have been completely filled in with sediment. Because of rapid shoaling, depths in these inlets may differ from the charted depths. **Cascade Glacier**, which discharges into the head of the bay between the two arms, can be seen far at sea. Depths in the bay are as much as 78 fathoms. Vessels can obtain water from streams near the head.

(51) **Harbor Point**, on the east side of the entrance to Lituya Bay, can easily be identified from offshore by **The Paps**, two conical, wooded hills about 1 mile to the northeast; the northwest hill is the higher and rises to 540 feet. Large boulders, 20 to 35 feet high, are strewn along the beach. **Cormorant Rock**, 16 feet high, is the largest of three bare rocks off the south side of Harbor Point.

(52) **La Chaussee Spit**, on the northwest side of the entrance to Lituya Bay, is 100 to 225 yards wide and about 0.7 mile long. The spit is up to 12 feet high; the outer side of the spit is covered with large boulders.

(53) The entrance to Lituya Bay between Harbor Point and La Chaussee Spit is about 350 yards wide but is mostly foul. The channel has a controlling depth of about 5 fathoms but is only about 50 yards wide; the water shoals abruptly on either side and there are many rocks. The entrance is marked by a **007.8°**lighted range.

(54) **Anchorage Cove** behind La Chaussee Spit, has depths of 3 to 5 fathoms but is obstructed by numerous tree trunks and rocks awash and is not suitable for anchorage. On a flood tide with southerly weather, the cove has considerable swell.

(55) **Cenotaph Island**, in midbay and about 3 miles from the entrance, is densely wooded and has several hills, the highest rising about 320 feet. The north and west sides of the island slope gently, but the south side is an abrupt, high cliff with depths of 75 fathoms only 100 yards away. The island is named for a wooden monument, or cenotaph, which was erected by La Perouse in 1786 in memory of officers and men who were lost in the entrance to the bay. No trace of the monument or its site have been found in recent years.

(56)

Currents

(57) The current velocity at the entrance is 5.1 knots on the flood and 4.1 knots on the ebb. Ebb currents, running against a southwest swell, cause bad topping seas or combers which are dangerous to small craft. Small powered vessels in the bay should stay away from the entrance on the ebb to avoid being swept through. The ebb current follows a narrow path for several miles out to sea and can be seen for some distance. On the flood, the entrance is smooth and local fishing boats often negotiate it with a calm sea but are quickly swept through the channel by the powerful current. Strangers should not attempt to enter except at slack water.

(58)

Ice

(59) The bay has never been known to freeze over but icebergs could be present. With northeast breezes these icebergs often reach the entrance to the bay before melting. Ice is usually heaviest during October. The many streams flowing from the glaciers at the head of the bay give the water a murky discolored appearance.

(60)

Cape Fairweather to Yakutat Glacier

(61) From Lituya Bay northwest to Yakutat Bay, the shore is mostly gently curving sand beaches but boulders are found in the vicinity of Cape Fairweather and at other places. Prevailing currents set northwest about parallel to the shore, but it has been observed that winds have a great influence on directions and strengths.

(62) **Cape Fairweather**, 54 miles northwest of Cape Spencer, is an evenly rounded point sloping gently to the sea and abruptly back to the mountains. The summit of the cape is bare of vegetation but is covered with large piles of glacier drift, some of a bright iron-rust color. **Mount Fairweather**, 15,320 feet high, is 15 miles inland from the cape and is on the Alaska-Canada boundary.

(63) Protection from southeasterly weather can be had north of Cape Fairweather, which appreciably breaks both wind and swell. Just north is a high rocky slide, with a cataract several hundred feet high, which is prominent from offshore.

(64) **Alsek River**, about 82 miles northwest of Cape Spencer, empties into the northeast part of **Dry Bay**. About 8 miles back of the coast is **Alsek Glacier**. Dry Bay is filled with bars and small islands between which are constantly changing channels. The entrance to the bay, about 400 yards wide with depths of about 6 feet, has been used to some extent by small craft. The tidal current

has a velocity of about 2.5 knots on the ebb; during heavy weather the sea breaks fully 2 miles offshore.

(65) From Dry Bay to Yakutat Bay, the mountains are 5 to 15 miles from the coast, and between is a low wooded plain cut by numerous streams. The principal rivers between Dry Bay and Yakutat Bay have shifting bars at their entrances and lagoons or tidal basins inside; they can be used only by small boats or launches at high water and with a smooth sea. The mountains back of the coastal plain carry numerous glaciers; **Yakutat Glacier**, about 100 miles northwest of Cape Spencer and 30 miles east of Yakutat Bay, is 3 miles wide and very prominent.

(66) Mariners are advised that in glacially fed areas such as Yakutat Bay, a layer boundary with a steep thermal/salinity gradient and/or suspended sediments in the water column can produce erroneous bottom traces on echo sounders. If this anomaly is suspected, a handheld lead line should be used to penetrate the layer for an accurate reading.

(67)

Yakutat Bay to Nunatak Fiord

(68) **Yakutat Bay**, 130 miles northwest of Cape Spencer, has a 16.5-mile-wide entrance between Ocean Cape on the southeast and Point Manby on the northwest; the bay is 7 miles wide at **Blizhni Point**,15 miles above the entrance, and 2 miles wide a few miles farther up in Disenchantment Bay, the northern extension of the bay. Yakutat Bay, the best anchorage between Cape Spencer and Prince William Sound for light and medium-draft vessels, is mostly clear of islands and dangerous shoals. Depths in the bay range from 2 fathoms, marked by heavy growths of kelp west of Otmeloi and Krutoi Islands, to 134 fathoms off **Point Latouche**, 23 miles above the entrance. Two to three miles outside the line between Ocean Cape and Point Manby is a submarine ridge with depths of 3 to 17 fathoms. The water deepens rapidly to more than 30 fathoms on either side except near Point Manby, and the ridge curves northeast near Ocean Cape to join shallower water. During heavy weather, it has been observed that breakers or pronounced increased height and steepness of swell occurs across the entire entrance to Yakutat Bay and continues north to Disenchantment Bay; at such times entrance is dangerous.

(69) Complex currents are known to exist in Yakutat Bay. The current to the east of **Knight Island** flows south on a flood tide and north on an ebb tide.

(70) **Ocean Cape**, on the southeast side of the entrance to Yakutat Bay, is low and well wooded. Three bare light-colored bluffs 50 to 70 feet high, the westernmost point of the cape, are unmistakable landmarks. **Ocean Cape Light** (59°32'08"N., 139°51'20"W.), 130 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on one of the bluffs. A lighted whistle buoy, 3 miles west of Ocean Cape Light, marks the entrance to Yakutat Bay. Heavy breakers have been observed more than 0.5 mile offshore from the cape; vessels unfamiliar with the area should not attempt to pass between the lighted whistle buoy and Ocean Cape.

(71) **Point Manby**, on the northwest side of the entrance to Yakutat Bay, is low and wooded. There is usually heavy surf and strong currents along the shore from this point northeast to Blizhni Point, making it dangerous for boats to land, and causing migration of the shoreline and sandbars close to shore. Landings at stream entrances should only be made at high water and with local knowledge.

(72) **Point Carrew** is on the east side of Yakutat Bay 1.5 miles northeast of Ocean Cape. A lighted whistle buoy, about 2 miles north of Point Carrew, marks the north end of a bank of shoaler water extending from the point, and the turn into Monti Bay. A rocky point, over which heavy surf breaks, extends north from Point Carrew. The west shore of Phipps Peninsula is foul with large boulders. The north and northeast shore of Phipps Peninsula is subject to a periodic buildup of sand often producing sandbars offshore.

(73) **Point Munoz**, the westernmost extremity of **Khantaak Island**, is 3.5 miles above Ocean Cape. Dangerous rocks and heavy kelp growth, over which heavy surf breaks, extend southwest to south from Point Munoz making the area foul for vessels. The island is about 5 miles long in a northeast-southwest direction and the greatest width is between Point Munoz and **Point Turner**, 2 miles to the southeast. Khantaak Island is low and heavily wooded except at Point Turner, which is a tongue of sand covered with grass and bushes. **Khantaak Island Light** (59°33'29"N., 139°47'04"W.), 28 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the south end of the island near Point Turner. The light is obscured from 105° to 330°.

(74) **Monti Bay**, entered between Point Carrew and Point Munoz, extends about 3 miles southeast to Yakutat, then turns north to Yakutat Roads anchorage. Depths in Monti Bay are 11 to 40 fathoms. The south side of the bay is clear, but the north side in the vicinity of Khantaak Island is foul. Heavy breakers are reported to exist at the entrance to Monti Bay. In 1999, it was reported that the shoreline around Monti Bay was spreading seaward with differences in excess of 10 meters from the charted shoreline. Caution is advised near the shoreline throughout Monti Bay and Khantaak Island.

(75) **The Ankau**, on the south side of Monti Bay 1 mile southeast of Point Carrew, is the outlet of an intricate system of shallow lagoons within the peninsula between the bay and the ocean. Navigating the area should not be attempted without local knowledge. Inside The Ankau, tides lag those predicted for Yakutat by as much as 2 hours.

(76) **Tzuse Shoal**, about midway between Point Turner and the Yakutat mainland, is a bare shoal about 300 yards in diameter at low water. A rock, 4 feet high, is near the south side of the shoal. Two rocks, awash at lowest tide, are about 0.2 mile north of the shoal. A lighted

buoy, (59°33'26"N., 139°45'51"W.), is about 100 yards southeast of the shoal.

(77) **Yakutat**, a town at the east end of Monti Bay, has a small hospital, school, and two general stores. There are several lodging options available in the town.

(78) Deep-draft vessels should anchor towards the deeper, central part of the bay in 25 fathoms.

(79)

Weather, Yakutat Vicinity

(80) The Yakutat area is surrounded on three sides by the waters of the Gulf of Alaska and Yakutat Bay; consequently, the climate is maritime in character. Both daily and seasonal average temperatures are held within fairly well-confined limits. Differences between average maximum and minimum readings range from a little over 12 °F (-11.1 °C) in November and December to around 15 °F (-9.4 °C) in March and April. Normal monthly temperatures range from 25 °F (-3.9 °C) in January to around 54 °F (12.2 °C) in July and August. Although Yakutat has experienced a record low of -24 °F (-31.1°C, December 1964), readings approaching this figure are extremely rare. Yakutat averages about 20 days each year with temperatures below 0°F (-17.8 °C). The higher mountain areas to the north and northeast of Yakutat, with extensive glaciation, provide down slope cold air drainage which results in wide variations of temperature within short distances. This cold air drainage produces much stronger winds than in the open bay, which may be encountered north of Point Latoche when approaching Disenchantment Bay. These localized winds have been observed to dissipate north of Hanke Island. Maximum temperatures above the 80°F (26.7 °C) mark have occurred in June, July, and August with the all-time maximum of 87°F (30.6 °C) occurring in June 1995.

(81) Although the area in the immediate vicinity of the station is relatively flat, rather rough, hilly terrain exists within short distances. At distances of 40 to 75 miles (74 to 139 km) to the north and northeast, peaks of the St. Elias Range rise to heights of from 14,000 to almost 20,000 feet (4,267 to almost 6,096 m). The upslope terrain, combined with the exposure of the station to moisture-laden air from the Gulf, tends to provide Yakutat with abundant rainfall. The annual precipitation of 146 inches (3708 mm) is one of the greatest in the state, and annual amounts have always been in excess of 85 inches (2159 mm). Extremes include 1987 when 250.24 inches (6356.1 mm) of precipitation fell and 1950 when 85.99 inches (2184.2 mm) of precipitation fell. Thunderstorms seldom occur, averaging only about one per year. June has the lowest average precipitation of any month with around seven inches (178 mm). October, with an average of greater than 21 inches (533 mm), has the heaviest monthly rainfall. In spite of abundant rainfall, runoff from heavy rain seldom creates a problem of any consequence. This is particularly true in the vicinity of the station where runoff not easily reaching drainage ditches is quite readily absorbed by the porous gravel which is exposed as a surface layer over much of the area. The heavy precipitation produces copious growth of various types of vegetation in the surrounding woods, including several types of edible berries. Heavy stands of timber in the area are harvested for lumber and pulp. Salmon fishing is a main source of income for natives in the area.

(82) Snowfall has occurred in all months of the year except June, July and August. The heaviest fall in any 24-hour period was experienced in March of 1960 when 32 inches (813 mm) fell.

(83) Cloudiness is abundant with the annual average sunrise to sunset exceeding eight-tenths sky cover. During the spring, fall and winter months, the Yakutat area is subjected to numerous storms, usually accompanied by high winds. During these seasons, the low pressure systems that develop in the Aleutians seem to follow a path lying just south of this area, resulting in persistent cloudy weather and extensive precipitation in the vicinity. During the summer, however, the weather occasionally remains cloudless and delightful for days at a time. The St. Elias Mountain Range, which borders the area on the northeast and contains numerous glaciers, exerts a pronounced effect upon the local weather, particularly when a steep pressure gradient develops with low pressure in the Gulf to the southwest of Yakutat. Under these conditions cold winds move down from the glacier slopes and skies are generally cloudless.

(84)

Ice

(85) The ice in Yakutat Bay comes from the glaciers at the head of Disenchantment Bay and Russell Fiords. The volume of ice present in Disenchantment Bay varies according to glacial activity and seasonal weather patterns. Ice flows can be thick across the entirety of Disenchantment Bay to as far south as Point Latouche, and often bank along the west sides of Disenchantment and Yakutat Bays as far south as Blizhni Point. Scattered bergs usually are found in the bay proper, and occasional drifts find their way as far south as Ocean Cape and Point Manby. Ice flows have reportedly been encountered west of Knight Island on the east side of the bay.

(86)

Pilotage, Yakutat Bay

(87) Pilotage except for certain exempted vessels is compulsory for all vessels navigating the waters of the State of Alaska.

(88) The Southeastern Alaska Pilots Association serves Yakutat Bay and can be reached at 907–225–9696 (phone), 907–247–9696 (fax) or *pilots@seapa.com* (email). The cable address is SEAPILOTS and radio call sign is WKD-53. The pilot office monitors VHF-FM channel 12. The associations address is P.O. Box 6100, 1621 Tongass Avenue, Suite 300, Ketchikan, AK 99901.

(89) The Southeastern Alaska Pilots Association pilot boat is stationed at Cape Spencer pilot station. This boat CORONA BOREALIS is 36 feet long with a white hull and cabin with the word “PILOT” on the sides. CORONA

BOREALIS displays the international day and night signals. Other vessels used for pilot transportation may or may not display international day and night signals. When the pilot is on the pilot boat at or near the pickup point VHF-FM channels 12, 13 and 16 are monitored and worked; the pilot station monitors channels 13 and 16 and works channels 12 and 77.

(90) Pilot services should be arranged in advance through ships' agents, or otherwise, in sufficient time to enable the pilot to travel to the area where the service is required.

(91) The established pilot boarding station or pickup point and other information for Yakutat Bay is in chapter 3 of this pilot volume and also in chapter 3 of Coast Pilot 8 (Alaska: Dixon Entrance to Cape Spencer). Boarding instructions such as vessel's speed, course, ladder height and preferred boarding side will be given by the pilot prior to boarding. This information depends on weather condition and type of ship; also pilotage services are affected by weather, tides and currents and daylight hours.

(92) A small-craft and seaplane float owned by the state and operated by the City of Yakutat is off Yakutat Roads in **Shipyard Cove**, (59°33'49"N., 139°44'27"W.). A 48-foot grid is on the west side of the approach. A small-craft float 230 yards east can repair small vessels. Limited repairs to small-craft are available at the cannery, when in operation, and at a garage in town.

(93) The **harbormaster** assigns berths; he can be contacted on VHF-FM channel 16 and by telephone (907-784-3323 or 907-784-3270).

(94)

Communications

(95) Barge service is available, stops being made only as freight traffic demands. Daily scheduled air service to Anchorage, Cordova and Juneau is available from the Yakutat airfield, about 3 miles southeast of the town; charter air service is also available.

(96) **Yakutat Roads**, extending north-northeast from Monti Bay, has a clear width of a quarter mile east of Tzuse Shoal, a length of about 1.5 miles, and depths of 12 to 26 fathoms, mud bottom, and is surrounded by an extensive foul area at its northeast end. A light marks the north limit of shoals on the east side of the roads. The best anchorage for large vessels is in the middle of Yakutat Roads in 15 to 23 fathoms.

(97) **Port Mulgrave**, on the west side of Yakutat Roads behind Point Turner, Khantaak Island, is 1 mile long and about 200 yards wide; on the side opposite Point Turner is **Village Shoal**, parts of which show at high water. The entrance to Port Mulgrave has a depth of 1½ feet; the arm is useable only by small boats.

(98) **Rurik Harbor**, the next arm indenting the inner side of Khantaak Island northeast of Port Mulgrave, has depths of 9 to 14 fathoms in its entrance. Small vessels can anchor in the entrance.

(99) **Sea Otter Bay**, northeast of Rurik Harbor, is 1.2 miles long and has depths of 12 to 36 fathoms. **Prince Shoal**, between Rurik Harbor and Sea Otter Bay, extends about 0.5 mile southeast from the Khantaak Island shore. The shoal is foul with rocks and has an extensive area that bares.

(100) **Broken Oar Cove**, 2.5 miles northeast of Yakutat, is the site of a logging operation. **Sawmill Cove**, on the south side of Broken Oar Cove, is used as a log dump and has a log boom with a submerged cable extending across the entrance.

(101) **Redfield Cove**, 3 miles northeast of Broken Oar Cove, affords excellent protected anchorage for light and medium draft vessels in 5 to 22 fathoms. The south side is clear of obstructions or shoals. A shoal extends about 0.3 mile south-southwest from the northern entrance point. The safest passage to the bay is from north between Knight Island and **Krutoi Island**. Unlighted buoys mark extents of two shoals northwest of Krutoi Island.

(102) From the southeast side of **Knight Island**, 6.5 miles north of Redfield Cove, a 500-yard-wide ridge extends southeast to Tla-xagh Island. The ridge provides a good anchorage in 14 fathoms for moderate-draft vessels. About 0.5 mile east of Tla-xagh Island is the entrance to **Eleanor Cove**.**Chicago Harbor**, just northeast of Eleanor Cove, is a well-protected steep-sided cove for small craft.

(103) North of Point Latouche, the bay bends to the northeast and joins **Disenchantment Bay**. Depths of 105 to 128 fathoms are found throughout Disenchantment Bay, except in the vicinity of Haenke Island, 4.5 miles northeast of Point Latouche, Osier Island, 2.5 miles northeast of Haenke Island in the entrance to Russell Fiord and a small islet 1.3 miles northeast of Haenke Island. A partially protected anchorage in 32 fathoms can be found behind **Haenke Island.**

(104) **Turner Glacier** and **Hubbard Glacier** actively discharge icebergs into the bay. The currents tend to push the ice debris in a west, southwest pattern out of the bay, but at times heavy ice concentrations spread across the bay. The thickest concentration of icebergs shift with the tide, extending south past Point Latoche during ebb tides. Turner Glacier flows into the west side of the bay, but was observed in the fall of 2017 to have almost completely receded onto land. There is a large exposed moraine bar at the terminus of Turner Glacier. Glacial meltwater streams were actively flowing from the moraine bar, discharging turbid meltwater into the area. Hubbard Glacier, the largest tidal glacier in Alaska, discharges innumerable icebergs into the head of the bay along a 6-mile-long ice cliff. Large waves caused by calving ice from the glacier make landing on the shores of the north part of the bay hazardous.

(105) **Osier Island** is 2.5 miles northeast of Haenke Island and located on the north end of the pass between Hubbard Glacier and the mainland. In 1999, it was reported that most of Osier Island was underneath the glacier with only a small portion of the southeast section of the island visible above water. Hubbard Glacier has advanced in recent years, at times closing the entrance to

Russell Fiord. Uncharted reefs, tidal currents, icebergs and ice calving from the glacier and resulting waves make navigation between Disenchantment Bay and Russell Fiord extremely hazardous at all times.

(106) Mariners should contact the U.S. Forest Service Public Affairs Office, Chatham Area, Region 10, 204 Siginaka Way, Sitka, AK 99835, for the latest conditions concerning Disenchantment Bay, Hubbard Glacier and Russell Fiord; telephone, 907–747–6671.

(107) **Russell Fiord** extends 27 miles southeast of Osier Island and has depths well over 100 fathoms except in the vicinity of Hubbard Glacier. A branch, **Nunatak Fiord**, extends east for 12 miles from Russell Fiord to **East Nunatak Glacier** which terminates on shoals that bare at low water.

(108) Tide rips and very strong currents exist at the entrance to Russell Fiord. Tidal currents have been observed to lag up to two hours after slack.

(109)

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(110) Between Yakutat Bay and Cape Suckling, the coast is formed by river and glacier deposit and is relatively regular. Coastal currents are discussed in chapter 3.

(111) A short way inland, the St. Elias Range rises to 18,008 feet at **Mount St. Elias,** on the Alaska-Canada boundary, and culminates in the 19,850-foot **Mount Logan** in Canada. These towering snow-clad peaks, only 25 miles apart, are surpassed in all Canada and the United States only by central Alaska's 20,320-foot Mount McKinley.

(112) Stretching from Yakutat Bay to the Bering River in one continuous icefield are the tremendous **Malaspina Glacier and Bering Glacier**. Malaspina Glacier, which covers most of the coastal plain between Yakutat Bay and Icy Bay, reaches the sea at **Sitkagi Bluffs** which are formed of forest and debris covered ice. From the sea the glacier appears as a vast, almost featureless white plain, gently sloping toward the coast from the base of the towering peaks of the St. Elias Mountains.

(113)

Icy Bay

(114) **Icy Bay** is a glacially carved fiord that is 5 miles wide at the mouth and extends inland more than 22 miles. Actively calving Guyot, Yahtse and Tyndall Glaciers are at the north end of the bay.

(115) **Caution:** Mariners should use extreme caution when navigating Icy Bay. Icebergs and floe ice are hazards and their movement can cause changes to both shoreline and water depths.

(116) The bay is entered between **Point Riou Spit**, on the southeast, and **Claybluff Point**, on the northwest Both points are composed of soft shale and long sandy beaches.

(117) A bar extends across the entrance of Icy Bay, roughly in the shape of a crescent, with depths in midchannel of 5½ to 9 fathoms. Breakers extend out from each entrance point along the crest of the bar, varying from the size of the seas, but have never been observed to encroach on the channel.

(118) It is reported that most points on the east side of the bay give adequate radar returns from all positions in the bay.

(119) **Riou Bay** is behind Point Riou Spit. **Moraine Reef** lies in the entrance to Riou Bay. In surveys conducted by the NOAA Ship RAINIER in 2000, enough sand had accumulated around Moraine Reef to connect it to Point Riou spit. Most of Moraine Reef covers at high water. Numerous rocks awash and deadheads are in the entrance and throughout the bay.

(120) **Caution:** Point Riou Spit has been observed to migrate rapidly and in 2000 had migrated 0.5 mile north and west from Tsimpshian Pt. The rapidly changing shoreline of Point Riou Spit may make it unsuitable for radar navigation. Mariners are advised to give the spit a wide berth due to the rapidly changing nature of the shoals.

(121) A dangerous shoal extends about 0.5 mile north from the east sandspit to a 1¾-fathom spot in 59°55'43"N., 141°25'54"W. Depths to the north of the shoal are greater than 5 fathoms.

(122) **Moraine Island**, actually a peninsula, is on the east side of Riou Bay. A bar, with a least depth of ¾-fathom, northwest of Moraine Island, extends from 59°55'57"N., 141°23'37"W. to 59°56'01"N., 141°23'53"W. A shallow but navigable channel exists between the ¾-fathom bar and 1¼-fathom-spot about 0.5 mile to the east. A temporary logging camp with an airstrip exists on Moraine Island during the summer months. Small tugs and log barges use this passage en route to the camp.

(123) **Gull Island**, a natural bird sanctuary, is 2.5 miles northeast of Moraine Island. A 40-foot-high conical hill on the northeast end of the island is conspicuous. A shoal extends 1 mile west from the southwest tip of the island. Between the island and the southeast shore of Icy Bay, the water is foul with rocks and a moraine reef.

(124) The Icy Bay Lumber Company has a logging camp on the northwest side of the bay about 2 miles west of Claybluff Point. Caretakers are in attendance at the camp during the nonoperational winter months. An airstrip is also located at the camp.

(125) The Icy Bay Lumber Company also operates a log dump on the northwest side of the bay at **Carson Creek**, about 2.5 miles northeast of Claybluff Point. Heavy swells, which frequently break along this coast, can make landings difficult. A road terminates at Carson Creek.

(126)

Pilotage, Icy Bay

(127) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. (See **Pilotage, General** (indexed), chapter 3, for pilot pickup station and other details.)

(128) The pilot boat can be contacted by calling "ICY BAY PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(129)

Anchorages

(130) Possibly the best anchorage in Icy Bay is at the entrance to the bight east of Moraine Island. This harbor makes an excellent anchorage in most weather, well protected from the wind. The bottom is soft clay, which may yield in very high winds. In 2000, the controlling depth in the northwest part of the harbor was 4 fathoms with a 1¼-fathom spot at the entrance in 59°56'00"N., 141°22'45"W. Do not anchor between Moraine Island and Gull Island to the northeast, as bergs drift through this area, sometimes with considerable velocity. Off the entrance to Riou Bay, northeast of Moraine Reef, is an area that has a good holding bottom but is often exposed to swells from the Gulf of Alaska. Riou Bay has many foul areas along the east shore which, combined with the presence of Moraine Reef, makes the bay an undesirable anchorage.

(131) A 5½-fathom spot is 3.5 miles southwest of Kichyatt Point, 0.9 mile offshore.

(132)

Currents

(133) Currents in the bay are weak. The combined effect of the ebb current and the discharge from the glacial streams is most pronounced in the northwest part of the bay. In the entrance to Guyot Bay, the ebb current attains a velocity of 2 knots or more. The tidal current at the entrance to Icy Bay floods northeast and ebbs southwest, with a velocity of about 0.5 knot.

(134)

Weather, Icy Bay and vicinity

(135) The prevailing winds are east and northeast. A breeze off the glacier usually brings rain. Winds from other quarters are seldom observed, although offshore winds are known to blow at times. Breakers on the outside coast are generally heavy and plainly audible on either side in entering. Within the bay, west of **Claybluff Point**, breakers are frequently heavy enough to make landing difficult in small boats. Surf was observed along the east shore of the bay and along Gull Island but the shore was still often suitable for small craft landings.

(136) The bay trends generally northeast for 10 miles with depths of generally less than 50 fathoms below Kichyatt Point. north of prominent **Kichyatt Point**, on the west side of the bay, the shores are barren having been recently exposed by glacier retreat; the bay trends northwest for 15 miles to **Guyot Glacier** and **Yahtse Glacier** which discharge large amounts of icebergs. The west shore is high; 7 miles northwest of Kichyatt Point, **Tsaa Fiord** extends west 3 miles heading in three calving glaciers. The east shore of the bay is low and composed of glacial moraine and outwash from Malaspina Glacier. Two miles north-northeast of Kichyatt Point is low **Kageet Point**; north of the point **Taan Fiord** extends 12 miles northeast to **Tyndall Glacier**. Most of the waters of these fiords are uncharted and mariners are urged to use caution.

(137)

Ice

(138) Ice in the bay originates from the actively calving glaciers at the head of the bay. The part of the bay north of 60°00'N. is usually filled with ice. In the south part of the bay, the ice usually forms long tongues of loosely packed ice. Icy Bay is usually ice-free from the east shore, west to the centerline of the bay. The size of the ice ranges from a few widely spaced bergs of over 200 feet in length and 50 feet in height to many small bits 2 feet and smaller. Riou Bay remains relatively free of ice during the summer. During and shortly after periods of strong winds, the upper end of the bay is clear of ice sometimes to the face of the glaciers.

(139) Caution should be exercised when approaching or beaching a boat near the face of the glaciers. Boats may be swamped by the large waves generated by the falling of large chunks of ice into the water. Caution should also be exercised in the vicinity of the larger bergs that may roll over or break apart without warning.

(140) Freshwater may be obtained from streams along the west side of the bay in the vicinity of Kichyatt Point. Also, small icebergs can be taken aboard for potable water.

(141)

Cape Yukataga

(142) From Icy Bay to Cape Yakataga, the coast is backed by a continuous ridge of stratified mountains 3,000 to 6,000 feet high. Numerous streams cut the foothills, and a dense growth of alders and bushes line the shore.

(143) **Yakataga Reef** extends about 0.5 mile from shore at **Cape Yakataga** (60°03'40"N., 142°26'00"W.) and parts of it show above high water. This is the best landing place between Icy Bay and Controller Bay about 57 miles to the west, but landing is possible only with occasionally smooth seas. In 1968, a depth of 9 fathoms was reported about 15 miles south of Cape Yakataga in 59°50.0'N., 142°31.0'W. An aero radiobeacon is at Cape Yakataga.

(144)

Cape Suckling to Katalla

(145) **Caution:** Mariners are urged to use caution when navigating in the area of this chart due to possible changes in depths and shoreline as a result of the earthquake of March 27, 1964.

(146) **Cape Suckling** (59°59'24"N., 143°53'36"W.), 25 miles northeast of Cape St. Elias, is low and wooded. Two miles north of the cape a prominent mountain ridge 1,500 to 2,500 feet high extends about 8 miles northeast. Three bluffs about 100 feet high are 1.5 to 2.9 miles west of Cape Suckling. From the E bluff a sunken reef extends 0.6 mile southwest to three rocks awash that are close together.

(147) **Southwest Breaker** is a rock bare at low water, 3.8 miles 260° from Cape Suckling.

(148) **Okalee Spit**, forming the south side of Controller Bay, is low with bare sand dunes, and is 7 miles long in an east-west direction. The southeast entrance to Controller Bay between the north end of Kayak Island and Okalee Spit is of little use except for small craft that can cross the flats east of Wingham Island.

(149) Two prominent rocks about 75 feet high are in the approach, about 1.5 miles east of **Lemesurier Point** at the northeast end of Kayak Island, and about 0.9 mile south of Okalee Spit. Ledges which uncover are between the two rocks, and extend about 300 yards east and west from them. Foul ground with 13 feet over its outer half extends from Lemesurier Point almost to the shoal surrounding the rocks.

(150) The channel is over a bar with least depths of 17 to 19 feet, thence between Okalee Spit and the two prominent rocks. North from the rocks, the channel has depths of 5 to 6 fathoms until about 1 mile inside the north end of Kayak Island; thence, through the flats, about 12 feet can be carried to Kayak Entrance, and 6 feet to Okalee Channel. Keep to the west of Southwest Breaker when using this channel.

(151) **Kayak Island** is 17.5 miles long, has peaks 1,110 to 1,390 feet high in the central portion and slopes gradually to its north part, which is low and wooded.

(152) **Cape St. Elias**, the south end of Kayak Island, is an important and unmistakable landmark. It is a precipitous, sharp, rocky ridge, about 1 mile long and 1,665 feet high, with a low, wooded neck between it and the high parts of the island farther north. **Pinnacle Rock**, about 0.2 mile off Cape St. Elias, is 494 feet high and connected to the cape by a low, narrow strip of land.

(153) **Cape St. Elias Light** (59°47'54"N., 144°35'56"W.), 85 feet above the water, is shown from a white square tower at the corner of a rectangular building on the southwest end of Kayak Island.

(154) A breaking reef extends 1 mile southwest from Pinnacle Rock. Another breaking reef, about 1 mile east of Cape St. Elias, extends about 1.5 miles south-southeast from Kayak Island and then continues as a submerged ridge of 2½ to 8 fathoms to **Southeast Rock**, which uncovers 11 feet. Broken ground with 7 to 16 fathoms extends about 2.5 miles southwest from the rock. A buoy, 3.2 miles south-southwest from Cape St. Elias Light, is on the broken ground. Tidal currents have considerable velocity across the reefs.

(155) The east coast of Kayak Island is strewn with boulders and landing is impracticable. Rocky shoals with 11 feet over them are 1.8 miles 172° from Lemesurier Point. Lying 3.2 miles southwest of the point and 1 mile offshore is a reef 0.5 mile long. Its north end is a rock 10 feet high and its south end uncovers 5 feet. For 9 miles northeast from Cape St. Elias, rocks awash and breakers extend 0.8 mile off the east coast of the island.

(156) **Sea Ranger Reef** is off the west coast of Kayak Island 3.3 miles north of Cape St. Elias. The inner shoal is 1 mile from shore, has 11 feet over it and often breaks. The outer shoal is 1.5 miles from shore, has a least known depth of 24 feet, and seldom breaks. Tide rips occur around it at times.

(157) The tidal currents on the west side of Kayak Island set north on the flood and south on the ebb, with an estimated velocity of 0.6 knot.

(158)

Anchorages

(159) Good protection from all winds except from the west can be found on the west side of Kayak Island. This area is used by foreign fishing vessels, generally large stern trawlers, for the transfer of fish between vessels at anchor. The smoothest water usually will be found between Sea Ranger Reef and Kayak Entrance, an anchorage that is used by fishing vessels during the halibut season. Indifferent anchorage can be had on the east side of Kayak Island in 15 to 20 fathoms, about 1.5 miles offshore midway between Cape St. Elias and Lemesurier Point. The holding ground is poor and a vessel should be ready to move on short notice.

(160) **Controller Bay** is formed by Okalee Spit and Kayak Island on the south and Wingham and Kanak Islands on the west. For some distance back from the east shore the land is but slightly above high water, and is broken by many streams; the bay is mostly flats. Entrance is through two principal channels, Kayak Entrance just south of Wingham Island and Okalee Channel just north of Wingham Island.

(161) (CLOB) **Kayak Entrance**, between Kayak and Wingham Islands, is rocky and foul with shoals. The least depth of the shoals as far as abeam of the southeast tip of Wingham Island is 1 fathom; above that and into the south portion of Controller Bay the depth is not more than 3 feet. Two rocks awash are about 0.3 mile north of the south entrance point. The channel is 0.5 mile wide between spits, which largely uncover, projecting out from Kayak and Wingham Islands. Kayak Entrance should be used with caution and only at high water.

(162)

Anchorages

(163) Anchorage can be made in 2 to 3 fathoms, bottom soft in places, in Kayak Entrance as far north as abeam of the southeast end of Wingham Island. There is some local chop with strong winds, but no outside swell enters the bay either through Kayak Entrance or around the north end of Kayak Island.

(164) Small vessels can anchor in the narrow channel close to the east side of the north end of Wingham Island. This channel is about 300 yards wide and has depths of 7 to 11 fathom for 1 mile south, then shoals gradually south. The flats on the east edge of the channel have depths of 7 to 11 feet. At times the tidal currents in the channel have a velocity of 3 knots or more.

(165) With heavy east winds, anchorage and shelter can be found in 16 to 18 fathoms 0.5 mile off the west side of Wingham Island.

(166) **Wingham Island**, 4 miles long and wooded, has three hills. The highest hill, near its north end, rises to 833 feet. The west shore of the island is precipitous.

(167) **Okalee Channel**, between Wingham and Kanak Islands, is 0.6 mile wide at the entrance. A depth of 6 fathoms can be carried to abeam of the south tip of Kanak Island. Further northeast, and into the bay depths are less. The channel is a secure anchorage, however, it changes annually and should be used only with local knowledge.

(168) The shoal on the south side of Okalee Channel, 1.5 miles northeast from Wingham Island, uncovers shortly after high water, and this shoal and the one on the opposite side of the channel are usually indicated by breakers. The shoal extending south from Kanak Island is mostly uncovered at low water. Above these shoals the flats bordering Okalee Channel are partly uncovered at low water only, and there is nothing to indicate the channel when the flats are covered.

(169) Vessels sometimes anchor in Okalee Channel about 2 miles above the north end of Wingham Island. This part of the channel is generally easy of access in clear weather. In the absence of local knowledge, navigation above this point should be at low water only.

(170) **Kanak Island** is about 4 miles long, very low and flat, and wooded in the middle. Breakers mark the extensive shoal which extends from the west side of the island. The south edge of the shoal is within 1.2 miles of the north end of Wingham Island.

(171) The passage between Kanak Island and Strawberry Point is used only by small boats at high water with local knowledge.

(172)

Currents

(173) The velocity of the current is 1.5 knots on the flood and 1.2 knots on the ebb off the north end of Wingham Island, and 1.7 knots on the flood and 2.0 knots on the ebb in the channel southeast of Kanak Island. The currents set into Controller Bay through all the entrances on the flood and out on the ebb. In Kayak Entrance the ebb has greater velocity than the flood and the estimated velocity is not over 3 knots. Tide rips occur at times in the channels south of Wingham Island and southeast of Kanak Island.

(174)

Weather, Kanak Island and vicinity

(175) During the summer the prevailing winds are from the east around through south to southwest. During the early spring and fall, northwest winds blow with great force over the flats. There is a great deal of cloudy misty weather during the summer. Fog is infrequent and usually clears before noon.

(176) **Point Hey** is a projecting and prominent point, high and narrow, on the northwest side of Controller Bay 1 mile north of Kanak Island. **Chilkat**, an abandoned village, is on the west side of the mouth of **Bering River,** which flows into the northeast end of Controller Bay.

(177) **Katalla Bay**, 23 miles north from Cape St. Elias, is between Strawberry Point on the east and Martin Islands on the west, a distance of about 4.5 miles, and indents the coast about 2 miles to the mouth of Katalla River. The bay is a roadstead sheltered from offshore winds but exposed to winds from southeast through southwest.

(178) **Strawberry Point** is low and bare at the end and wooded toward the foot of a prominent hill on the point which has a low break between it and the higher land north. A shoal with little water over it, and on which the sea generally breaks at low water, extends nearly 1.2 miles south from the point.

(179) The northeast shore of the bay from Strawberry Point to the mouth of Katalla River is a steep sand beach. The northwest shore from Katalla to Martin Islands is foul and should be given a berth of about 0.8 mile.

(180) **Palm Point** is 1.5 miles southwest of Katalla. A boulder reef, bare at low water, extends 0.4 mile south from it.

(181) **Martin Islands**, two in number and about 150 feet high, have steep rocky sides and are 0.5 miles from shore. The north island is joined to the shore by a flat, bare at extreme low water.

(182) **Martin Islands Light** (60°09'52"N., 144°36'22"W.), 150 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest point of Fox Island, the outer island of the Martin group. A 1½-fathom reef extends about 0.8 mile southwest of the light.

(183) **Katalla** is an abandoned village at the head of the bay, on the west side of **Katalla River**. The bar at the mouth of the river has a depth of about 3 feet, and the sea generally breaks on it. The entrance is narrow and rocky, and requires local knowledge. With a smooth sea, lighters formerly landed in the bight on the northeast side of Palm Point. The beach always has some surf, and with southeast or southwest winds, landing is impracticable. Shoals extend on both sides of the river mouth.

(184) The anchorage in the bay is 1.5 to 2 miles south of Katalla, in 5¼ to 7 fathoms, hard sand bottom. The holding ground is generally good, but quicksand south of Palm Point has caused the loss of many anchors. There are no dangers if the shore is given a berth of over 0.8 mile, but avoid the shoal extending 1.5 miles south from Strawberry Point.

(185)

Cooper River

(186) **Copper River** (60°25.0'N., 145°00.0'W.) emerges from the mountains between **Miles Glacier** and **Childs Glacier**, above which are rapids. Below the rapids, the river flows through broad flats in many changes channels that vary in depth from 5 to 20 feet at high stages. There are five navigable channels in the Copper River Delta. These channels require local knowledge due to changing bar and sea conditions and frequent dangerous breakers. The current is swift, and tidal effects are felt only near the mouth.

(187) The delta is low and marshy except for sand dunes, 50 to 150 feet high, on the islands and banks of the main channel. From seaward, the vicinity of Copper River shows as a vast, rugged range with numerous glaciers filling its gorges. From **Point Martin** to Hinchinbrook Island is a chain of low sand islets, 3 to 5 miles offshore. These islets are marked by seasonal lights that are 12 feet above the water and mounted on steel skeleton towers with red and white diamond-shaped daymarks. These lights are frequently destroyed during severe weather. Between 1 to 2 miles offshore of these lights are corresponding red and white buoys. They do not mark the navigable channels between the islets and should only be used for position reference. Behind the islets are tidal flats of mud and sand, intersected by sloughs that drain into the Copper River passes and into Glacier and Eyak Rivers.

(188) The shoals extending seaward from the islets off the Copper River Delta have not been surveyed, however, danger can be avoided by giving the islets a berth of more than 3 miles and by avoiding depths less than 10 fathoms.

(189) **Alaganik Slough**, the westernmost and main outlet of Copper River, is 0.5 to 1 mile wide, with depths from 5 to 15 feet depending upon the stages of tide and river. The mean range of tide is about 9 feet at the mouth and is reported to be 2 to 3 feet at **Alaganik** about 10 miles up the slough.

(190)

Eyak River to Hinchinbrook Island

(191) **Eyak River**, 6 miles east-northeast of Point Whitshed (60°26'45"N., 145°52'42"W.), flows from Eyak Lake and has a swift current. At favorable stages of the tide it is navigable for small, light-draft craft to the lake. A highway bridge with a 43-foot fixed span and a clearance of 8 feet crosses the river about 3.5 miles above the mouth. **Mountain Slough** is 1.5 miles west from the mouth of Eyak River.

(192) **Egg Islands**, about 5 miles southeast of mainland Point Whitshed and 10 miles east of Hinchinbrook Island, are low and partly grass covered. **Egg Island Channel**, just east of the islands, leads northeast between sand and mudflats to Alaganik Slough. The seaward approach to the channel is marked by a lighted whistle buoy.

(193) **Egg Island Light East** (60°21'59"N., 145°45'19"W.), 33 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark, on the southeast island of the group.

(194) The current in the channel is strong. East of Egg Islands, flood and ebb velocities of 3 to 3.5 knots, respectively, setting in the direction of the channel, have been observed. North of the islands a current of 1.5 knots, flooding northwest and ebbing southeast, was found. Southeast of Point Whitshed a west flood of 1.5 knots was observed.

(195) Navigation with local knowledge in this area is limited to small craft. Anchorage can be found in the wider parts of the sloughs north of the Egg Islands. There is no protection from prevailing winds but seas are broken up by the surrounding flats.

(196) **Point Whitshed** is at the southern extremity of the **Heney Range**, the steep eastern side of which flanks the alluvial coastal region of the Cooper River. The waterfall, 1 mile east from the point on the coastal side of the ridge, is a prominent landmark, seen for several miles over the mudflats, and shows well when the peaks and higher land are cloud covered. The higher peaks on Heney Range, as well as those on Hinchinbrook Island, are generally sharp and bare topped. The end of the peninsula west from Heney Range is rolling hills. **Government Rock**, at Point Whitshed, is 30 feet high and rounded in outline.

(197) The irregular slough, marked by stakes and black oil drum buoys and trending east and west near Point Whitshed and **Twin Rocks**, has a controlling depth of about 1 foot. When the Twin Rocks are just covered, the depth in the slough is increased to about 6 feet. Twin Rocks can be avoided by bringing the summit of Mummy Island, a rounded wooded knoll, in range with the 1,845-foot mountain peak on Hawkins Island.

(198) An abandoned radio tower is near **Gravel Point** on the mainland about 1 mile east from Mummy Island.

(199) **Mummy Island** is about 425 feet high and wooded. **Mummy Island Light** (60°27'44"N., 145°59'27"W.), 21 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the islets east of Mummy Island, where there is an approach through a slough. The islet 0.2 mile southwest of Mummy Island has two steep ends, 75 feet high, with a low, flat strip between.

(200) **Little Mummy Island,** 0.7 mile northwest of Mummy Island, is rounded in outline and profile.

(201) About 0.8 mile south of Mummy Island is **Pinnacle Rock**, on the edge of a slough extending from Point Bentinck to Mummy Island.

(202) Orca Inlet northeast to Cordova from Mummy Island is filled largely with flats. The channel from Mummy Island to Cordova is marked by seasonal buoys from May to October. Shoals throughout the area are constantly shifting; numerous other dangers exist in the area. Local knowledge is necessary. The inlet is described later in the chapter and numerous other dangers exist in the area. Local knowledge is necessary.

(203) **Point Bentinck** (60°23.5'N., 146°05.0'W.), at the east end of Hinchinbrook Island, is low, sandy, and grass covered, with sand dunes and brush 0.5 mile back. The brush covers a ridge extending southwest from **Strawberry Hill** at the south shore of Boswell Bay. The 798-foot knoll with a parabolic antenna north of Boswell Bay is prominent.

(204) At low water, sandflats bare for 2 miles off Point Bentinck. Part of this area is above high water offering a footing for sparse grass and a lodging place for driftwood. Shoal water continues off the point in a southeast direction, and about 4 miles from the point the shoal drops off into deeper water.

(205) A lighted whistle buoy about 4.5 miles south-southeast of Point Bentinck marks the seaward approach to a channel that leads between the flats 1 mile east of the point to Orca Inlet. After crossing the bar, **Strawberry Channel** becomes deep and narrow abreast of Point Bentinck. Low water is the best time to negotiate the entrance as the flats are bare and of some aid and should be used only with local knowledge.

(206) Currents with velocities up to 3 knots on the flood and 2 knots on the ebb were observed in this channel. On the bar, flood and ebb velocities of about 1 knot were found setting northeast and south, respectively. South of the flats which extend west from Egg Islands, a northwest flood of 0.5 knot and a southeast ebb of 1 knot were observed.

(207) A ½-fathom spot is about 1.2 miles north-northeast of Point Bentinck in about 60°24.7'N., 146°03.7'W. A group of rocks that bare is in the middle of the entrance to Boswell Bay in about 60°24.9'N., 146°05.7'W.

(208) **Boswell Bay**, indenting the east end of Hinchinbrook Island, affords anchorage for small craft just inside the entrance. Massive **Boswell Rock** is 100 yards off the north point. Immediately adjacent to the point itself is an undercut rock. A very small rock is 100 yards outside of Boswell Rock.

(209) To enter, bring the 65-foot rock, brown in color and near the south shore of the bay, just clear of the southernmost pinnacle inside the entrance, and steer on this range until abreast of Boswell Rock. Then haul south a little and anchor when the northeast point of Hinchinbrook Island is just shut in on the undercut rock. Flood and ebb velocities of 1.5 and 2 knots, respectively, have been observed in the narrow entrance.

(210) A mountain ridge parallels the southeast coast of **Hinchinbrook Island**. The tree line is about 1,000 feet high and the summits of the island are bare. The peaks are not prominent and from offshore they are difficult to identify.

(211) The promontory between **Point Steele** and **Hook Point** is 2 miles broad and is faced with 200-foot bluffs; back of the bluffs is swampland. Lowland and sand beaches are adjacent to the promontory on either side. A boat can land in good weather on the northwest side of Hook Point and 0.5 mile north of Point Steele. Reefs extend 0.4 mile from the promontory.

(212) Northeast of Cape Hinchinbrook, the seaward face of Hinchinbrook Island is steep, with rocky bluffs at the water, for 12 miles to an open bight with a broad sand beach on the west side of Hook Point.

(213) Hinchinbrook Entrance is described later.

(214)

Prince William Sound

(215) **Prince William Sound** is an extensive body of water with an area of about 2,500 square miles. It is very irregular in outline, with great arms spreading in all directions. The entrance, from Cape Hinchinbrook to Cape Puget, is 58 miles across but is almost closed off by islands. The largest is Montague Island, which extends well out into the ocean.

(216) Many of the islands and peninsulas in the sound are low and tree covered, but behind these rise eternal barriers of ice and snow. The **Chugach Mountains** stretch northwest from the St. Elias Range and enclose the sound round through north and west. On the north shore glaciers come down to the heads of the bays.

(217) **Prince William Sound Shipping Safety Fairway**, extending southeast from Hinchinbrook Entrance at the approaches to Prince William Sound, has separate inbound and outbound traffic lanes that merge in the northwest part. (See **33 CFR 166.100** through **166.110**and **166.400**, chapter 2, for limits and regulations.)

(218) There are Safety Zones and Security Zones in Prince William Sound. (See **33 CFR 165.1** through**165.33** and **165.1701** through **165.1711**, chapter 2, for limits and regulations.)

(219) **Traffic Separation Scheme (Prince William Sound)**, wholly within U.S. Territorial waters, has inbound and outbound traffic lanes and separation zones and leads from the vicinity of Cape Hinchinbrook through Prince William Sound and into Valdez Arm–the entrance to Port Valdez. (See Traffic Separation Schemes, chapter 1, for additional information. See also **33 CFR 167.1** through**167.15**and **167.1701** through **167.1703**, chapter 2, for limits and regulations.)

(220) Mariners approaching or departing Hinchinbrook Entrance are advised to use caution, because of strong currents, occasional severe weather, and fishing activity in the area. Hinchinbrook Entrance may be transited east or west of Seal Rocks, at the vessel master's discretion.

(221)

Dangers

(222) The off-lying dangers in the approaches to Prince William Sound are Middleton Island, Fountain Rock, Wessels Reef and Seal Rocks.

(223) The Hinchinbrook Entrance Safety Fairway has been established to provide an unobstructed approach for vessels from the southeast to Hinchinbrook Entrance. Use of this fairway provides safe clearance of Wessels Reef and Seal Rocks and terminates at Cape Hinchinbrook. The Prince William Sound Vessel Traffic Service begins about 3.5 miles after departing the designated safety fairway. A RACON established at Seal Rocks and a radio beacon at Cape Hinchinbrook provide aids to making the approach.

(224) **The March 1964 earthquake caused a bottom uplift of from 4 to 32 feet in Prince William Sound. Some parts of the sound outside of the traffic separation scheme have not been surveyed since the earthquake. Until a complete survey is made of the area, extreme caution is necessary because depths may be considerably less than charted and mentioned in the Coast Pilot.**

(225) A **Vessel Traffic Service (Prince William Sound Vessel Traffic Service)**, operated by the U.S. Coast Guard, has been established in Prince William Sound, Valdez Arm, Valdez Narrows and Port Valdez. The Service is designed to prevent collisions and groundings and to protect the navigable waters of the Vessel Traffic Service area from environmental harm resulting from such collisions and groundings.

(226) The **Prince William Sound Vessel Traffic Service** comprises three major components: a **Traffic Separation Scheme,** a **Vessel Movement Reporting System** and **radar surveillance.** The Traffic Separation Scheme comprises a network of one-way traffic lanes with a separation zone in between. The traffic lanes are each 1,500 yards wide from Hinchinbrook Entrance to the vicinity of Bligh Reef at the southeast end of Valdez Arm, then gradually decrease in width to 1,000 yards and terminate at Rocky Point. The separation zone is 2,000 yards wide between Hinchinbrook Entrance and the vicinity of Bligh Reef, then gradually decreases in width to 1,000 yards and terminates at Rocky Point.

(227) The Vessel Movement Reporting System is controlled by the **Vessel Traffic Center,** call "Valdez Traffic," which is operated continuously by the U.S. Coast Guard. The center maintains radiotelephone communications with vessels in the Vessel Traffic Service Area on VHF-FM channel 13. The center receives, assembles and processes information from vessels through mandatory and voluntary reports and in turn disseminates marine safety information to vessels participating in the Service.

(228) Vessels of 20,000 DWT or more are required to carry and operate an Automatic Identification System Shipborne Equipment (AISSE) transponder within the Prince William Sound regulated navigation area (VTS Area). (See AISSE, indexed as such, chapter 1, and **33 CFR 165.1704**, chapter 2, for more information.)

(229) The radar surveillance system covers Valdez Arm, Valdez Narrows and Port Valdez from Coast Guard operated radar sites. One site is at **Potato Point**, on the west side of Valdez Narrows, and the other is on Valdez Spit, which borders the south and east sides of the small-boat basin at Valdez. A continuous radar watch of these areas is maintained by the Vessel Traffic Center.

(230) The mariner is cautioned that the reliability of information received by the Vessel Traffic Center may vary depending on the method of receipt and source. Additionally, the Coast Guard may not always have first-hand knowledge of hazardous circumstances existing in the Vessel Traffic Service area, and unreported hazards may confront the mariner at any time.

(231) The Vessel Traffic Service is shown on the appropriate nautical charts of the area.

(232) The rules governing vessels operating in the Vessel Traffic Service area are given in **33 CFR 161.1** through **161.23** and **161.60**, chapter 2. In addition, detailed operating procedures are contained in the Prince William Sound Vessel Traffic Service Operating Manual, available from the Commanding Officer, Coast Guard Vessel Traffic Service, Valdez, AK 99686.

(233) Every ladden oil tanker is escorted by an ocean-going tug and a 210-foot Escort Response Vessel (ERV) from Valdez Marine Terminal to Hinchinbrook Entrance. ERVs are equipped to tow or assist tankers with power or maneuvering problems; to contain, recover and store oil; and carry spill response equipment.

(234) In Prince William Sound, the **narrow channel rule**, Inland Rule 9 Narrow Channel, applies when tank vessels, cruise ships and tank barges are underway between their berths and the northern boundary of the Traffic Separation Scheme in Valdez Arm. A vessel less than 20 meters (66 feet) in length shall **not** impede the passage of any vessel that can safely navigate **only** within the narrow channel fairway. A vessel engaged in fishing shall **not** impede the passage of any other vessel navigating within a narrow channel or fairway. A vessel shall **not** cross a narrow channel or fairway if the crossing will impede the passage of any vessel which can safely navigate **only** within the narrow channel or fairway. All vessels shall avoid anchoring in a narrow channel, unless circumstances require a vessel to anchor to avoid immediate danger. (See Navigation Rules, International-Inland).

(235)

Spill Response Resources

(236) Tank vessels carrying oil in bulk are required to have an approved vessel response plan and spill response resources (owned or contracted) to enter U.S. Ports. (See Oil Pollution, indexed as such, chapter 1.) In addition, all vessel spills are the responsibility of the spiller to remove. Spill response resources are available in Valdez, Cordova, Whittier, Port Etches and Naked Island. Contact Captain of the Port (COTP) in Valdez for further information.

(237) **Middleton Island**, about 50 miles off the entrance to Prince William Sound, is comparatively low and grass covered and difficult to pick up when making a landfall. An aerolight is on the west side about 1.3 miles from the south end of the island.

(238) From a few miles offshore the island appears flat. The highest ground, on the south, has an elevation of 126 feet. A pinnacle rock at the extreme south end is conspicuous from east and west. The north end slopes to a sandspit.

(239) The east and south sides of the island are bold hard-clay cliffs upon which great numbers of seafowl nest. The steepest and highest section of the cliff, on the west side, extends for 1 mile from the south end. There is also a short section of cliff midway along the west shore.

(240) A sandbar, awash at low water, extends 1.3 miles northwest from the north tip of the island. The channel between the extreme end of the bar and the main island, 0.5 mile northwest of the tip of the island, carries a depth of 3 fathoms, but strong rips occur and it is dangerous to use.

(241) Middleton Island is inhabited by technicians that operate the Federal Aviation Administration station. The

island is fringed by vast areas of reefs, rocks and kelp. Breakers occur at greater distances. Foul ground extends 2 miles south of the island, terminating in breakers except in very smooth weather. Seaward of these breakers, the bottom falls off rapidly into deep water, except that in 1967, a depth of 5¼ fathoms was found to exist about 0.3 mile south of the foul ground in 59°22.3'N., 146°23.1'W. Broken ground extends 3 miles to the east, terminating in breakers that first begin to appear when a moderate swell is running. This side of the island should be given a wide berth.

(242) The waters west of Middleton Island are clear of off-lying dangers, giving an easy approach to an anchorage from this direction. The best anchorage is 1 mile south of the north tip and 2 miles west of the island in about 12 fathoms. Small vessels can anchor further east, 1 mile west of the island, in about 7 to 8 fathoms. This area gives protection from the northeast and southeast. Tidal currents, of about 2 knots, run approximately parallel to the island.

(243) There are two good landing places, depending on the prevailing seas; one is on the northeast side of the island 0.3 mile from the north tip; the other is on the west side of the island, directly west of a quonset hut, 0.7 mile south of the north tip of the island. These areas have steep beaches, and landings can be made in moderate swells. The remains of the S.S. COLDBROOK, which was wrecked in this vicinity in 1942, are above the high waterline.

(244) At the north and south ends of the island the current is irregular and sets in a northeast-southwest direction. Tide rips are visible several miles to the south of the island, and to the north in the vicinity of Fountain Rock. **Mariners are advised to use extreme caution when navigating in shoal waters in the vicinity of Middleton Island because of possible additional shoaling as a result of the bottom uplift caused by the earthquake of March 1964.**

(245) **Fountain Rock**, 4 miles north of Middleton Island, breaks in light seas. The rock, which uncovers 2 feet, and the danger area, centered around the rock, is about 0.5 mile square. Safe passage can be made midway between Fountain Rock and the north tip of Middleton Island in 14 fathoms but should be done so with caution.

(246) **Wessels Reef**, bare at low water and 2 miles long, north-northeast – south-southwest, is about 19 miles north of Middleton Island. Depths of 30 fathoms or more are close to the reef, and with smooth seas it can hardly be detected. A buoy is on the east side of the reef.

(247) **Seal Rocks** are discussed later with Hinchinbrook Entrance.

(248)

Routes

(249) Vessels bound for ports on Prince William Sound from east use Hinchinbrook Entrance, between Montague and Hinchinbrook Islands. Vessels approaching from southwest use Elrington Passage, it being the best marked. Montague Strait, the widest and deepest of the west entrances to Prince William Sound, Latouche Passage, Prince of Wales Passage and Bainbridge Passage are also available to vessels approaching from the southwest.

(250)

Currents

(251) In Prince William Sound high and low water occur about the same time as at Cordova. It is reported that the currents along the approach to Prince William Sound set southwest invariably, and occasionally with a velocity of 2.5 knots; accordingly, extreme caution is required in approaching Hinchinbrook Entrance in thick weather. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(252)

Weather, Prince William Sound

(253) The waters of the sound are very deep and are chilled by large amounts of ice from the surrounding glaciers. The meeting of cold water and the colder air from the mountains with the warmer waters and vapor-laden airs of the Gulf of Alaska causes changeable weather; sudden wind squalls and thick fogs are common.

(254)

Ice

(255) Glacial ice is rarely found in the open waters of Prince William Sound. Ice is discharged by the Columbia Glacier, north of Glacier Island, and is driven into the sound by north winds; it may be expected, depending on the winds, from Bligh Island to Bald Head Chris Island and as far south as Storey Island. Large bergs may be found at any time along the north shore from Point Freemantle to Fairmount Island.

(256) There are numerous discharging glaciers in Port Wells, the northwest arm of the sound, but ice rarely reaches the entrance of the arm. There is a discharging glacier at the head of Blackstone Bay, but the ice is confined to the bay. Ice is discharged by Chenega Glacier on the southwest side of the sound and occasionally drifts east as far as Point Helen and the north entrance to Latouche Passage.

(257) During very cold weather ice sometimes forms in the arms of the sound that reach well into the mountains and is at times heavy enough to impede navigation.

(258) **Montague Island**, on the west side of Hinchinbrook Entrance approach to Prince William Sound, is high, mountainous and wooded to about 1,000 feet. There are no distinctive peaks, although Montague Peak, the most north one of the range, can be distinguished from the south. A striking characteristic of the east part of the north half of the island is the regularity of the succession of spurs reaching from the mountain range to the coast, where the spurs terminate in dirt bluffs with comparatively steep slopes.

(259) A constant southwest current is reported along the east coast of Montague Island. (See remarks on currents in chapter 3.)

(260) Two logging camps are on the north side of Montague Island. Brown bears are numerous on the island, and visitors should exercise extreme caution.

(261) **Montague Island was subjected to extensive upheaval during the March 1964 earthquake. Thirty-one feet was measured at Macleod Harbor, 11 feet at Port Chalmers and 15 feet at Patton Bay. Mariners should exercise extreme caution when navigating in depths under 10 fathoms or areas of uneven bottom.**

(262)

Cape Cleare to Purple Bluff

(263)

South and East coast of Montague Island

(264) **Cape Cleare**, the southwest extremity of Montague Island, is gently rounding and consists of eroded bluffs with rocky beaches. Back of the cliffs the cape is timbered and undulating with the ground gradually rising to the mountain masses nearby. A detached rock with a double head 25 feet high is about 75 yards off the southwest extremity of the cape. Three pinnacle rocks, with least depths of 2.4 fathoms, 2.9 fathoms and 3.8 fathoms are south of the cape and located at:

(265) 59°44'40"N., 147°51'33"W.,

(266) 59°44'22"N., 147°51'38"W., and

(267) 59°44'15"N., 147°51'45"W., respectively. The cape should be given a berth of at least 2.5 miles. Strong tidal currents sweep around the cape and tide rips are frequently encountered.

(268) Exposed anchorage can be had in the bight about 5 miles northeast from Cape Cleare in 10 to 20 fathoms, sand and gravel bottom. **Cape Cleare was subjected to extensive upheaval during the March 1964 earthquake. Shoaling and other scattered dangers exist in the area. Mariners should exercise extreme caution when navigating in depths under 10 fathoms or areas of uneven bottom.**

(269) **Neck Point**, the first prominent point northeast from Cape Cleare, is a bold headland with eroded bluffs. A prominent pinnacle rock 104 feet high is about 100 yards off the point and deep water extends close to shore. The point is separated from the higher peaks back of it by a neck of land somewhat lower than the outside point. The headland and the 1,900-foot peak are separated from the main ridge by a deep valley. When viewed from a position southwest of Cape Cleare the peak has the appearance of a detached conical island.

(270) **Jeanie Cove**, a bight 10 miles northeast from Cape Cleare, is exposed to the south and affords no protected anchorage. There are numerous reefs and rocky patches in this vicinity that should be avoided.

(271) Rocks awash are 0.8 mile northeast of the west entrance point, and a reef, which uncovers, is 0.8 mile southwest of Jeanie Point, the east entrance point. A depth of 7 fathoms is about 1.4 miles 212° from Jeanie Point.

(272) **Jeanie Point** is bold with rock cliffs. Back of the cliffs the land is timbered and rolling. A prominent detached rock is a short distance off the point.

(273) **Wooded Islands**, on the southeast side of Patton Bay, are 16 miles northeast from Cape Cleare. The largest of the three is wooded and flat topped, with a prominent square-topped pinnacle rock about 175 yards off its west end. **Tanker Island**, the middle islet about 0.4 mile east of the largest island, has a small clump of trees near one end that appear similar to the stack and wheelhouse of a tanker. **Fish Island**, the easternmost islet, is small with a few trees on the west summit. The area between the islands is foul, and the small passage southwest of the largest island is shoal and foul. These islands should be given a berth of at least 2 miles, and without local knowledge, the shoal rocky passage southwest of the islands should not be used by small boats.

(274) A survey of the coast from Wooded Islands to Cape Cleare disclosed no outlying dangers, but there are areas of broken bottom near the shore and vessels are advised to give the coast a berth of 3 miles.

(275) **Patton Bay**, 17 miles northeast of Cape Cleare, is about 4.5 miles square with Box Point on the northeast side and Wooded Islands on the southeast side. The deepwater entrance, about 3.5 miles wide, is between the rocky foul ground extending east from Box Point and the irregular rocky ground extending ENE from the Wooded Islands.

(276) Inside the bay, foul areas extend 0.3 mile south and 1.1 miles west of the south tip of Box Point. The east head of the bay is foul over 1 mile offshore. There are foul areas from the prominent pinnacle rock on the rocky point 2 miles northwest of the largest of the Wooded Islands: 0.7 mile north-northwest, 0.3 mile northeast and 0.8 mile south-southeast. **Nellie Martin River**, on the south side of the bay, is blocked by a bar across its mouth.

(277) There is good anchorage, except during northeast to south weather, for small boats in the bights at the northeast, west and southwest parts of the bay in 2½ to 10 fathoms, sand bottom, and for larger vessels in 15 fathoms or more, sand and mud bottom.

(278) **Box Point**, 20 miles northeast of Cape Cleare, is about 130 feet high and comparatively level, with steep bluffs, giving a rectangular appearance. Two box-shaped islets are on foul ground extending about 2 miles east with a 4¼-fathom depth in 59°57'08"N., 147°18'10"W.

(279) **Purple Bluff**, 5 miles north of Box Point, has a purple hue especially in the afternoon. South of Purple Bluff, a conspicuous valley, drained by **Beach River**, trends far inshore.

(280) From Purple Bluff to Zaikof Point, the outer coast of Montague Island is unbroken and free from outlying dangers except for Seal Rocks. About 3.5 miles south of Purple Bluff, a spit extends 0.5 mile offshore, terminating in a group of rocks awash.

(281) The west and north coasts of Montague Island are described later.

(282)

Hinchinbrook Entrance to Windy Bay

(283) **Hinchinbrook Entrance**, the main entrance to Prince William Sound, is about 6 miles wide and clear with the exception of Seal Rocks. The entrance (1.5 miles southwest of Cape Hinchinbrook Light) is 1,168 miles from Seattle via Strait of Juan de Fuca and the outside route and 1,306 miles via the inside passages, Cross Sound and Cape Spencer.

(284) The south extremity of the **Prince William Sound Traffic Separation Scheme** leads through the middle of Hinchinbrook Entrance. Additional information on this scheme is given earlier in this chapter under Prince William Sound.

(285) **Seal Rocks**, off the entrance, are 6 to 7 miles southwest from Cape Hinchinbrook and over 6 miles from Montague Island. They are two bare rocks, 30 and 37 feet high, surrounded by low rocks. The westernmost bare rock is marked by **Seal Rocks Light** (60°09'47"N., 146°50'18"W.), 48 feet (14.6 m) above the water and shown from a skeleton tower with a red and white diamond-shaped daymark. A radar beacon (Racon) is at the light. Rocks, submerged and awash, extend 1 mile northeast and 0.4 mile southwest from them. The entire reef within the 10-fathom curve forms an obstruction nearly 2.9 miles long. A lighted whistle buoy marks the east end of this obstruction.

(286)

Currents

(287) The tidal currents in the entrance set directly in or out of the sound, except east of Seal Rocks where the currents usually run east to west regardless of the tide. There is a strong set in the direction of Seal Rocks when the wind is blowing from the east and the tide is ebbing. In Hinchinbrook Entrance, Montague Strait and Latouche Passage, the velocity of the current is about 1 knot. The ebb current running out against a large swell causes overfalls, especially in the deep water 2 or 3 miles east of Zaikof Point, which have been mistaken for breakers. There are also tide rips on the broken ground around Cape Hinchinbrook. The flood entering west of Montague Island sets northeast past Montague Point and causes rips between it and Johnstone Point.

(288) Outside the entrance along the southeast coast of Hinchinbrook Island the current sets southwest almost constantly. (See remarks on current in chapter 3.) Current observations in Elrington Passage indicate a velocity of 1.5 knots.

(289) With a strong south gale and ebb tide, very heavy overfalls and tide rips occur in Hinchinbrook Entrance and are dangerous to small craft. Tremendous seas, steep and breaking, are sometimes encountered just outside the entrance. During heavy weather, tide rips and confused seas are in the vicinity of Wessels Reef. Many halibut schooners have foundered between Cape St. Elias and Montague Island.

(290) **Cape Hinchinbrook** is on the east side of Hinchinbrook Entrance, the principal entrance to Prince William Sound from the east.

(291) A few rocky islets are close to the southeast and southwest sides of the cape, and submerged reefs on which the sea breaks in a moderate swell are 0.4 mile southeast and south from the cape. The cape should be given a berth of at least 1 mile.

(292) **Cape Hinchinbrook Light** (60°14'15"N., 146°38'48"W.), 235 feet above the water, is shown from a white square tower on the corner of a building on the southwest point of the cape.

(293) **Zaikof Point**, on the west side of Hinchinbrook Entrance, is one of three prominent points on the northeast end of Montague Island. **Schooner Rock**, marked by a light, is a pinnacle 75 feet high about 0.3 mile off Zaikof Point.

(294) Between the three prominent points are Zaikof and Rocky Bays. Low depressions run through from the heads of these bays to the west side of Montague Island.

(295) **Zaikof Bay** is clear, but exposed to northeast winds. A 6¾-fathom shoal area is in the middle of the entrance to the bay, 1.4 miles northwest of Zaikof Point. An 8½-fathom shoal area is 3.6 miles from the head and in the middle of the bay. A shoal area extending across the bay, with depths of 10¾ fathoms and less, is about 2.3 miles from the head of the bay. Anchorage can be selected with the aid of the chart along the southeast shore, from 2 miles inside Schooner Rock to the head: also on a bar with 6 to 9 fathoms that extends across the bay 2.5 miles from the head. A swell makes in during southeast gales.

(296) A small vessel can anchor in the cove on the southeast side 1.6 miles from the head, with shelter from northeast winds. Anchor close to the south side of the point, about 0.1 miles from the short spit extending from it, in 8 to 10 fathoms. There is no swell, but the williwaws blow with great force over the lower land inside the point. When the wind hauls southeast or south the williwaws come from all directions, and it is well to shift anchorage farther from the spit. A small shallow lagoon is at the head of the cove, and the bank is steep-to.

(297) Foul ground marked by kelp extends 0.6 mile north to 1.0 mile west-northwest off **Middle Point**, which separates Zaikof and Rocky Bays.

(298) **Rocky Bay** is deep and exposed to north and east winds. A small vessel can anchor in good weather about 0.5 mile from the head and 0.2 mile from the northwest side, in 5 to 6.5 fathoms. Small craft can anchor all the way back in the bay, about 0.2 mile from the head. The depth in this location is about 15 feet. When entering this area, care should be taken to avoid a reef 0.1 mile off the southern shore and a rock 0.15 mile southwest of the reef.

(299) A reef that uncovers extends about 0.6 mile east from Montague Point which forms the west side of Rocky Bay. The south side of the bay has many dangerous off-lying rocks and reefs that extend to 0.2 mile offshore. Mariners

are advised to exercise extreme caution when navigating on this side of the bay.

(300) **Port Etches**, an inlet in the southwest end of Hinchinbrook Island, has secure anchorage, the best in Hinchinbrook Entrance, and is easy of access. The strongest gales are from the northeast and are not steady, but descend from the surrounding mountains in heavy williwaws of varied direction and at times blow hard in Port Etches when comparatively light winds prevail outside. The bay also serves as a mooring station for oil spill response barges.

(301) The best anchorage for large vessels is abreast Garden Cove, in 11 to 14 fathoms, muddy bottom. A flat extends 1.5 miles from the head of the inlet but can easily be avoided. The swell is quite perceptible in heavy south weather.

(302) **Garden Cove**, on the southeast side 2 to 2.5 miles from the head of Port Etches, is the best anchorage for small vessels. **Garden Island**, wooded and with a break through it, is in the middle of the entrance; there is no safe passage northeast of it. **Point Horn**, the southwest point of the cove, is the most prominent of the projecting points on the southeast shore of Port Etches.

(303) Anchor with Point Horn in line with the southernmost of the Porpoise Rocks and about 250 yards southeast of Garden Island in 4 to 5 fathoms, sticky bottom. No ocean swell reaches the anchorage, but, as elsewhere in Port Etches, the williwaws are bad in east gales.

(304) **English Bay**, on the south side of the entrance to Port Etches, is a bight about 0.4 mile wide. It can be used as a temporary anchorage by small vessels but is exposed to the ocean swell in heavy weather and open to north and west winds. East gales blow in williwaws from all directions but do not raise much sea in the inner cove. The holding ground is good. A submerged rock is about 0.2 mile north of the southwest entrance point, in about 60°17.5'N., 146°40.9'W.

(305) The two bights on the southeast shore of Port Etches, 1.2 and 3.5 miles northeast of English Bay, are rocky and should be avoided.

(306) **Porpoise Rocks**, on the northwest side of the entrance to Port Etches, are three principal rocks about 48 feet high, with numerous small rocks among and east of them. The westernmost and largest is flat on top and grass covered and has a rock covered at high water 200 yards west from it. Deep water is close to the rocks except on their northeast side where foul ground extends to Point Barber at Nuchek, a distance of 1 mile, with no safe channel between. Kelp surrounds Porpoise Rocks and extends 0.4 mile southwest of Point Barber.

(307) **Nuchek** is an abandoned Indian village at **Point Barber**, the southeast end of the shingle spit at the southwest end of Constantine Harbor. A hunting lodge is conspicuous.

(308) In good weather vessels have anchored off the shingle spit northwest of Nuchek. It is an uncomfortable anchorage because of the swell. The best anchorage in about 10 fathoms, sandy bottom, is abreast the spit midway between the village and the rocky wooded knob in the middle of the spit, with the southeasternmost of the three largest Porpoise Rocks in line with the end of Hinchinbrook Island.

(309) **Constantine Harbor**, the lagoon on the northwest side of Port Etches, has its entrance at **Phipps Point**. It is suitable only for small craft because of the very narrow entrance channel that is 50 to 100 yards wide with depths of 3 to 15 feet. The tidal currents have considerable velocity in the entrance. The best time to enter is at high water, preferably near slack. The harbor is mostly shallow but has an area 0.5 mile long and 0.4 mile wide with depths of 3 to 4¼ fathoms, sticky bottom, but exposed to williwaws. Numerous brown bears are reported to inhabit the area.

(310) On the northeast side of the entrance are three small rocky wooded islets with overhanging sides. Among them are rocks awash, and 60 yards south-southeast from the west islet is a submerged rock, all marked by kelp at slack water. The channel is close to the west islet, between the foul ground at the islets and a shoal of 9 to 10 feet extending 0.3 mile east from Phipps Point.

(311) Temporary anchorage in 10 to 12 fathoms, sticky bottom, can be had about 0.6 mile southeast of the rocky islets in the entrance of Constantine Harbor; there is considerable swell in heavy weather.

(312) **Bear Cape**, steep and high, is the southwest end of the northwest mountain ridge of Hinchinbrook Island. **Deer Cove**, 3 miles north of Bear Cape, has anchorage a little south of the middle of the entrance in 3 to 6 fathoms, with shelter from east and southeast winds. A light is on the point at the south side of the entrance to the cove.

(313) **Shelter Bay**, 5.5 miles north-northeast of Bear Cape, has a shallow entrance with strong currents and is foul inside. It should not be used even by small craft. A shoal with a rock that uncovers 3 feet extends 0.3 mile from the shore of the bight at the entrance to Shelter Bay. This bight should not be used without local knowledge.

(314) A vessel has anchored in 10 fathoms, about 0.3 mile northwest of **The Seven Sisters**, a group of rocks 2 miles north of Shelter Bay and found the williwaws less strong with southeast winds than at the anchorage in the cove 3 miles north of Bear Cape.

(315) Temporary anchorage, with shelter from offshore winds, can be had southwest of the sharp point, with two rocks about 30 feet high close-to, 0.4 mile southwest of Johnstone Point. The anchorage is about 0.5 mile off the sand beach, in 10 fathoms, sandy bottom.

(316) **Johnstone Point**, the northwest end of Hinchinbrook Island, is low and wooded with a small bluff at the water's edge. **Johnstone Point Light** (60°28'58"N., 146°36'51"W.), 57 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on a pillar rock off the point.

(317) Twin 100-foot communication towers, about 12 feet apart, and several buildings are about 1 mile east of Johnstone Point.

(318) East of Johnstone Point the shore is low and broken by two shallow bays or lagoons. The east bay has secure anchorage for small craft. The entrance, 4 miles east of Johnstone Point, is west of a large island and leads between two rocks. The one on the west side is bare at half tide and is at the end of a sandspit extending from the shore; it should be given a berth of about 40 yards. The rock on the east side is bare at extreme low water. When inside the rocks, head for the cove in the southwest side of the bay and anchor in about 3 fathoms, sticky bottom, about 250 to 300 yards from shore and about halfway between the sandspit mentioned above and the south shore of the bay.

(319) **Middle Ground Shoal**, between Hinchinbrook and Hawkins Islands, extends for 3 miles into Orca Bay. A lighted bell buoy marks the northwest end. The shoal consists of sand and mud and is subject to shifting. A narrow unmarked channel with depths of about 2 feet leads from the northwest corner of the shoal southeast into Hawkins Island Cutoff. Anchorage can be selected off the shore, southwest of Middle Ground Shoal, in 12 to 20 fathoms, soft bottom, with shelter from south and east winds.

(320) **Hawkins Island Cutoff**, between Hinchinbrook and Hawkins Islands, leads from Prince William Sound into Orca Inlet and is navigable only for small craft with local knowledge. It is full of shoals, and in its east end are extensive flats that bare and are largely covered at high water. Strong tidal currents are in its narrower parts.

(321) **Orca Bay** is the east arm of Prince William Sound, nprth of Hinchinbrook and Hawkins Islands. From its entrance between Johnstone Point on the south and Knowles Head of the north, Orca Bay extends about 30 miles in a general east direction. The city of Cordova is on Orca Inlet at the head of the bay. The south side of the bay is clear with the exception of Middle Ground Shoal. The north side is indented by large bays of no commercial importance.

(322)

Anchorages

(323) An anchorage area with fair to good holding ground and sand and mud bottom is on the north side of Orca Bay and extends about 2.2 miles south of Knowles Head. (See **33 CFR 110.1** and **110.233**, chapter 2, for limits and regulations.) Williwaws may cause vessels anchored in the east part of the anchorage to drag; caution is advised.

(324) **Knowles Head**, the southwest end of the mountainous peninsula between Port Gravina and Port Fidalgo, is a steep massive headland, with a prominent yellowish landslide down its south face. There are numerous rocks close to shore and a rock, covered 3¾ fathoms and marked by a lighted bell buoy about 0.5 mile southwest of it, is about 3 miles west of Knowles Head.

(325) **Red Head**, 4 miles east-southeast of Knowles Head, is a high hill with a long, low, wooded neck behind it. It is the west entrance point to Port Gravina and marked by a light.

(326) **Gravina Point**, on the north side of Orca Bay, is low and wooded, and at its south end is a bare spit. **Gravina Point Light 3** (60°37'22"N., 146°15'13"W.), 27 feet above the water, is shown from a skeleton tower with a green square daymark on the point.

(327) **Gravina Island**, low and wooded, is 1.5 miles northwest of the point and 0.6 mile offshore. Anchorage in about 10 fathoms, with shelter from northeast winds, can be had about 0.5 mile offshore between the island and Gravina Point.

(328) **Sheep Bay** has its entrance between Gravina and Sheep Points and extends north about 7 miles. The bay has not been completely surveyed, the bottom is exceedingly broken, and vessels should proceed with caution. Foul ground extends 0.2 to 0.4 mile from the east shore for 2 miles north of Sheep Point. A rock covered 2 fathoms in 60°38'29"N., 146°01'10"W., is about 0.6 mile west of the east shore of the bay. Indifferent anchorage in 18 to 20 fathoms can be selected in the middle about 3 miles north-northwest of Sheep Point and 0.4 mile south of the northwest point where the bay narrows. Numerous dangerous submerged rocks are in the upper part of the bay and across the channel. Vessels should proceed with care.

(329) **Sheep Point** is moderately low and wooded at the end and backed by high land. A wooded islet 15 feet high is 0.3 mile west of the point with bare rocks between; foul ground extends 0.3 mile south and west from the islet.

(330) **Hanks Island**, small and wooded, is 0.8 mile east-southeast of Sheep Point and 0.5 mile from shore. **Gatherer Rock**, 0.6 mile 124° from Hanks Island, is a pinnacle covered 13 feet with deep water close-to. Broken ground on which the least depth found was 8

(331) **Simpson Bay** is just east of Sheep Bay. **Bomb Point** is the east entrance point to Simpson Bay. The shores of the bay are fringed with numerous rocks and islets. In navigating the north arm, avoid the rock awash at extreme low water 400 yards southwest of the east entrance point of the inner part of the north arm. Anchorage can be had at the head of the arm in about 15 fathoms.

(332) The east arm of Simpson Bay is clear except near the shores. Good anchorage in 12 to 15 fathoms can be had on either side of the twin islands in the upper part of the arm. The Coast Guard uses the east arm for wet-pool storage of buoys. Occasionally, lanterns are attached to the buoys but at no time are they lighted. Mariners should not confuse these buoys with navigational aids.

(333) **Hawkins Island**, about 20 miles long and mountainous, is divided by **Canoe Passage** about 8 miles from its southwest end; the passage is no longer navigable. The northwest shore west of Canoe Passage is low tundra with patches of trees. Northeast of Canoe Passage the high land is nearer the northwest shore of the island; there are bluffs in places, and it is more densely wooded.

(334) Anchorage can be selected in places along the northwest shore of Hawkins Island with shelter from east and south winds. The best anchorage in 9 to 12 fathoms,

(339)

Orca Bay and Orca Inlet, Alaska
Image courtesy of GenWest (1997)

soft bottom, is 0.2 to 0.4 mile off the spit at the south end of Cedar Bay. A round, wooded islet is at the north end of this spit, and a larger wooded one is 0.5 mile northeast. Small craft, entering at high water and passing north of the awash and covered rocks inside, can anchor east of the spit, where there is a limited area with a depth of 7 feet.

(335) **Windy Bay** is a small inlet on the northwest coast of Hawkins Island about 5 miles northeast from Canoe Passage.

(336)

Channel Islands to Cordova

(337) **Channel Islands**, wooded and nearly 1 mile long, are at the east end of Orca Bay. They are 1 mile west of Salmo Point, on the northeast end of Hawkins Island, and 4.5 miles north of Cordova. The channel south of the islands is called **The Narrows**. A rock, covered 3 feet, is 0.3 mile southwest of the southwest end of Channel Islands and is marked by a light. This light and a light opposite it on Hawkins Island mark the southwest entrance to The Narrows.

(338) **Orca Inlet** extends southwest from the head of Nelson Bay to Mummy Island. Between North Island and Spike Island, about 4.5 miles to the south, the west and central portion of the inlet are shoal. The inlet south of Spike Island is largely blocked by flats. Depths of 25 to 30 fathoms are north of North Island, and a flat extends 1 mile from the head of **Nelson Bay** at its north end.

(340) **Salmo Point**, at the north extremity of Hawkins Island, is marked by a light. **Deep Bay**, at the north end of Hawkins Island, is 1.5 miles long and 0.5 mile wide. A large shoal covered 5 to 10 feet is across the entrance of the bay; depths of 19 to 25 feet are farther inside. Anchorage is possible for vessels able to cross the shoal.

(341) **Observation Island**, high and wooded, is 0.4 mile northeast of Knot Point. **North Island**, low and wooded, is 1 mile northeast of Salmo Point. **Shepard Point** is a sandspit 1.5 miles east-northeast of North Island and 6 miles north of Cordova. Ruins of a cannery, wharf and marine railway are on the point.

(342) **Cordova** is on the east shore of Orca Inlet opposite **Spike Island**, which is wooded and marked by a light at its north end. Cordova is 1,221 miles from Seattle via the ocean route and 1,363 miles via inside passages through British Columbia and Southeast Alaska to Cape Spencer. It is one of the most important towns in Alaska and is the supply and distribution point for numerous outlying fishing localities.

(343)

Prominent features

(344) **Mt. Eyak**, 2,498 feet, and **Mt. Eccles**, 2,680 feet, dominate the approach, with the town nesting at the foot of Mt. Eyak.

(345)

Traffic Separation Scheme

(346) Prince William Sound Traffic Separation Scheme was discussed earlier in this chapter under Prince William Sound.

(347)

Routes to Cordova

(348) **From the south via the Prince William Sound Traffic Separation Scheme** (discussed earlier in this chapter under Prince William Sound). Depart the scheme about 14 miles north of its southern entrance, thence via the charted recommended track leading from about 60°28.0'N., 146°52.5'W., through Orca Bay, thence via the marked channel through the east part of Orca Bay, proceeding through The Narrows, south of Channel Islands, then north of North Island Rock Light 10, thence via marked Orca Inlet to Cordova.

(349) **From the west via Elrington Passage**. Pass 1 mile east of Point Helen Light, thence north to 1.5 miles west and 1.5 miles north of Seal Island, thence east across the Prince William Sound Traffic Separation Scheme to the charted recommended track in about 60°35.0'N., 146°42.2'W., through Orca Bay, thence the same route to Cordova from the south given in the previous paragraph. **Caution:** Mariners are advised to adhere to the general principles for navigation when entering, departing or crossing a traffic separation scheme. (See Traffic Separation Schemes, chapter 1.)

(350) Fishing vessels sometimes approach Cordova through **Western Channel** and **Odiak Channel**, on the west and south sides, respectively, of Observation Island. The southern extent of Western Channel is buoyed, but local knowledge is helpful. There is significant shoaling northeast of Odiak Channel. This area of Orca Inlet is subject to shifting shoals. Fishing boats also approach Cordova through Orca Inlet from the south. This route requires local knowledge and was discussed earlier in this chapter.

(351)

Channels

(352) The deepest channel, mostly used by larger vessels, runs north of North Island and then follows the east shore south to Cordova; the channel is marked by lights.

(353)

Anchorages

(354) Good anchorage can be had in the channel northeast of Spike Island in 45 to 50 feet, 0.1 mile northwest of Spike Island in 40 feet, and 0.5 mile northwest of Spike Island in 22 to 25 feet, sand bottom. A cable area lies just west of this anchorage.

(355)

Caution

(356) Several visible rocks and shoals with little water over them are in the areas north and south of Observation Island and in the area around **North Rock** (60°36'42"N., 145°43'39"W.); mariners are urged to use caution when transiting these areas.

(357) A submerged wreck, covered 16 feet, is about 90 yards west of Spike Island in about 60°32'58"N., 145°46'29"W.

(358)

Currents

(359) The flood current enters the northeast end of Orca Inlet and sets southwest past Orca and Cordova. Off Orca the velocity of the current is about 1 knot, but a flood of nearly 2.5 knots has been observed. The current sets parallel with the face of the Municipal Wharf (Ocean Dock) and the City Dock (Coast Guard Dock) on the flood and ebb. In the channel between the City Dock and Spike Island the swiftest water will be found along the east shore of Spike Island, sometimes attaining 2 knots.

(360) Off Cordova the velocity is 1.8 knots on the flood and 1 knot on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(361) In the channel west of Big and Gravel Points, 6 miles southwest of Cordova, velocities up to 2 knots have been observed setting along the channel. A northeast current can be expected at low water and a southwest current at high water.

(362)

Weather, Cordova and vicinity

(363) Cordova, in eastern Prince William Sound, has a mean annual temperature of 39°F (3.9°C). The average high is 46°F (7.8°C) and the average low is 31°F (-0.6°C). July is the warmest month with an average high of 61°F (16.1°C) and an average minimum of 47°F (8.3°C). January is the coolest month with an average high of 31°F (-0.6°C) and an average minimum of 15°F (-9.4°C). The highest temperature on record for Cordova is 89°F (31.7°C) and the lowest temperature on record is -30°F (-34.4°C). Every month has recorded temperatures below freezing except July (extreme minimum of 33°F (0.6°C)) and each month, October through April, has recorded temperatures below zero (-17.8°C).

(364) The average annual precipitation for Cordova is 95.36 inches (2422 mm). September is the wettest month, averaging over 14 inches (356 mm) and April the driest, with 5.26 inches (134 mm). Precipitation falls on about 260 days each year, averaging about 20 days each month. Snow falls on about 90 days each year and averages about 124 inches (3150 mm) each year. December through March each average more than 20 inches (508 mm), with a slight maximum in December. Seventeen inch-plus (432 mm) snowfalls in a 24-hour period have occurred in each month, November through March. Snow has fallen in every month except June through September. Fog is present on average 141 days each year and is most likely in July and August when greater than half the days each month report foggy conditions.

(365) The prevailing wind direction in Cordova from an easterly quadrant, mainly east from June through February and then east-southeast during March, April and May. Calm conditions can be expected about one-third of the time. Gales are uncommon but do occur especially during December and January. In 2002, it was reported that williwaw winds can plunge down the side of the mountain just east of the Cordova City Dock.

(366)

Pilotage, Cordova

(367) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. Pilots for Prince William Sound are available from the Southwest Alaska Pilots Association (swpilots.com). (See **Pilotage, General** (indexed), chapter 3, for the pilot pickup station and other details.)

(368) The pilot boat can be contacted by calling "CORDOVA PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between the pilot and agent/vessel.

(369)

Quarantine, customs, immigration and agricultural quarantine

(370) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(371) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(372)

Coast Guard

(373) A U.S. Coast Guard vessel is stationed at Cordova. A Search & Rescue aircraft is stationed at the airport during the summer months.

(374)

Harbor Regulations

(375) The **harbormaster** administers the municipal wharves and the small-boat harbor and maintains an office at the west end of the small-boat basin.

(376)

Wharves

(377) **City of Cordova, Ocean Dock** (60°33'29"N., 145°45'17"W.): 408 feet of berthing space with 25 feet alongside and a deck height of 30 feet; 140-ton mobile crane and 12 acres of open storage; tank storage for 28,500 barrels of fuel-oil; receipt and shipment of containerized general cargo; receipt of petroleum products and handling supplies for fishing vessels; owned by City of Cordova and operated by the city and Orca Oil Co., Inc.

(378) **Alaska Marine Lines, Cordova Transfer Ramp** (60°33'08"N., 145°45'44"W.): 350 feet of berthing space with 11 feet alongside and a deck height of 25 feet; forklifts to 50 tons and open storage for 300 containers; receipt and shipment of containerized general cargo; owned and operated by Alaska Marine Lines, Inc.

(379) **City of Cordova, Approach No. 5, Loading Wharf** (60°32'48"N., 145°45'54"W.): 120 feet of berthing space with 14 feet alongside and a deck height of 20 feet; One ¾-ton electric-hydraulic derrick; handling supplies for fishing vessels; owned and operated by City of Cordova.

(380) **Cordova Small-Boat Harbor**, southeast and inshore of the City Dock, is protected by two breakwaters. It has about 852 berths and transient moorage is available; the harbormaster assigns berths. The harbormaster's office monitors VHF-FM channels 16 and 68. In 2010, the controlling depth in the entrance and access channel was 12 feet. The controlling depth in the berthing area was 7 feet. Water, electricity, gasoline and diesel fuel are available in the basin. The basin is owned and operated by the city.

(381)

Repairs

(382) Several fully equipped marine repair facilities can handle most repairs. A tidal grid, in the small-boat harbor, can handle craft up to 70 feet; a small boatyard is south of town.

(383)

Ferries

(384) The Alaska Marine Highway System provides ferry service with connections to Tatitlek, Valdez and Whittier. The ferries operate from the City of Cordova, Ocean Dock. For summer and winter schedules, visit *dot.state.ak.us*.

(385)

Communications

(386) Regular freight barge services to and from Seattle use the Municipal Wharf. Telephone and cellular telephone service is available. Scheduled air service to Anchorage and Juneau is maintained. Charter air service, boat service and automobile rentals are available.

(387) AT&T Alascom maintains a public coastal radio station at Cordova and on nearby Johnstone Point, Hinchinbrook Island.

(388)

Port Gravina to Eickelberg Bay

(389) **Port Gravina** has its entrance between Gravina Point and Red Head. A 2¼-fathom bank is near the middle of Port Gravina, between Gravina Rocks and St. Matthews Bay, in about 60°41'19"N., 146°19'24"W.

(390) **Gravina Rocks** are about 0.7 mile offshore north of the southeast entrance point.

(391) **Comfort Cove** is a small inlet on the southeast shore about 6 miles from Gravina Rocks. The entrance is narrow and the cove is suitable for small craft only.

(392) **Beartrap Bay** is a narrow inlet near the head of Port Gravina. There are rocks awash and areas of broken bottom in midchannel just within the entrance. About 1.2 miles from the entrance, an island nearly blocks the channel. The deep channel is on the north side of the island. Depths of 10 to 30 fathoms, mud bottom, will be found in the upper basin.

(393) The upper end of Port Gravina is deep and terminates in mudflats that extend for about 1.3 miles to the head of the bay.

(394) **Parshas Bay** is a small bay on the north side of Port Gravina. Depths of 50 to 30 fathoms extend nearly to the head of the bay, but there is no suitable anchorage. An extensive area of rocks, islets and foul ground extends about 1.3 miles west-southwest from the west entrance point to Parshas Bay.

(395) **Olsen Bay**, 1.5 miles west from Parshas Bay, shoals gradually from 20 fathoms at the entrance to mudflats at the head. In entering, the west shore should be followed at a distance of 0.5 mile or less to avoid the foul ground extending southwest from the west entrance point of Parshas Bay.

(396) **St. Matthews Bay** indents the north shore of Port Gravina 5.5 miles northeast from Red Head. The only known dangers are a reef extending 0.4 mile west off the east entrance point and a rock awash 0.1 mile south of the prominent point on the west side of the bay, 1 mile within the entrance. Good anchorage can be had near the head of the bay in 14 fathoms, mud bottom.

(397) Between Red Head and St. Matthews Bay are a series of lagoons. **Hells Hole** is the northeasternmost one. This shore should be given a berth of 0.8 mile or more.

(398) **Port Fidalgo**, an east arm of Prince William Sound, has its entrance between Goose and Bligh Islands and extends east about 22 miles. There are abandoned mines on the shores of Boulder and Landlocked Bays and on the south shore of Port Fidalgo, between Irish Cove and Whalen Bay.

(399) The waters of the main arm of Port Fidalgo are deep and free from outlying dangers. Vessels can navigate with safety as far as the southeast arm at the head of the bay by keeping over 0.4 mile offshore.

(400) **Goose Island**, on the south side of the entrance to Port Fidalgo, is wooded and has two prominent knolls. **Gull Island**, small and rocky, is midway between Goose Island and the shore. Strong tidal currents run between Goose Island and Porcupine Point. The passages between the islands and the shore should be avoided without local knowledge.

(401) **Goose Island Light** (60°42'47"N., 146°43'38"W.), 38 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest side of the island and marks the entrance to Port Fidalgo.

(402) **Porcupine Point** is a round, high, wooded bluff, with a low depression between it and Knowles Head. A rock awash and marked by kelp is 350 yards north of the point. A ledge with a depth of 3 fathoms extends 600 yards north from Porcupine Point.

(403) **Snug Corner Cove**, on the northeast side of Porcupine Point, has good anchorage except with northwest winds, but the bottom is irregular and should be avoided by large vessels. A rocky patch with a depth of 2½ fathoms is in the entrance 0.5 mile off the northeast side of Porcupine Point. A low divide is at the head of the cove and another is across Porcupine Point.

(404) To enter Snug Corner Cove, avoid the rock off Porcupine Point and follow the southwest shore at a distance of about 0.3 mile. Anchor about 0.3 mile off the bight in the southwest shore in 10 to 11 fathoms, soft bottom. Small vessels can find better shelter from north winds in the basin at the head of the cove, in a depth of 5 fathoms. Favor the southwest shore slightly when entering and anchoring. The shore of the basin should be given a berth of over 0.2 mile.

(405) **Two Moon Bay** indents the southeast shore of Port Fidalgo. Low divides cut the peninsula from the heads of its two arms. Good anchorage can be had in the bay at the entrance to either arm, and vessels of moderate size can anchor in the arms in about 10 to 15 fathoms, bottom generally sticky. A midchannel course should be followed in the arms. At the head of the southeast arm is a basin trending southwest where small vessels can anchor in 4 to 7 fathoms. The channel is between the west point and a reef bare at low water near the middle of the entrance. A 4-fathom rocky ledge extends about 0.5 mile north-northeast of the eastern entrance point of the basin and should be avoided by medium to large vessels.

(406) **Irish Cove**, on the south shore of Port Fidalgo, is a narrow inlet about 1 mile long. Small craft can find secure anchorage in the widest part near its head in 5 fathoms. To enter, favor the east side of the narrows and then keep in midchannel.

(407) In **Whalen Bay**, mudflats, bare at low water, extend across the bay 0.8 mile from the head. Small vessels can enter the bay on a midchannel course and find anchorage in 7 to 10 fathoms 1 mile inside the entrance to the bay.

(408) A group of islands is near the head of Port Fidalgo. A single islet is about 900 yards southwest of this group, the passage to the bight to the north lying between the groups. Its head is obstructed by mudflats, and it is reported that strong williwaws are encountered. A winter anchorage with good holding ground, protected from swells and north wind, is located on a 9-fathom mud shelf along the northwest shore, about 0.8 mile north of the midchannel entrance to the bight.

(409) The entrance to the east arm at the head of Port Fidalgo is 2 miles east-southeast of the group of islands. A dangerous foul area is 300 yards west of the northeast entrance point in about 60°50'58"N., 146°09'01"W. The head of the arm ends in a narrow passage that opens into a circular lagoon. It is reported that this passage is foul and should not be attempted.

(410) A well-sheltered anchorage is in midchannel 0.6 mile west from the above mentioned dangerous foul area in 15 fathoms, mud bottom. Small vessels can find anchorage near the head of the southeast arm in midchannel, 0.6 mile beyond the foul area, in 7 fathoms.

(411) **Fish Bay**, on the north shore of Port Fidalgo 9 miles above Porcupine Point, is an indifferent anchorage and should be avoided by large vessels. The williwaws are very heavy with northeast winds drawing through the

bay from the high mountains above its head. A small wooded island is just inside the entrance and 0.3 mile from the west side. The channel is east of the island and is obstructed near the middle by a rock covered 2¾ fathoms. Rocks awash are 200 yards off the east point at the entrance. Anchorage can be had in the middle of the bay, 0.3 to 0.8 mile above the island, 8 to 13 fathoms, with soft bottom in places.

(412) **Landlocked Bay** is on the north shore of Port Fidalgo between Bidarka Point and **Graveyard Point.** The bay is approximately 1 mile wide at the mouth and narrows to a tight channel with a right-angle turn into a small haven. The lower bay has depths of 50 to 60 fathoms in the center with rocks and islets extending from the east shore. Secure anchorage is afforded in the widest part above the narrows, in 14 to 15 fathoms, sticky bottom. The bay is easily entered during daylight, but the narrow entrance may be difficult to locate at night, rendering it difficult for vessels not equipped with searchlights.

(413) The islands on the east side below the narrows have covering rocks near them. Near the middle of the narrows is a rock with 10 feet over it. The channel is northwest of the rock, but the northwest shore abreast of it should be given a berth of about 100 yards. There is a flat at the head of the bay with an islet at its lower edge. A 2005 survey found 14 fathoms through the narrows, but entry by vessels other than small craft is not recommended without local knowledge due to the shoals encroaching from both north and south.

(414) There are no commercial enterprises in this bay. The mines are abandoned and the wharves are in ruins.

(415) **Bidarka Point** is a high wooded hill with a lower strip at its south end. A shoal extends 0.8 mile southwest from the point.

(416) **Boulder Bay**, between Bligh Island and Bidarka Point, has several dangers, the depths are very irregular, and the anchorage is not desirable.

(417) In the approach to Boulder Bay, a reef bare at lowest tide is 0.6 mile east of the east side of Bligh Island. About 0.2 mile east of this reef is a 2½-fathom spot and a depth of 6½ fathoms about 0.7 mile to the south-southeast. A submerged rock, nearly awash at low water, and a rock awash close north, are 0.4 mile from a point on the east shore and 1.6 miles northwest from Bidarka Point. A reef, partly bare at low water, is 0.2 to 0.4 mile southeast from the small wooded island in the middle near the head of Boulder Bay.

(418) **Bligh Island**, on the east shore of Prince William Sound, is mountainous. The southwest end of the island is a high, steep, wooded head, with yellow landslides near the water. On the northwest side are islands with foul ground between.

(419) Good anchorage from north winds for large vessels can be found about 1 mile south of Bligh Island.

(420) **Reef Island**, off the west side of Bligh Island, is level and wooded and has a single knoll in the middle. A rock awash is 0.3 mile 208° from the southwest end of the island.

(421) **Bligh Reef**, about 2 miles long, has depths of ¼ fathom to 9 fathoms and shoals to bare near the center. The reef is marked by **Bligh Reef Light** (60°50'20"N., 146°53'02"W.), 59 feet above the water and shown from a pile structure with a red and white diamond-shaped daymark. A racon is at the light. The steamship OLYMPIA was lost on Bligh Reef in 1910 and the oil tanker EXXON VALDEZ struck the reef on March 24, 1989.

(422) **Busby Island**, off the northwest end of Bligh Island, is high and partly wooded. Its west point is long, level, and wooded and is surrounded by a reef to a distance of nearly 0.5 mile. The point is marked by **Busby Island Light** (60°53'43"N., 146°49'01"W.), 48 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark.

(423)

Currents

(424) At the entrance to Port Fidalgo, north of Goose Island, the velocity of the current is about 0.5 knot.

(425) **Tatitlek Narrows** separates Busby and Bligh Islands from the main shore and offers a more direct route for small craft between Port Valdez or Ellamar and points on Port Fidalgo. The channel, marked with daybeacons, has depths of about 4 fathoms, except for a dangerous shoal with a least depth of 8 feet in midchannel about 400 yards south-southeast of Daybeacon 4, at 60°51'55"N., 146°42'20"W. The channel is narrow with foul ground on both sides; local knowledge is advisable.

(426) **Tatitlek**, a native community on the north shore at the southeast end of the narrows, is home to about 16 families. The village has a school, church, and a Community Center, which includes museum, post office, health clinic, Village Council Office and minimal visitor accommodations. There is electricity and telephone. There is a state-maintained pier with a 64-foot face and an Alaska State Ferry Pier with service upon request to Valdez and Cordova. There is also a 100 by 2,500-foot gravel air strip. The Village Council Office can be reached by phone at 907-325-2311.

(427) **Virgin Bay** is a shallow bight 0.5 to 0.8 mile long on the northeast shore of Tatitlek Narrows. There is little water in the bay, and on the north side of the entrance is a long reef bare at low water.

(428) **Ellamar**, a village on the northeast side of Virgin Bay, has a large wharf in ruins. Small craft find shelter south of the ruins.

(429) Anchorage can be had 0.3 to 0.4 mile from the northeast shore of Tatitlek Narrows southeast of Black Point and 0.5 to 0.8 mile northwest of Ellamar, in 12 to 16 fathoms, sticky bottom.

(430) Larger vessels can find anchorage between Busby Island and Black Point, 1.4 miles northwest of Ellamar, in about 30 fathoms, fair holding ground.

(431) **Valdez Arm**, the main north arm of Prince William Sound, extends about 13 miles northeast from Busby Island and **Point Freemantle** to the north end of Valdez Narrows, then turns east for 11 miles to the head of Port

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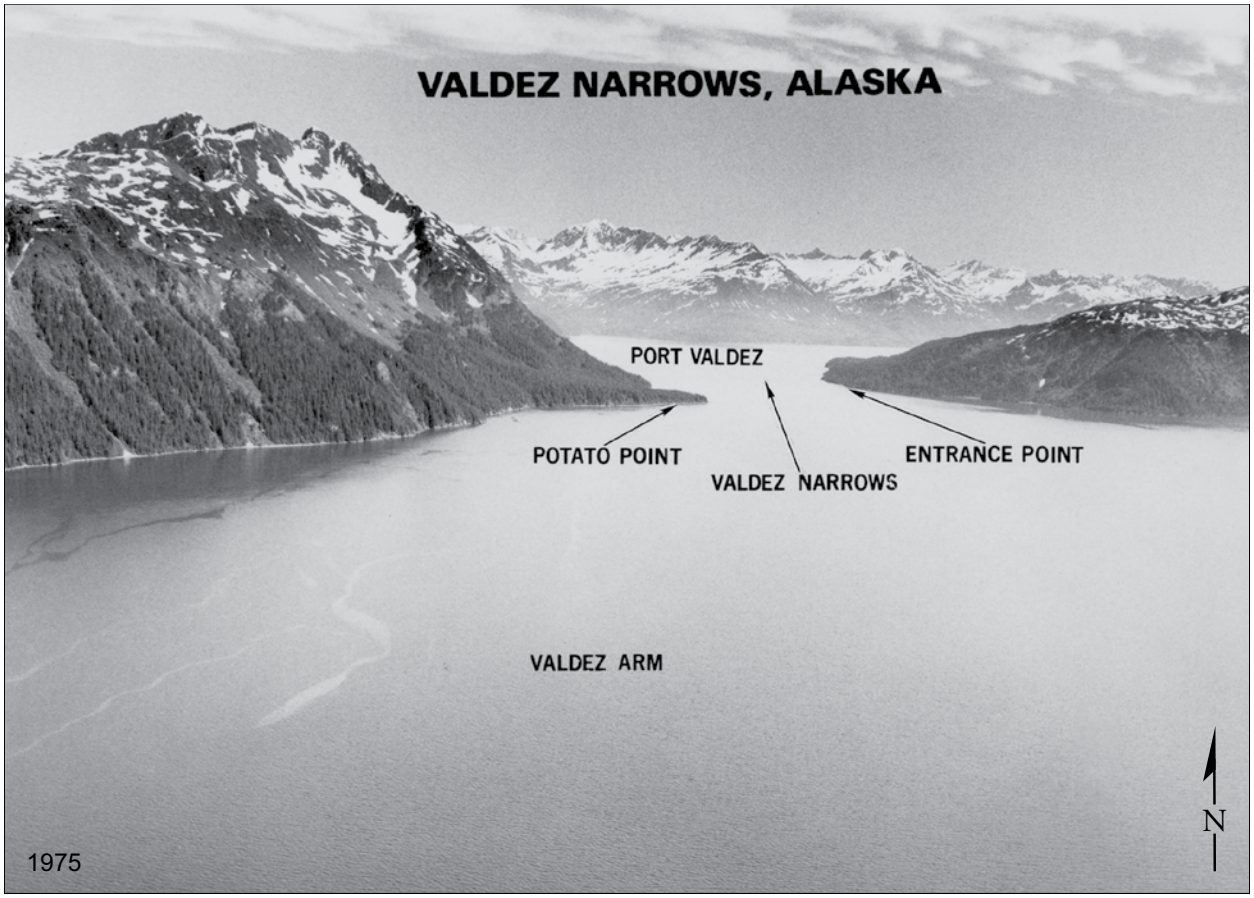

Valdez. The water is very deep and there are no known outlying dangers except for Middle Rock near the North end of the narrows, which is described later in this chapter, and two shoals, 2 fathoms and 7 fathoms, about 0.35 mile apart, near the west edge of the arm about 3.5 miles northeast of Point Freemantle. The south side of the 7-fathom shoal is marked by a lighted buoy. Anchorages are few because of the great depths.

(432) The **Prince William Sound Traffic Separation Scheme**, which is a component of the **Prince William Sound Vessel Traffic Service**, leads through the middle of Valdez Arm. Additional information on the traffic separation scheme and the vessel traffic service is given earlier in this chapter under Prince William Sound.

(433) **Sawmill Bay**, on the west shore of Valdez Arm 9 miles northeast of Point Freemantle, has depths of about 9 fathoms in its 0.3 mile-wide entrance. Secure anchorage can be had behind the west entrance point, in 5 to 9 fathoms, sticky bottom. The south and west ends of the basin forming the anchorage are shoal, and a flat fills the head of the bay down to the narrows at the north end of the basin.

(434) **Rocky Point** is the west end of the peninsula between Tatitlek Narrows and Galena Bay. A rocky grass-covered islet is 0.2 mile north of the point. **Rocky Point Light 10** (60°57'02"N., 146°46'06"W.), 38 feet above the water, is shown from a skeleton tower with a red triangular daymark on the southwest point of an island west of Rocky Point.

(435)

Currents

(436) The currents in Valdez Arm are too weak or variable to be predicted.

(437) **Galena Bay** is about 5 miles long in a general east direction. About 3 miles from the mouth, the bay is constricted midway by a peninsula projecting approximately 0.5 mile from the southern shore. Entering from Valdez Arm, a southeasterly course is steered toward a steep walled basin at the foot of Ellamar Mountain. The passage through **The Narrows**, to the inner bay becomes visible only from well within the outer bay. The outer bay has depths over 100 fathoms. The inner bay has depths less than 60 fathoms. There are extensive flats off the mouths of the two rivers emptying into the bay. In the vicinity of The Narrows, numerous massive rock outcrops protrude abruptly to a minimum depth of 4½ fathoms (8.2 m). The only anchorage for medium to large vessels is at the eastern extent of the bay, about 0.2 mile south of the islets on the north side at the head of the bay, in about 15 fathoms, bottom soft in places. This anchorage is well protected.

(438) A group of rocky, grass-covered islets extends 0.5 mile northwest off the north point at the entrance of Galena Bay. Anchorage can be had in the middle of the

(447)

cove northeast of the islets, in 10 to 12 fathoms, sticky bottom.

(439) **Jack Bay**, on the east shore south of Valdez Narrows, is 0.8 mile wide at the entrance and 0.2 to 0.4 mile wide in the upper 3 miles. An island in the middle of the bay has a bare islet about 200 yards north off the northwest end and several islets off the southeast end. Numerous rocks surround the island and the islets to the southeast. Two coves indent the south shore, 0.7 mile and 1.8 miles inside the entrance. The entrance to the first cove is foul; the second cove has depths of 4½ to 8 fathoms and is a suitable anchorage for small vessels. Jack Bay has mudflats at the head and numerous boulders along the shore. Anchorage for large vessels can be had 1.2 miles inside the entrance about 0.2 mile from the north shore, in 12 to 15 fathoms. Other anchorages are also available in the entrance to the cove about 1.5 miles east-southeast of **Tongue Point**, in 9 to 12 fathoms, and in the cove about 0.5 mile east of the island, in 9 to 14 fathoms.

(440) **Valdez Narrows** is about 0.8 mile wide, with deep water and bold shores. **Middle Rock**, near the middle of the north end of the narrows and marked by a light, is a pinnacle barely covered at extreme high tides. A shoal, west of the light, extends east from the mainland about 0.3 mile. The shoal consists of a rock awash at the inner end, a 2½-fathom depth at the outer end, and a wooded islet in between. The tidal currents in the narrows are too weak and variable to be predicted, however, it is reported that deep-draft tankers maneuvering at the regulated low speed of 6 knots will be affected appreciably by the currents. Speed adjustments may be necessary to lessen the effect of the currents on deep-draft vessels.

(442) **Entrance Point**, 1 mile north of Jack Bay on the east side of Valdez Narrows, and **Potato Point**, on the west side of the narrows, are marked by lights. **Entrance Island**, 1.2 mile east of Middle Rock, is marked by a light.

(443) **Port Valdez** is the designation given the body of water extending from Valdez Narrows to the head of the bay.

(444) **Shoup Bay**, at the northwest end of Port Valdez, is fed by an inflow of water from **Shoup Glacier**. The entrance is crossed by a sand bar that has a depth of 1 fathom in a narrow channel at the center. The bay occasionally has floating ice, some of which escapes into Port Valdez when the wind and tide are favorable.

(445) **Jackson Point** is a jutting point of land extending from the mainland on the south side of Port Valdez. This point of land was once an island.

(446) **Valdez Marine Terminal** is on the south side of Port Valdez between Jackson Point and **Saw Island**, 0.8 mile to the west. It is the terminus of the Trans-Alaska Pipeline, which carries crude oil south from Prudhoe Bay on the Arctic Ocean. The terminal and adjacent waters are within a **Safety Zone.** (See **33 CFR 165.1**throu

gh**165.8**,**165.20**, **165.23**, and **165.1701**, chapter 2, for limits and regulations.)

(448)

Wharves

(449) The terminal, operated by Alyeska Pipeline Service Co., has four deepwater berths for the shipment of crude oil. Berth No. 1 is a floating pier with four 12-inch loading arms with a maximum loading rate of 20,000 barrels per hour each. Berth Nos. 3, 4 and 5 are T-head piers each having four 16-inch loading arms with a maximum loading rate of 27,500 barrels per hour each arm.

(450) No bunker fuel or fresh water is available at the terminal. The alongside depths for each facility are reported depths. For complete information on the latest depths, terminal facilities, services and regulations, refer to the Trans-Alaska Pipeline Port Information Manual, Valdez, Alaska, published by the operator.

(451) **Berth No. 1**: east end of Jackson Point; 1,200 feet with dolphins; 99 feet alongside; deck height, 32 feet.

(452) **Berth No. 3**: west side of Jackson Point; 1,050 feet with dolphins; 90 feet alongside; deck height, 38 feet.

(453) **Berth No. 4**: about 0.4 mile west of Jackson Point; 1,380 feet with dolphins; 90 feet alongside; deck height, 38 feet.

(454) **Berth No. 5**: about 0.7 mile west of Jackson Point; 1,385 feet with dolphins; 85 feet alongside; deck height, 38 feet.

(455) A rock that uncovers 10 feet is about 175 yards southwest of Saw Island.

(456) About 0.5 mile east of Jackson Point, submerged piling of an abandoned cannery wharf may exist. Ruins of the inactive Midas mine wharf are 2.3 miles east of Jackson Point.

(457) **Valdez** is on the north shore of Port Valdez about 2 miles from its head. It is at the south end of **Richardson Highway**, which connects with Fairbanks 374 miles north, Anchorage 308 miles west, and Seward 434 miles southwest. Open all year, the highway also links with the **Alaska Highway.**

(458) The town of Valdez was formerly at the head of Port Valdez but was relocated to its present site due to the extensive damage it suffered from the March 1964 earthquake. It is an important gateway to interior Alaska and is the northern most ice-free port in the Western Hemisphere. It serves as the southern terminus for the Trans-Alaska Pipeline. It also has a commercial fishing fleet and is popular for tour and excursion boats.

(459) Valdez is 1,232 miles from Seattle via the outside route through the Strait of Juan de Fuca and 1,374 miles via the inside route to Cape Spencer.

(460)

Prominent features

(461) The Coast Guard radar tower at Valdez: group of grain silos in the northeast: the white petroleum tanks at the head of the bay in Old Valdez and the Alyeska pipeline terminal tank farm with a 642-foot stack with strobes on the south shore.

(462)

Traffic Separation Scheme

(463) Prince William Sound Traffic Separation Scheme was discussed earlier in this chapter under Prince William Sound.

(464)

Routes to Valdez

(465) **From the south via Prince William Sound Traffic Separation Scheme** (described earlier in this chapter under Prince William Sound). Depart the scheme at its north end in Valdez Arm, thence through Valdez Narrows and Port Valdez to Valdez.

(466) **From the west via Elrington Passage**. Pass 1 mile east of Point Helen Light, thence north to 1.5 miles west of Seal Island Light, thence north to 2 miles east of Smith Island, thence east to enter the Prince William Sound Traffic Separation Scheme and depart the scheme at its north end in Valdez Arm, thence through Valdez Narrows and Port Valdez to Valdez.

(467) **Caution:** Mariners are advised to adhere to the general principles for navigation when entering, departing or crossing a traffic separation scheme. (See Traffic Separation Schemes, chapter 1.)

(468)

Channels

(469) The approach to Valdez is deep and clear of dangers once through Valdez Narrows.

(470)

Anchorages

(471) There are no safe anchorages at Valdez due to the foul ground and high winds that prevail from the west during the afternoons of the summer season. Convenient anchorages in the approaches to Valdez Arm and Port Valdez have been described.

(472) For limits and regulations of Special Anchorage Areas, see Orca Bay, earlier in this chapter and **33 CFR 110.1** and **110.233**, chapter 2.

(473)

Currents

(474) The tidal currents are too weak and variable to be predicted. In 1966, however, it was observed that noticeable currents from the Robe River discharging into the southeast end of Port Valdez are created at times of low and high stages of the tide. This current affects the area of the Old Valdez waterfront. The current sets 000° with a maximum observed velocity of 2 to 3 knots flowing perpendicular to the ruins of the piers at Old Valdez.

(475) In 1979, it was reported that the surface currents in Port Valdez had a maximum velocity of 0.5 to 1.0 knot. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(476)

Pilotage, Valdez

(477) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. Pilots for Prince William Sound are available from the Southwest Alaska Pilots Association (swpilots.com). (See **Pilotage, General** (indexed), chapter 3, for the pilot pickup station and other details.)

(478) Contact the Valdez pilots landline directly at 907-255-0869. The Valdez pilot boats include: the "BERING," a 53-foot aluminum boat; and the "EMERALD ISLAND," a 76-foot aluminum boat. All have the word Pilot forward. Vessels picking up a pilot should maintain a speed of about 8 to10 knots and have the pilot ladder 5 feet above the water. The pilot boat displays the appropriate day and night signals when on duty.

(479)

Towage

(480) Three 5,750-hp tugs and two mooring launches are available for docking and undocking.

(481)

Quarantine, customs, immigration and agricultural quarantine

(482) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(483)

Quarantine

(484) A U.S. Public Health Service Contract Physician is located at the hospital in Valdez. (See appendix for additional information.)

(485)

Customs

(486) Valdez is a **customs port of entry.** See **Customs Ports of Entry** contact information in Appendix A.

(487)

Coast Guard

(488) A **Coast Guard Sector Field Office, Station** and **Vessel Traffic Service Center** are in Valdez. (See Appendix A for address.)

(489)

Harbor Regulations

(490) The small-boat harbor is administered by the Harbormaster; the office is located on the north shore of the small-boat basin, telephone 907–835–4981, FAX 907–835–2958. The rest of the Port is administered by the Port Director, with an office located at the head of the ferry terminal dock, telephone 907–835–4981, FAX 907–835–2958. The Valdez Marine Terminal is administered by the Alyeska Pipeline Service Company.

(491)

Wharves

(492) There are three deep-draft waterfront facilities in Valdez. Longshoreman services are provided by North Star Terminal and Stevedore Company.

(493) **State of Alaska, Valdez Ferry Terminal:** west side of City Dock; 200 feet of berthing space; 20 feet alongside; deck height, 22 feet; landing for passenger and vehicular ferry; owned and operated by the State. The terminal and adjacent waters are within a **Safety Zone**. (See **33 CFR 165.1712**, chapter 2, for limits and regulations.)

(494) **Valdez City Dock** (61°07'27"N., 146°21'42"W.): 600-foot face with 26 feet alongside; deck height, 16 feet; receipt and shipment of fish; mooring of vessels; fueling by truck; water, garbage wastewater disposal and telephone available; owned by the city and operated by Nautilus, Inc.

(495) **Petroleum Dock:** 133 yards east of City Dock; 200-foot face; 275 feet of berthing space with dolphins; 30 to 36 feet alongside; deck height, 22 feet; shipment of petroleum products; mooring vessels; pipelines extend from wharf to storage tanks in rear, total capacity 176,225 barrels; owned and operated by Valdez Petroleum Terminal, Inc.

(496) When approaching this pier care must be taken to avoid a 3-fathom shoal extending about 100 yards out from the west breakwater of the small-boat harbor to east.

(497) **Valdez Small-Boat Harbor,** the small-boat harbor to the east of the fuel pier, is entered between a breakwater to the west of the entrance and Valdez Spit to the east of the entrance; both are marked by lights. Two seafood plant piers are just inside on the south shore. The harbor can accommodate about 520 boats, and transient berths are also available. The **harbormaster** assigns berths and can be contacted on VHF-FM channel 16; channel 8 is used as a working frequency. Water, electricity, fuel, telephone, boat-launching ramps and a 60-ton mobile vertical boat lift are available in the harbor. A tide grid is available for underwater repairs.

(498) **Ship Escort Response Vessel System Dock (SERVS Dock)** is about 0.2 mile east of the small-boat harbor entrance. The dock is a concrete floating wharf with a 115 by 15-foot ramp from a pier. The wharf has 200-foot face, 590 feet total berthing space with dolphins; 90 feet reported alongside; two cranes are available; owned and operated by Alyeska Pipeline Service Company.

(499) A small-craft basin is just east of the SERVS Dock and is protected by rubble mound breakwaters on the south and east sides. The basin has several floats for small-craft and a surfaced launching ramp.

(500) **Port of Valdez, General Cargo and Container Wharf:** 1.5 miles east of the small-boat harbor at Ammunition Island; concrete, floating offshore wharf with two 200 by 38-foot steel and concrete approach ramps from landfill at rear. The wharf has 700-foot face, 1,200 feet berthing space; 50 feet reported alongside; deck height, 15 feet; 21 acres of open storage; nine 522,000-bushel capacity grain silos; receipt and shipment of conventional and containerized general cargo and mooring cruise ships; one 140-ton crane, one 100-ton crane and forklifts are available; owned by the City of Valdez and operated by the City of Valdez and North Star Terminal & Stevedore Co. The terminal and adjacent

waters are within a **Safety Zone**. (See **33 CFR 165.1703**, chapter 2, for limits and regulations.)

(501) At the head of the bay are mooring buoys used for oil spill response barges.

(502)

Supplies

(503) Gasoline, diesel fuel and water are available in the small-boat basin. Provisions and some marine supplies can be obtained in town.

(504)

Repairs

(505) Minor repairs can be made to small craft.

(506)

Ferries

(507) The Alaska State Ferry provides daily service from Valdez to neighboring Prince William Sound communities seven days per week in the summer and one to two days per week in the winter. By ferry, Valdez is two hours and forty five minutes from Tatitlek, five hours and forty five minutes from Whittier and by fast ferry only two hours and forty five minutes from Cordova. For more information visit: dot.alaska.gov/amhs/comm/valdez.shtml.

(508)

Communications

(509) Valdez is connected by road with the Alaska Highway system. Scheduled air service to Anchorage is maintained, and charter air service, bus and auto rentals are also available. Telephone and cellular telephone service are available.

(510) **Glacier Island** is on the north side of Prince William Sound, west of the entrance to Valdez Arm. It is mountainous and indented by a number of bays.

(511) **Glacier Island Light** (60°52'20"N., 147°05'31"W.), 38 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the east side of the island.

(512) **Chamberlain Bay**, on the south side of Glacier Island, is exposed to the south but affords anchorage for small vessels about 0.4 mile from the head in about 16 fathoms, muddy bottom. Rocks, which partly bare at low water, extend 0.2 mile from the west side of the bay about 0.7 mile from the head.

(513) **Jackson Cove**, on the west side of Chamberlain Bay, is a secure harbor for small craft. The entrance has a least width of about 50 yards and a depth of about 1 foot; at the narrowest part of the entrance, favor the north side. The upper half of the cove has rocks on both sides, and a careful midchannel course should be followed. Anchorage can be selected in the lower part of the cove in 10 to 15 fathoms, also about 350 yards from the head in about 5 fathoms. A divide about 75 feet high extends through to Jackson Hole.

(514) The passage north of Glacier Island in its east part is very deep except near the shore. The north side of Glacier Island is indented by Finski Bay, Growler Bay, Eagle Bay and Jackson Hole. On the north side of the passage, Columbia Bay, Long Bay, and several other smaller inlets form an irregular coast.

(515) **Finski Bay**, situated on the northeast side of Glacier Island, shoals from about 5 fathoms at the entrance to less than 1 fathom at the entrance to the inner cove.

(516) **Growler Bay** provides good anchorage near its head for small craft. Several rocks bare at low tide, situated along the south shore near the head of the bay, are the only known offshore dangers once well inside the entrance. The east side of the channel should be favored when approaching the bay with depths as little as 9 feet reported off the entrance in midchannel, and shoals extend all along the east side of **Growler Island** (local name), the island between Growler Bay and Elder Point.

(517) **Elder Bay** (local name) east of Elder Point provides two small-craft anchorages. As both entrance points are foul, a midchannel course should be maintained while entering and while passing on either side of a wooded island near the west shore. Anchorage can be had in about 50 feet southeast of the island and in 40 feet south of the island. The narrow passage that connects with Growler Bay, with a least depth of about 3 feet, is suitable only for small boats. A private pier and summer lodge are located in the east cove of the bay, south of a prominent west point on Growler Island.

(518) **Eagle Bay** provides secure anchorage at its head, but shoals are situated in midchannel on the west side of the bay southeast of an unnamed island about 1 mile west of Elder Point. Rocks awash at low tide extend about 0.1 mile northeast of the northeast side of the unnamed island. Dangerous offshore rocks, nearly awash at low tide are situated about 0.3 mile west of this island. Eagle Bay can be entered by maintaining a course about 200 yards off the west shore south from Elder Point until the lowland opens between Eagle Bay and the next bay east, then steering directly southwest for the head of the bay, where anchorage in 5 to 8 fathoms is available. **Eagle Lagoon** connects with Eagle Bay by a very narrow passage that is fouled on its south side by rocks exposed at low tide. Small craft entering at high water slack can find anchorage in depths up to 13 fathoms inside the lagoon.

(519) **Jackson Hole**, about 1 mile west of Eagle Bay, appears to be clear of offshore dangers and has depths ranging from 3¼ fathoms in its narrow entrance to 16 fathoms inside at midchannel.

(520) **Campbell Bay**, on the northwest side of Glacier Island, has depths of about 3½ fathoms throughout, with a deeper indentation to 15 fathoms on the northeast part of the bay. There is a rock about 0.2 mile southeast of the south entrance and 0.1 mile from the south shore.

(521) **Irish Cove**, on the west-northwest side of Glacier Island, is foul at the head of the bay. A shoal area with a rock is off the point at the north entrance to the bay, extending 0.2 mile west of the point.

(522) **Iceberg Point** forms the west extremity of Glacier Island. A shoal to 2½ fathoms extends 0.3 mile southwest of the point. A ½-fathom rock is 0.8 mile south of the

point and ¾-fathom is 1.0 mile south-southwest of the point.

(523) Between Point Freemantle and Columbia Bay the coast is encumbered by dangerous rocks extending at least 0.2 mile offshore. A shoal with a least known depth of 4¾ fathoms is 0.5 mile south of Elf Point and a 4½-fathom depth is 0.6 mile southeast of the point.

(524) **Columbia Bay**, about 6 miles west of Valdez Arm, is deep except near the shores. A moraine shoal, about 3 miles north of the entrance, completely crosses the bay northwest from the north end of Heather Island to the west shore of the bay. Both east and west ends of this moraine dry at low water; elsewhere, the depths vary from about 2 to 12 fathoms. Crossing the moraine is best approached center bay, staying at least ½ mile from shore. Glacier ice will accumulate along the moraine, causing the upper bay to fill with ice, until weather and tide conditions are such that the ice is discharged into the lower bay and on into Prince William Sound. In 2021, the faces of the glaciers had receded to approximately 13 miles northeast of the moraine and approximately 15 miles northwest of the moriane. The upper bay has depths of 100 to 200 fathoms in the center; the shores are steep and strewn with rocks. Between **Heather Island** and a small island to its south is a narrow, rocky passage, called **Lutris Pass**, which has a maximum depth of 8 feet; due to numerous reefs south and west, this latter island should be given a berth of at least 0.5 mile. Rocks extend 0.2 mile offshore along the northwest shore of Heather Island.

(525) In 2021, the retreat of **Columbia Glacier** now results in at least 6 distinct terminus areas. A large inlet at the head of the bay has opened up but retains large amount of ice. Icebergs are constantly being discharged from the face of the glacier. The upper bay, in front of the glacier, is usually filled with ice preventing boats from approaching the face. Mariners are urged to exercise extreme caution if choosing to navigate within this area. Mariners are warned to keep at least 0.5 mile away from the face, as blocks of ice may be thrown great distances when falling seracs strike the water.

(526) **Glacier Ice:** At any time of the year, but especially in summer and fall months, icebergs and brash ice discharged from the Columbia Glacier may completely fill Columbia Bay and block the passage and coves north of Glacier Island. Particularly dangerous to vessels are low-lying icebergs (growlers) which scarcely show above the water surface. Ice conditions change rapidly and mariners are cautioned to be vigilant at all times. At night and under conditions of low visibility, navigation of these and adjacent waters should not be attempted.

(527) **Heather Bay**, situated east of Heather Island, shoals gradually northeast from 50 fathoms to moraine reefs near its head and provides good protection from wind and heavy glacier ice for moderate-sized vessels. The best anchorage is situated in about 30 fathoms in midchannel, where the bay trends north. The east side of the bay is encumbered by dangerous rocks and shoals. A moraine reef, with a maximum depth of 5¼ fathoms about 0.3 mile off the northeast point of Heather Island, and with rocks awash at low tide further northeast, encloses the head of the bay. Shoals at the head of Heather Bay collect the ice from the glacier and only small icebergs make it into the bay. Transiting the head of the bay is not recommended.

(528) **Emerald Cove**, situated on the southeast side of Heather Bay 1 mile northeast of Elf Point, provides the most secure small-craft anchorage in the area. Depths of 85 feet, muddy bottom, are found in midchannel, and a small bight on its north side has midchannel depths of 33 feet; sunken rocks are located on both the east and west entrance points to the bight. A drying flat extends 0.1 mile off the stream mouth at the east side of the bay. Another anchorage for small craft called **Jade Harbor** is situated south of an island about 2 miles northeast of Emerald Cove. A midchannel course should be followed when entering due to rocks along both shores; once inside, good anchorage is available in 4 to 5 fathoms. A shoal extends about 0.2 mile off a small river of good water that enters the head of the cove.

(529) The northeast corner of Heather Bay is shoal, and even small launches should not proceed north of a group of small islands and rocks situated on the east shore. Fishermen occasionally anchor in good weather in the passages on either side of the largest of the islands while visiting nearby lakes.

(530) **Granite Cove**, situated on the west side of Columbia Bay, has maximum depths of about 1 fathom, rocky bottom, in midchannel in the passage north of the entrance island. Once inside, the cove has depths up to 4 fathoms. Due to the shallow entrance and frequency of glacier ice, this cove is little used as an anchorage.

(531) The coast between Granite Cove and **Flent Point** is shoal. A reef with a least depth of about 1 foot is located 0.2 mile east of Flent Point and the beach south of the point is also foul. Vessels are advised to maintain a distance of at least 0.3 mile off these shores.

(532) **Long Bay**, 3.5 miles west of Columbia Bay, extends in a north direction for about 6 miles and at its head divides into two arms, each about 2 miles long. There are numerous islands and rocks that bare at various stages of tide. The bottom is very broken. Secure anchorage with good holding ground is found in 7 to 10 fathoms east of the island located in the center of the west arm, about 1.4 miles north-northwest of Schrader Island. Passage to the anchorage is midchannel east of Schrader Island then north of two small islets north of Schrader Island, avoiding the rock and shoaling just north of each islet.

(533) **Useless Cove**, which indents the east shore of Long Bay, is reported to be foul. One mile northwest of Useless Cove are numerous dangerous rocks that extend as much as 0.4 mile offshore. Other rocks foul the east and west shores of Long Bay, and a midchannel course is recommended. south, west and north of **Schrader Island**, situated near the center of Long Bay, foul ground is located between a small wooded island and the mainland. The northeast extremity of Long Bay appears to be deep in midchannel until about 1 mile of the head, where the

bottom rises abruptly to a shoal with depths of less than 3 feet.

(534) Moderate-sized vessels find good anchorage in 8 to 12 fathoms, mud bottom, in **Buyers Cove** just west of **Slipper Point**, situated off the west entrance point to Long Bay. There are shoals from about 1¼ to 4 fathoms in the entrance to Buyers Cove. The 1¼-fathom depth is at 60°55'04.1"N., 147°16'21.5"W. Commercial fishermen use the cove as a transfer point. Just west of this cove is **Eickelberg Bay**, about 2 miles long, with depths of 10 feet, possibly less, near the middle of the entrance.

(535)

Naked Island to Long Bay

(536) The northwest part of Prince William Sound has long inlets and fiords, most of which are very deep. The shores are generally bold and wooded, and rise abruptly to lofty peaks, especially near the heads of the fiords. Spectacular valley glaciers descend into the heads of the fiords and discharge large quantities of icebergs, which may completely block the upper channels, especially in the spring months.

(537) The bottom of the entire area is a bluish-gray glacial silt of very fine texture and often quite sticky even though the deposit is only a few inches thick over the rock. In selecting an anchorage, care should be exercised to determine the true character of the bottom, for it is often difficult to get an anchor to hold on the underlying rock, even though the sounding lead shows a sticky bottom.

(538) **Naked Island**, **Peak Island** and **Storey Island**, near the center of Prince William Sound, form a group about 8 miles long, north-south, and about 6 miles wide. They are high and wooded to the summits.

(539) The bottom in the vicinity of the islands, including the passages among them, is rocky and very broken. As a measure of safety it is advisable for vessels, especially large ones, to avoid areas with depths less than about 20 fathoms in the vicinity of the islands and to avoid the passages between them.

(540) It is safer for vessels to keep in the deeper part of the passage between Naked Island and Smith Island, preferably between the 50-fathom curves.

(541) The best anchorages are in the south part of **McPherson Bay** on the north side of Naked Island in 20 to 30 fathoms for large ships and in the east bight of this bay in 10 to 20 fathoms for vessels up to 500 tons. The bottom is rock and mud. The bay also serves as a mooring station for oil spill response barges in the summer.

(542) Small craft can anchor in the small bight on the north side of Naked Island and in the small bight on the southwest side of Peak Island. They may also anchor in the bay on the north side of the east part of Storey Island with protection from all winds except north. Anchorage in 6 to 10 fathoms on the east side of Naked Island affords protection only from the north and west.

(543) **Bass Harbor**, on the south side of Naked Island, offers secure anchorage in 20 fathoms, mud bottom, about 0.4 mile west of the entrance to a small unnamed cove on its east side. The anchorage is open to south winds, and a slight swell makes in during heavy south weather.

(544) **Outside Bay**, on the southwest side of Naked Island provides good anchorage, except in strong west winds, for small vessels in the first bight southwest of the head of the bay in 3 to 10 fathoms, mud bottom. The bay also serves as a mooring station for oil spill response barges in the winter.

(545) **Cabin Bay**, on the west side of Naked Island, offers some protection from east winds for vessels up to 500 tons, but the bottom is broken and not ideal holding ground. Small vessels can find protection from west winds in the head of the south arm in 5 to 7 fathoms, mud bottom. A ¾ fathom sounding is in the middle of the entrance to the south arm.

(546) **Fairmount Island**, 7.5 miles north of Storey Island, is high. Buildings of a former fox farm are on the gravel beach on the southwest side but they are not prominent. The channel between the island and the mainland is about 0.6 mile wide at its narrowest part but has numerous rocks that bare at various stages of the tide; passage should not be attempted without local knowledge. Foul ground, which includes **Outpost Island** and **Little Fairmount Island**, extends about 2 miles from southeast through south-southwest of the south shore of Fairmount Island. Use extreme caution when navigating near these islands.

(547) **Wells Bay** (60°53.5'N., 147°28.5'W.) is a large bay just east of Unakwik Inlet and separated from it by a narrow peninsula. The bay extends north about 8 miles to a forked head and is about 2 miles wide at the mouth and narrows to 0.6 mile about 4 miles north of the entrance. In 1993, it was reported that the entrance to the bay was impeded by two shoals. A 4¼-fathom shoal is located about 0.7 mile east of the west shoreline in about 60°56'04"N., 147°28'29"W. A 2-fathom shoal was reported to be in about 60°55'51"N., 147°29'31"W. Small boats may anchor in the two small coves along the east shore of the bay. **Granite Bay**,1.3 miles from the mouth, extends east-northeast about 2.0 miles and is about 0.3 mile wide at the entrance. A constricted passage about 100 yards wide is about 1 mile from its head with numerous rocks and shoals. Caution is advised. The sides are usually bold. **Cedar Bay**, 2.5 miles from the mouth of Wells Bay, extends northeast about 3.5 miles and averages 0.5 mile in width; an island near its head almost closes the upper part of the bay.

(548) A group of islands and bare rocks between Granite and Cedar Bays extends west past the center of Wells Bay. A prominent point juts out about 0.5 mile on the east side of this bay 1.3 miles north of the entrance; an island is on the southeast side of the point. Temporary anchorage for moderate-sized vessels may be had about 0.2 mile north of the point and 0.2 mile east of the west shore in 17 to 20 fathoms, mud bottom. The entrance to the bay is deep. A 2-fathom shoal is in 60°55'51.5"N., 147°29'31.2"W.

(549) **Unakwik Inlet** has its entrance 6 miles west of the west point of Glacier Island, 2 miles west of Wells Bay.

The inlet extends north about 18 miles and averages 1.5 miles in width, narrowing to 0.5 mile at its north end at **Meares Glacier**, which discharges large quantities of small icebergs. Numerous rocks and islets are situated off the east and west shores; in midchannel, excepting the dangerous shoal off Jonah Bay described below, the inlet's depth gradually diminishes from over 170 fathoms at its south end to 70 fathoms near the glacier.

(550) **Olsen Island** is situated on the west side of the entrance to Unakwik Inlet. A rock awash at low water is 0.6 mile east of the island and a group of rocks are situated 0.4 mile off its northwest side; the passage between the island and these rocks is foul. Many rocks foul the passage between Olsen and a small island southwest; rocks and shoals extend a mile or more south of this latter island. The passage between Olsen Island and the mainland is used by small vessels. A course slightly west of midchannel is recommended, due to numerous rocks on both sides.

(551) **Olsen Cove** provides anchorage for small craft in 40 to 60 feet of water near the center of the basin. Sunken rocks extend 300 feet from the north shore just outside of the entrance narrows, which has a least depth of 14 feet. Once inside the narrows, a course slightly south of midchannel should be maintained to avoid rocks situated about 400 feet offshore midway between the two north points. A sunken rock is also located about 300 feet west of the south entrance point. The main basin appears to be clear of danger with the exception of shoals and a drying rock that block the northwest extremity of the cove.

(552) **Mueller Cove**, 1 mile north of Olsen Cove, affords good anchorage for small craft near its south shore just west of the two small wooded islets marking the south entrance point. Depths shoal gradually from 25 to 8 fathoms, sand and gravel bottom. This anchorage is exposed to the northeast. In 1993, there was a 3½-fathom shoal at the entrance at about 60°53'18"N., 147°36'27"W. and the northwest end of the cove is foul ground.

(553) **Siwash Bay**, on the west side of Unakwik Inlet about 6 miles north of Olsen Island, affords excellent anchorage in 10 to 15 fathoms, mud bottom, about 0.2 mile west of the entrance island. This bay is about 2 miles long and 0.5 mile wide and has a wooded island near the south shore at the entrance. The deep channel is to the north of the island. Entering on a midchannel course the depths shoal rapidly to 10 fathoms just north of the island, continuing at that depth until well inside. Sheltered from all directions, the anchorage appears suitable for large vessels.

(554) **Jonah Bay**, on the west side 8 miles north of Olsen Island, is crescent shaped and about 2.5 miles long. A glacial stream discharges at its head. The entrance is narrow and nearly blocked by a small island. The best water is south of the island. Recommended passage is at high water. In 1993, depths ranged from ½-fathom in the entrance to 14 fathoms inside the bay.

(555) A dangerous moraine bar completely crosses Unakwik Inlet just north of Jonah Bay. A low, grassy islet, on the moraine bar and difficult to observe in thick weather, is situated approximately one-third of the channel width from the east shore to which it is connected by drying rocks. The deepest channel crossing the moraine bar is about 0.1 mile west of the islet in about 61°00'53"N., 147°33'24"W., with a least depth of 5¾ fathoms. Shallow water extends about 0.5 mile east-southeast from the north entrance to Jonah Bay and well offshore. A fish hatchery and fish pens are located in a cove on the east side of the inlet, just south of the moraine bar.

(556) On the east side of Unakwik Inlet, about 10 miles north of Olsen Island is a series of small coves known collectively as **The Cow Pens**. A small ragged island lies about 0.5 mile offshore.

(557) **Eaglek Bay**, midway between Unakwik Inlet and Esther Passage, is a large irregularly shaped bay extending north about 7 miles. The south half is about 2.5 miles wide and the north half about 1 mile wide. Two coves are on the west side; each extends west for about 1.5 miles. One large and several small coves are on the east side. The shores are extremely ragged and there are many wooded islets, bare rocks and rocks awash. The large cove on the east side has numerous good anchorages for small craft. Caution is advised when entering the bay, to avoid the charted rock at midentrance and also because of the irregularity of the bottom. In entering, the best water is 0.3 mile west of the small prominent wooded islet 0.5 mile southwest of **Point Pellew**.

(558) **Axel Lind Island**, 2.5 miles south-southwest of the entrance to Eaglek Bay, is high. The buildings of a fox farm are prominent on a stretch of gravel beach on the north side. Passage to the north is deep, but there are several off-lying dangers. In 2002, a rock that uncovers at low tide was reported to be at 60°48.7'N., 147°44.3'W. Fishing craft use this passage and the one north of Bald Head Chris Island when bound for Port Wells via Esther Passage. In 1993, the passage north of Bald Head Chris Island was 71 fathoms deep, 0.4 mile north of the island. There is shoaling to 2¼ fathoms about 0.3 mile off the southwest shore.

(559) **Kacuuqaq Bay**, 1 mile east of Esther Passage and 1.5 miles north of Bald Head Chris Island, extends north-northeast 2 miles and averages 0.5 mile in width. Its east side is irregular, with numerous islands and rocks baring at various stages of the tide. The west side has no visible dangers and is unbroken except for small **Papoose Cove** about midway in. The cove affords excellent anchorage for small craft in 8 to 10 fathoms, sticky mud bottom. Directly opposite Papoose Cove is another cove, the middle of three on the east side, that affords excellent anchorage with good holding ground for small craft in 8 fathoms.

(560) **Lone Island**, about 3 miles east of Perry Island and 5.5 miles south of Axel Lind Island is wooded, comparatively level and high. Foul ground extends nearly 0.5 mile north. Foul ground extends 1.3 miles south of the group to two prominent rocks about 5 to 10 feet high. A 3½-fathom shoal 1.4 miles south of the island is marked

by a lighted bell buoy. A bank with a least depth of 3½ fathoms is between the shoal and the island.

(561) **Dutch Group** consists of several wooded islands and bare rocks 4.3 miles north-northwest of Lone Island, the largest having elevations up to 150 feet. Foul ground extends 1.3 miles south of the group to two prominent rocks about 5 to 10 feet high. An abandoned white building with a yellow roof is on the large north island of the Dutch Group and is prominent from offshore.

(562) **Fool Island**, 3 miles west of the Dutch Group, is wooded and about 50 feet high. A rock that uncovers is 0.3 mile south of Fool Island.

(563) **Egg Rocks** are prominent bare rocks 1.5 miles west-northwest of Fool Island.

(564) **Perry Island**, in the northwest corner of Prince William Sound, is wooded to a height of about 1,000 feet. It is prominently marked on its northeast side by a round peak, the summit of which is small, bare and dome shaped. The bays indenting the island are anchorages for small craft only because of the foul, rocky and broken bottom.

(565) **Perry Island Light** (60°39'17"N., 147°55'57"W.), 35 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southernmost point of the island. A rock, 14 feet high, is about 150 yards south of the light. A rock awash is 0.4 mile northwest of the light.

(566) Foul ground extends 0.5 mile east from the east end of Perry Island at **Billings Point** and nearly 1 mile southeast and south from the southeast point of the island.

(567) **South Bay** is on the east side of Perry Island Light. Good anchorage is available for moderate-size vessels in 10 to 24 fathoms, sand and mud bottom, in the cove at the head of the bay. When entering, avoid the rocks that extend almost 0.2 mile from the east side of the entrance to the cove. An oyster farm is near the head of the cove.

(568) **East Twin Bay**, indenting the north side of Perry Island, has anchorage for small craft near the center of the bay, about 0.8 mile from the head in 13 fathoms with a soft bottom. A midchannel course should be followed until a prominent rock about 20 feet high, near the center of the bay, bears south approximately 0.2 mile. The portion of the bay beyond the rock is navigable in spots, but should be avoided because the area is foul.

(569) **West Twin Bay**, on the northwest side of Perry Island, is entered mid-channel, avoiding the chain of islands and foul ground extending for over a mile from the point of land on the west side on the entrance. Small craft entering should favor the northeast side until past the narrow area about 1 mile from the head of the bay, and then favor the southwest side, passing west of a rock about 15 feet high, near the middle of the bay 0.8 mile from the head. A 1½-fathom shoal exists just north of the narrow section approximately 0.1 mile from the point of land protruding northeast from the west shore.

(570) From the point on the west side of entrance to West Twin Bay, a chain of islets and foul ground extends north for over 1 mile.

(571) Anchorage is available in the bay for mid-sized vessels in 5 to 15 fathoms of water, mud bottom, in a bight about 0.7 mile south of the west point and about 0.1 mile north of the gravel spit extending from the east shore and east of the rock in the middle of the bay. The area south of the gravel spit is shallow and rocky.

(572) **Perry Passage** is between Perry Island and Culross Island, 2.5 miles to the west. **Wells Passage**, between Perry and Culross Islands on the south and Esther Island on the north, is over 2 miles wide. The two passages have depths of 100 to 250 fathoms. Caution should be exercised when approaching or departing the east end of Wells Passage. Numerous islands, islets, rocks and shoals extend east and southeast for about 5 to 9 miles.

(573) **Esther Island** is mountainous, wooded to a height of about 1,000 feet, and the summits are bare rocks. The peak on the southeast point of Esther Island, and the sharp twin peaks on the southwest point, are prominent. **Point Esther Light** (60°47'08"N., 148°06'01"W.), 31 feet (9.5 m) above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest side of the island. Three bays are between the light and Esther Passage. **Esther Bay**, the easternmost, is 3.5 miles east of the light on Point Esther and extends north about 2 miles. The entrance, 0.7 mile wide, is partly blocked by several wooded islets, bare rocks and rocks awash. The interior of the bay is dotted with islets and rocks.

(574) **Quillian Bay**, the middle bay, 1.3 miles east of the light, extends 1.7 miles north-northeast and is about 0.2 mile wide. The entrance is constricted to a width of 0.1 mile. An islet is 0.7 mile above the entrance and two rocks awash are toward the head of the bay. The shores are steep-to.

(575) When transiting the bay from south, vessels are advised to stay midchannel between the easternmost islet and the east shore. Continuing north from the islets, the bay widens to 0.4 mile, average depth 12 fathoms. A foul area extends approximately 0.1 mile off the east shore at the widest part of the bay. About 0.45 mile north of the islets, the bay narrows to 0.1 mile with numerous rocks extending west from the east shore. Vessels should stay within 50 yards of the west shore until the bay starts widening again. Continuing north to the head of the bay, vessels should favor for the west shore. Average depth in the area is 3½ to 5¼ fathoms. The entrance to the lagoon northwest of the head of the bay is blocked by a rock.

(576) **Lake Bay**, the westernmost bay, is 0.7 mile east of the light, extends 1.2 miles northwest and is about 0.2 mile wide. Fishing craft find indifferent anchorage near the east shore southeast of the narrowest part where the bay widens to its maximum of 0.3 mile. Rocks awash extend about 110 yards southeast of the point forming the northwest extremity of the anchorage bight. A submerged rock is 0.3 mile from the head of the bay. In general, the shores are steep-to and depths are too great for convenient anchorage. About 0.5 mile from the head on the east side is a freshwater stream that discharges from **Esther Lake**. A fish hatchery and fish pens are near the stream.

(578)

(577) **Esther Passage** separates Esther Island from the mainland. The south entrance, 7.5 miles east of Point Esther and 1.8 miles northwest of **Bald Head Chris Island**, is about 1.5 miles wide. The entrance is flanked by two wood islets. A rock awash at about half tide is about 0.3 mile east of the west islet. The bottom of the entrance is extremely irregular, varying from 3¾ to 60 fathoms. Once inside, the water deepens rapidly to more than 130 fathoms for 2 miles or more. The passage trends northwest for about 10 miles and connects with Port Wells about 8.5 miles north of Point Esther and 3.5 miles south of Golden; it is sharply constricted at its midpoint. The least depth in the constricted channel is 3½ fathoms at 60°53'39.6"N., 147°56'59.7"W. The south half is about 0.7 mile wide and the north half, 400 to 250 yards wide. The passage is clear except for the 3½ fathom area previously mentioned and a dangerous submerged rock 200 yards northeast from the south shore near the bend 1 mile east of the west entrance to Esther Passage. The best way to avoid the submerged rock is to hold well into the north half of the channel when swinging on the turn. Fishing craft use the passage regularly.

(579) **Esther Rock**, 1 mile west of **Point Esther**, is 15 feet high and sparsely covered with grass.

(580) A reef, bare at lowest tide, is reported to extend about 1 mile off the south point of **Granite Bay**, on the west side of Esther Island.

(581) **Culross Island** is mountainous and wooded to a height of about 1,000 feet. **Culross Island Light** (60°44'50"N., 148°06'49"W.), 40 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the northeast point of the island.

(582) **Culross Bay**, on the north side of Culross Island, has good anchorage in 30 fathoms with limited swinging room about 1 mile inside the entrance just southwest of a prominent point on its northwest side. The center at the head of the bay shoals to 3¾ fathoms 0.6 mile southwest of the prominent point and 0.1 mile west of a ledge containing two islets and several rocks extending 0.1 mile north from the south shore. The bay is open to northeast winds, but no swell makes in, and it is not subject to williwaws.

(583) **Hidden Bay** is on the east side of Culross Island, 3.0 mile south of Pt. Culross. The northwest arm of the bay is bounded by three small islands to the north and one large island to the south. The entrance to the northwest arm has average depths of 8 to 13 fathoms shoaling to 4 fathoms 100 yards south of the center north island. Depths at the head of the northwest arm range from 16 to 22 fathoms.

(584) The long west arm should only be entered by small craft at high tide and slack water. Enter the west arm just south of the largest island, between the largest island and the nearest island south. A faded white cross on the large island marks the entrance. Stay midchannel in 2½ feet of

water as ledges extend off both islands. Continuing west, pass south of the midchannel islet, staying close to the south shore. A large ledge surrounds this islet and extends 75 yards west of the islet. Once past the large island, favor the north shore leaving a group of islands that extend 150 yards north from the south shore to the south. The center of the head of the bay has depths from 27 to 33 fathoms, mud bottom.

(585) **Culross Passage**, between Culross Island and the mainland to the west, is used occasionally by fishing craft and cannery tenders. It is narrow and congested and should be used only with local knowledge. Anchorage is available in midchannel about 1 mile south of the north entrance in about 35 fathoms, mud bottom. No swell makes in, and the area offers protection from all but north weather. The small bay on the east side 1 mile from the north entrance affords good anchorage in 3 to 8 fathoms, mud bottom.

(586) **Goose Bay**, on the east side of Culross Passage 3.5 miles south of the north entrance, is narrow and extends northeast about 1 mile. The entrance narrows to about 100 yards and has a least depth of 3 feet; Goose Bay is recommended for very small boats only. The narrow entrance opens out into a bay with two arms; extensive flats and shoal water are reported in both arms. The cove 0.7 mile south of Goose Bay offers good anchorage for larger vessels in 15 fathoms of water, clay and gravel bottom.

(587) **Long Bay**, on the west side of Culross Passage across from Goose Bay, is narrow and extends southwest about 2 miles. The bay appears clear on the south side of the channel, with depths of about 10 fathoms; however, it shoals rapidly in the vicinity of the small islets at the southwest end of the bay.

(588) It is further reported that anchorage for small vessels can be had in the vicinity of the small islets in 7 to 10 fathoms, fair holding ground. East winds funnel into Long Bay blowing from the northeast with considerable force and gusts; vessels should guard against dragging onto the shoals at the head of the bay.

(589)

Routes

(590) When entering the narrowest part of Culross Passage from the north, small vessels are advised to pass between the westernmost small islet just off the west shore about 2 miles inside the entrance and the west shore. Continue south between the larger island in midchannel and the west shore. A 2¾-fathom shoal is midchannel, 160 yards south of the large island, then shift to midchannel to avoid a shoal extending off the point on the west shore. One mile farther south and off Goose Bay are numerous islands. The channel, with a least depth of 4¼ fathoms, passes to the east of the island.

(591) In entering the passage from the **southward**, give a wide berth to the many dangerous rock ledges and rocks that extend off the south shore of Applegate Island on the east side of the entrance. Considerable current has been observed through this area.

(592)

Port Wells to Yale Glacier

(593) **Port Wells** extends north from Wells Passage along the west side of Esther Island for 13 miles to **Point Pakenham** where it divides into **Barry Arm** to the west and **College Fiord** to the east. Except for the two submerged terminal moraines extending southwest and southeast from Point Pakenham across the entrances to Barry Arm and College Fiord, Port Wells is deep throughout with 100 to 200 fathoms except near the shores.

(594) **Pigot Bay**, on the west side of Port Wells just north of Passage Canal, has a rocky shore except at its head where sand and mudflats extend offshore about 0.4 mile and bare at low water. The bottom in Pigot Bay is grey clay with good holding qualities. Depths near the entrance to Pigot Bay are too great for anchoring, but good anchorage is available for vessels near the head of the bay in 16 to 30 fathoms. A small area about 1.1 miles from the head of the bay affords good anchorage in 13 fathoms but is difficult to find because of its limited extent. A similar area 0.7 mile from the head of the bay affords excellent anchorage for small vessels in 13 fathoms. Good anchorage is available for small boats in the northeast corner of the bay and in **Ziegler Cove**, on the north side of the bay immediately inside the entrance.

(595) The ruins of an abandoned logging camp are at the head of Pigot Bay, and an abandoned mine is a short distance up the river, which empties into the bay. A Forest Service cabin is at the west head of the bay.

(596) **Pirate Cove**, on the west side of Port Wells, 3.5 miles north of Wells Passage, is exposed to northeast winds. There is a 2-fathom rock shoal about 350 yards northeast of the south entrance point. A rock, in the north part of the bay with a 2¾-fathom shoal just to the south, is about 350 yards offshore and 550 yards northwest of the south entrance point.

(597) **Hummer Bay**, about 1 mile north of Pirate Cove, with depths of 22 fathoms, offers protected anchorage but has numerous islands, islets, submerged reefs and rocks. Entering the bay requires caution and local knowledge.

(598) **Bettles Bay**, on the west side of Port Wells, about 2.5 miles north of Hummer Bay, is free from dangers in midchannel. A 3-fathom shoal extending 0.2 mile north from the south entrance is in 60°55'06"N., 148°16'00"W. Good anchorage is available in 25 fathoms, mud bottom, in mid-bay 1 mile above the entrance, and in 22 fathoms, mud bottom, in the northeast corner of the bay. A stream and an extensive delta from a glacier are at the head of the bay. Vessels should approach with caution because depths rise abruptly from 20 fathoms to 1 fathom. An abandoned mine building is on the hillside northwest of the stream.

(599) **Hobo Bay**, on the west side of Port Wells just north of Bettles Bay, is crossed at the entrance by a bar that is

(612)

covered about 2½ fathoms at each end, over 5 fathoms midchannel. Vessels entering should stay midchannel on a northwest course. Several rocks, bare at low water, are along the south shore of the bay. A grassy rock is close offshore near the head of the bay.

(600) About 1.5 miles northeast of Hobo Bay is a prominent wooded point connected to shore by a bare gravel bar; from a distance, this point appears as a lone wooded islet.

(601) **Harrison Lagoon**, a small shallow lagoon, is about 2 miles north of Hobo Bay, at the west entrance point to Barry Arm. A Forest Service cabin is located at the lagoon.

(602) **Golden**, 3.5 miles southeast of Point Pakenham, is an abandoned mining camp on the east shore of Port Wells and forms the southeast entrance point to College Fiord. Vessels can anchor 200 to 300 yards south of the little island off Golden in about 20 fathoms, rocky bottom. It is regarded as a poor anchorage and it is probable that the anchor will not hold with strong winds drawing down Port Wells. The area between the island and the shore uncovers.

(603) The northwest entrance to Esther Passage, 4.5 miles south of Point Pakenham, connects Port Wells with Wells Passage and is described earlier.

(604) **Granite Bay**, 2.5 miles southwest of Esther Passage, provides good anchorages for small craft; do not enter without the aid of a detailed chart. Rocks awash, 500 yards offshore, are 0.5 mile southwest of the islet forming the south entrance point of the south arm.

(605) **Barry Arm**, at the head of Port Wells, is the west of two arms extending north. A submerged moraine completely crosses the south entrance from Harrison Lagoon to Point Pakenham with dangers extending off both ends. A low spit extending well off the west shore has depths of less than 2 feet, ¾ mile from shore. Mariners should stay midchannel, 1.5 miles from the west shore in 13 to 18 fathoms. Barry Arm is deep and free of obstructions north to Point Doran, about 4.5 miles northwest of Point Pakenham. **Caution:** The State of Alaska has indicated that a potential landslide-caused tsunami may occur in Barry Arm. Ongoing monitoring activities are occurring. The geologic makeup of the area is similar to where two previous landslide-caused tsunamis occurred, in Lituya Bay (1958) and Icy Bay (2015), both causing extremely large but localized tsunamis. Mariners should maintain vigilance when in Barry Arm or nearby waters and be prepared to depart the area if any unusual geologic activity or surface conditions are observed, such as rockfall or unexpected wave behavior or currents. Mariners should use caution when transiting the area due to delays that may occur between the observation and notification of hazards. Additional information is available at *https://dggs.alaska.gov/ba*.

(606) **Harriman Fiord**, 5 miles above the entrance to Barry Arm, extends southwest about 10 miles and is

deep and free of dangers except at the entrance and a submerged moraine around Surprise Inlet. The fiord is usually laden with small bits of glacial ice.

(607) Submerged gravel bars with least depths of between 1 and 9 fathoms extend from **Point Doran** across both Barry Arm and **Doran Strait**, the entrance to Harriman Fiord. Extreme caution should be used in this area when navigating. Gravel bars that uncover extend over 300 yards offshore at the northwest entrance to Harriman Fiord. The preferred channel up Barry Arm, north to **Cascade**, **Barry** and **Coxe Glaciers**, is slightly east of midchannel, 0.6 mile east of Point Doran. The preferred channel from the glaciers to Harriman Fiord is slightly south of midchannel, avoiding a 1-fathom sounding 0.7 mile northwest of Point Doran. The preferred channel from Harriman Fiord to south Barry Arm is 150 yards off Point Doran in about 4 fathoms, avoiding a 10-foot sounding 500 yards northeast of Point Doran.

(608) **Serpentine Cove** on the north shore of Harriman Fiord, 3 miles west of Doran Strait is shallow and almost completely blocked at the entrance by gravel bars.

(609) **Surprise Inlet** on the north shore, 5 miles west of Doran Strait, is about 0.8 mile long leading to **Surprise Glacier**. Shoaling extends out about 0.3 mile along the north shore at the entrance; a midchannel course is recommended. A submerged flat with depths of 10 feet and less extend east from the south entrance point of the inlet. In 2018, severe shoaling was reported near the head of the inlet, just off the foot of Surprise Glacier. Mariners are urged to use caution when navigating this area.

(610) **Harriman Glacier** is at the head of Harriman Fiord.

(611) **College Fiord**, at the head of Port Wells, is the east of two arms extending northeast 16 miles to **College Point** where it divides into **Harvard Arm** to the west and **Yale Arm** to the east. Caution should be exercised when entering the fiord due to a dangerous reef with rocks awash extending 1.3 miles south-southeast from Point Pakenham and shoal water with rocks awash extending as much as 0.8 mile off the southeast shore from Golden north to Coghill Point. Icebergs are common to Coghill Point but rarely extend to Port Wells.

(613) **Coghill Point** on the east shore of College Fiord is about 5.5 miles northeast of Point Pakenham. Anchorage with good holding is 0.2 mile east of the point in about 10 fathoms. The bottom rises quickly from 30 to 3 fathoms. From the head of the bay, a trail leads east-northeast along Coghill River 3.5 miles to a Forest Service cabin.

(614) **Harvard Glacier** closes Harvard Arm about 4 miles northeast of College Point. Over a half dozen glaciers line the northwest shore of the arm and upper College Fiord, with 5 of the glaciers being tidal.

(615) **Yale Glacier** closes Yale Arm about 3 miles east of College Point.

(616)

Point Pigot to Passage Canal

(617) **Point Pigot** is the southeast end of the peninsula between Pigot Bay and Passage Canal. Low valleys extend across the peninsula from Entry Cove and **Logging Camp Bay.** The south end of Point Pigot is a wooded, rocky headland 220 feet high. This headland is joined to the mainland by a sandy neck 6 feet high. **Point Pigot Light** (60°48'03"N., 148°21'25"W.), 25 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the south tip of the point. A rock that bares at lowest tides is 0.8 mile east-northeast of the light. A similar rock is 200 yards west-northwest of the light.

(618) **Entry Cove**, immediately west of Point Pigot, affords good anchorage in 3 to 13 fathoms, soft bottom, with swinging room for one vessel up to 200 feet long.

(619) **Cochrane Bay** empties into the south end of Port Wells opposite Point Pigot. The middle of the bay has depths of 70 to 200 fathoms and the shores are steep-to.

(620)

Anchorages

(621) Anchorage is available in a cove at 60°39.7'N., 148°22.0'W. which is approximately 2 nautical miles northeast of the head of Cochrane Bay. Small vessels should stay approximately 100 yards south of a small islet in the center of the cove to avoid a reef that extends 260 yards north from the south shore. Vessels are advised to stay midchannel, least depth 2 fathoms, at the entrance to the cove. Small vessels can anchor at the junction of the fingers at the head in 3 to 5 fathoms of water, mud bottom. The cove is open to winds from the east, and local knowledge reported the cove freezes in winter. Anchorage for smaller vessels may also be found in the southernmost cove at the head of Cochrane Bay in 4 to 6 fathoms of water, mud and pebbles bottom.

(622) **Surprise Cove** is on the west side of Cochrane Bay 0.5 miles southwest of **Point Cochrane**. The southwest arm of the cove appears clear of dangers with 30 fathoms in the middle decreasing towards the head, near which indifferent anchorage is available in 7 to 15 fathoms mud and pebble bottom. The thin layer of glacial silt over the rocky bottom is poor holding ground. The west arm of Surprise Cove has a restricted entrance and can be entered only by small craft. Small craft are advised to enter the west arm of the cove south of the largest island staying midchannel in 6 to 8 fathoms of water. Continuing west past the large island, the west arm widens to 0.4 mile with average depths of 16 to 21 fathoms in the center, mud and pebble bottom. Nearby is **Surprise Cove State Marine Park**, accessible by boat or float plane only.

(623) **Blackstone Bay** empties into the south side of Passage Canal southwest of Point Pigot. The middle of the bay has depths of 100 to 200 fathoms to **Willard Island**, a large island about 489 feet high near the head of the bay. A rock, bare at low water, is 0.1 mile north of

(626)

Passage Canal and Whittier, Alaska
Image courtesy of Ken Graham/AccentAlaska (2000)

the island. A 7¾-fathom shoal is 0.4 mile north-northeast of the north end of the island. An islet and nearby rocks awash are on the east side of the bay about 3.7 miles inside the entrance at 60°45.8'N., 148°31.7'W. The area between Willard Island and the east side of the bay is constricted by rocky moraine shoal extending from both shores. A narrow channel, with depths of 2½ and 3¼ fathoms, is midway between the shoals. A shoal with two rocks awash at the end extends from the east side of the bay to about 60°42.2'N., 148°36.5'W.; extreme caution is advised. There are no known anchorages in the bay, and ice is rarely seen in the bay.

(624) Depths along the west side of Willard Island range from 4¼ fathoms off the south side to 66 fathoms off the north side. Glacial moraines, with little water over them at low water, extend from both shores of Blackstone Bay to Willard Island midway of the island's length; depths are 2½ to 3½ fathoms in a channel about 0.2 mile from the west shore. Strong localized west winds can occur over the moraine creating standing waves of 2 to 4 feet. **Blackstone Glacier**, and **Beloit Glacier** in the southeast arm, are active and there are generally numerous small icebergs in the head of the bay.

(625) **Passage Canal** has its entrance at the southwest end of Port Wells between Point Pigot and **Blackstone Point**, the north extremity of the peninsula separating Cochrane and Blackstone Bays. The canal trends northwest for 4 miles, then west and southwest about 7 miles.

(627) The principal approaches to Passage Canal and the canal itself offer little difficulty for navigation with the aid of the chart. These waters are characterized by rocky and exceedingly broken bottom. Differences of 50 fathoms between adjacent soundings are not uncommon. As a measure of safety, vessels should avoid areas where abrupt changes are indicated by the chart to depths less than 50 fathoms.

(628) Passage Canal is 1 to 1.5 miles wide, has great depth and is clear except in a very few places near the shores. The shores rise abruptly and are wooded to about 1,000 feet. The higher peaks are bare or snow-covered rock.

(629)

Decision Point to Whittier

(630) **Decision Point**, on the south side of Passage Canal about 3 miles west of Point Pigot, is marked on the north end by **Decision Point Light** (60°48'22"N., 148°27'20"W.), 35 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark.

(631) **Shotgun Cove**, on the south side of Passage Canal 2.5 miles west of Decision Point, has depths through the middle of 21 to 32 fathoms, muddy bottom. The cove rapidly shoals at the narrow parts at the head; approaching

(637)

slowly, a small vessel can select anchorage just above the head of the bay in 15 to 20 fathoms. Several mooring buoys are in the cove used by tug and barges.

(632) The bight on the southeast side of Shotgun Cove is obstructed near the middle by a rock covered ½ fathom. Anchorage with a clear width of 0.3 mile can be had in the northeast part of this bight in 15 to 20 fathoms, mud bottom.

(633) **Trinity Point** is on the south side of Passage Canal 3 miles west of Decision Point. Tiny **Emerald Island** is 0.4 mile west of Trinity Point. A light, 39 feet above water, is shown from a skeleton tower with a red and white daymark on the outer end of the narrow point between Trinity Point and Emerald Island. Small **Emerald Bay** extends southwest from the island. Small craft can anchor just outside the bay in 2½ to 3¾ fathoms of water with mud bottom.

(634) Anchorage in 12 to 18 fathoms, sticky bottom, can be had on **Bush Banks**, which extend 0.3 mile from the south side of Passage Canal at a point 0.7 mile west-southwest from Emerald Island and 3 miles from the head. The least depth is 4½ fathoms at the southwest end of the banks.

(635) Small craft can anchor at the northwest end of the head of the canal in 6 to 12 fathoms.

(636) **Whittier** is on the south side of Passage Canal, 1.5 miles from the head. The town is the terminus for the Alaska Railroad and has a fish processing plant and a U.S. Army fuel depot. The waterfront was greatly destroyed during the 1964 earthquake and the dock facilities were rebuilt in the 1970s. The port handles large numbers of railroad cars, the Alaska State Ferry handles autos and passengers and cruise ships and tour boats bring tourists during the summer.

(638)

Prominent features

(639) In the approach to Whittier, the army tank farm at the head of Passage Canal and the buildings in town are most prominent. The three large buildings in town were built by the army during World War II. The largest is 14 stories high and almost all of the living quarters and most business activities in town are within this building.

(640)

Routes to Whittier

(641) **From the S via Prince William Sound Traffic Separation Scheme** (described earlier in this chapter under Prince William Sound). Depart the scheme north of Hinchinbrook Entrance and set courses to pass 1.5 miles northeast of Smith Island, 1.5 miles north of Point Eleanor Light, 1.5 miles southwest of Perry Island Light, 1 mile northeast of Culross Island Light, 0.5 mile south of Point Pigot Light, 0.5 mile north of Decision Point Light, 0.5 mile north of Trinity Point Light, and thence to Whittier, clearing the south shore by 0.5 mile until up to the waterfront. **Caution:** Mariners are advised to adhere

to the general principles for navigation when entering, departing or crossing a traffic separation scheme. (See **Traffic Separation Schemes**, chapter 1.)

(642) **From the W via Elrington Passage**. Clear the east side of Evans Island by 1 mile, thence 0.5 mile east of Pleiades Light, thence 2 miles east of Crafton Island Light, thence 1.5 miles southwest of Perry Island Light, thence the same as from the south to Whittier.

(643) Vessels from Valdez usually use Perry Passage when going to Whittier.

(644)

Anchorages

(645) Large vessels sometimes anchor clear of the 4½-fathom shoal on Bush Banks about 2 miles northeast of Whittier or in Pigot Bay.

(646)

Currents

(647) The currents have little velocity in Passage Canal.

(648)

Weather, Whittier and vicinity

(649) Whittier is a town located at the southwest end of Passage Canal. It is surrounded by snow-capped mountains and glaciers. Its location in the fjord accounts for weather that is common to both the coastal mountains and the open coast. Portage pass is a natural venturi, which accelerates natural wind passing through. In January, mean temperature ranges from 19°F (-7.2°C) to 30°F (-1.1°C) with 14.3 inches of precipitation, less than half of which is snow. In July, the mean temperature is 49°F (9.4°C) to 62°F (16.7°C) with about 12.5 inches of rain.

(650) The annual snowfall is estimated at about 500 inches (12.7 m) in Whittier with accumulations of 12 feet (3.7 m) during February and March. Avalanches are known to cause major problems in the port by damaging railway equipment and port facilities. Also, a portion of the south shore of Passage Canal is exposed to surge waves generated by avalanches occurring on the north shore.

(651) Generally, winds in Whittier flow from Portage Pass out Passage Canal (south-southwest) or the opposite direction (north-northeast). The wind vector with the greatest impact on Whittier is the south wind that blows off the Whittier Glacier. Such a wind may blow in the 30 to 40 m.p.h. range for considerably long periods.

(652)

Ice

(653) Whittier is a year round ice-free port.

(654)

Pilotage, Whittier

(655) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. Pilots for Prince William Sound are available from the Southwest Alaska Pilots Association (swpilots.com). (See **Pilotage, General** (indexed), chapter 3, for the pilot pickup station and other details.)

(656) Vessels en route Whittier or Valdez can contact the pilot boat by calling "EMERALD ISLAND" on VHF-FM channels 13 and 16, or via landline directly 907-255-0869, 24 hours daily.

(657)

Towage

(658) There is one 600 hp tug in Whittier. In the winter months, October to May, a second 2,000 hp tug is available. Arrangements for their services are usually made through shipping agents.

(659)

Quarantine, customs, immigration and agricultural quarantine

(660) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(661) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(662)

Harbormaster

(663) The Port Director enforces harbor regulations. The office is located at south shore of the small-boat harbor, monitors VHF-FM channel 16, telephone 907-472-2330, FAX 907-472-2472.

(664)

Wharves

(665) There are two deep-draft facilities, a railroad-car barge facility, a ferry dock and a passenger loading dock. Whittier also has a small-boat harbor. Cargo handling equipment arrangements are made with the Alaska Railroad. The Alaska Railroad can be reached by telephone at 907-265-2617 or 907-265-2670.

(666) **DeLong Pier:** at the east end of Whittier; 675 feet of berthing space; 45 feet reported alongside; deck height, 22 feet; receipt of seafood; mooring cruise ships and fishing vessels; 40-ton mobile crane; owned and operated by Alaska Railroad Corp. and the City of Whittier.

(667) **Alaska Railroad Wharf:** In 2002, it was reported that the wharf was in ruin and no longer in use by ships. The railroad car barge facility at the northeast end of the wharf is still in use. The wharf is owned by the Alaska Railroad.

(668) **Prince William Sound Cruises & Tours Float:** Seasonal floating pier for tour boats, located just southwest of the Alaska Railroad Wharf with 20 to 30 feet alongside. The facility is owned by Ciri Alaska Tourism and operated by Prince William Sound Cruises and Tours.

(669) **Alaska State Ferry Terminal:** between Ocean Dock and the cruise float; 200-foot face; 18 feet alongside, deck height, 22 feet. The ferry terminal is owned and operated by the State.

(670) **Ocean Dock**, just west of ferry terminal; 125-foot face; 200 feet berthing space; 27 to 30 feet reported alongside; deck height, 15 feet; mooring excursion vessels. The dock is owned by the State and operated by the City of Whittier.

(671) **Whittier Small-Boat Harbor**, 0.25 mile west of the ferry terminal, is used mostly by pleasure craft and some fishing vessels. The harbor has about 334 slips; the **harbormaster** assigns berths. The harbormaster's office monitors VHF-FM channel 16.

(672) A floating breakwater, marked by a light on its west end, restricts the entrance to less than 80 feet. A rock awash is near the center of the entrance, closer to the southwest side. In 2003, 15 feet was available alongside the piers.

(673) **Whittier Passenger Loading Dock** is just west of the entrance to Whittier Small-boat Harbor and is used by small tour boats and fishing vessels. The dock is marked by private lights. Caution: significant shoaling occurs at the west end of dock from Whittier Creek, 40 yards west.

(674) A floating dock, just west of the mouth of Whittier Creek, is available for docking cruise ships. A small-boat harbor is between the dock and the shore.

(675)

Supplies and repairs

(676) Gasoline, diesel fuel, water, electricity, dry storage, launching ramps, tidal grid and a 30-ton boatlift are available. The harbor is owned by the state and operated by the city. Restaurants and two small groceries are in town. Repair services and machine shop are available.

(677)

Ferries

(678) The Alaska State Ferry provides daily stops year round with connections to Valdez and Cordova.

(679)

Communications

(680) The Auton Anderson Memorial Tunnel makes Whittier accessible by automobile and railroad. The Alaska Railroad transports automobiles to the Seward-Anchorage Highway and has passenger service to Anchorage daily in the summer and biweekly in the winter. Charter air service is available in the summer.

(681)

Port Nellie Juan to Seal Island

(682) **Port Nellie Juan** extends 23 miles southwest from its entrance between Culross Island and the mainland to the south. **Applegate Island**, on the northwest side of the entrance, is low, flat and wooded. **Port Nellie Juan Light** (60°35'52"N., 148°06'07"W.), 23 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the north end of the point on the southeast side of the entrance.

(683) Port Nellie Juan is divided into three right-angled reaches into which many glaciers discharge. The innermost reach is **Kings Bay**. MMidchannel depths of more than 100 fathoms are available to near the head. In general, the reaches are deep close to the shores, which are indented by numerous bays and small inlets.

(684) Areas in front of the glaciers should be approached with caution. The moraines are often very large, and the water over them shoals rapidly to 1 fathom or less. This is particularly true at the head of Kings Bay where the water is shoal 0.2 to 0.5 mile from shore, then deepens rapidly to more than 50 fathoms.

(685) **McClure Bay**, the first of two bays that indent the southeast shore of the first reach, is deep and narrow and extends south for about 5 miles. It is from 80 to 100 fathoms deep, free from hidden dangers and has bold shores. The upper part of the east arm at the head of the bay is foul. Vessels requiring little swinging room may anchor at the entrance of this arm in 18 fathoms, mud bottom. The west arm is clear in midchannel and affords shelter for small vessels.

(686) Ruins of a cannery and wharf are on north side of a cove on the east side of McClure Bay near the entrance. A rock, with little water over it, is on the north side of the cove close south of the wharf ruins. A submerged rock is close off the south shore of the cove just inside the entrance. The cove accommodates only small craft.

(687) **Blue Fiord**, the second bay, is at the head of the first reach and extends south about 4 miles to the moraine of **Ultramarine Glacier**. The shores of the fiord are steep-to and depths in midchannel are 33 to 100 fathoms.

(688) **Derickson Bay**, **Deep Water Bay** and **Greystone Bay**, are three prominent bays along the south shore of the middle reach of Port Nellie Juan. Along the north shore of this reach are long and narrow East Finger and West Finger Inlets, with Shady Cove midway between them.

(689) **Nellie Juan Glacier**, at the head of Derickson Bay, is the most active glacier in the area and the bay is often filled with small icebergs.

(690)

Anchorages

(691) Because of the great depths, there are few anchorages in Port Nellie Juan. Indifferent anchorage for large vessels can be found in the bight just inside the point on the southeast side of the entrance. The south of the two coves in this bight has a wide, even, gravel shore that is excellent for beaching a small vessel.

(692) Another indifferent anchorage is available for vessels up to 250 tons 0.7 mile southwest of **Division Point** between Blue Fiord and Derickson Bay. Depths of 18 fathoms can be found 300 yards off the entrance to a small indentation. The thin layer of mud over rocky bottom is only fair holding ground.

(693) Small craft can find indifferent anchorage in some of the bights on the northwest side of the first reach. The best of these is in the area west of **Mink Island** where the depth is about 15 fathoms, mud bottom. Good anchorage is available for vessels up to 300 tons in the upper end of West Finger Inlet in 15 fathoms and in Shady Cove, 14 fathoms in the middle and 8 fathoms near the head, mud bottom.

(694) **Main Bay**, 4 miles southeast of Port Nellie Juan, is deep and generally clear away from the shores but affords no anchorage. Foul ground extends both entrance points. A fish hatchery is at the head of the bay.

(695) **Falls Bay**, 2 miles southeast of Main Bay, has a small cannery in the northern extension, where small boats and floats were anchored in 1996. The remainder of the bay affords no anchorage and is open to the prevailing northeast weather. The main part of the bay is clear and deep, but the entrance is restricted by rocks that protrude into the mouth allowing a narrow 0.2 mile width, in which the least found depth is 12 fathoms.

(696) **Crafton Island** is 1 mile long and wooded. At its north end are rocky bluffs about 100 feet high, while its south part is lower and has sandy beaches in places. Two low islets with sandy beaches are off its south end. **Crafton Island Light** (60°30'42"N., 147°56'04"W.), 70 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark at the northeast end of the island.

(697) Crafton Island is surrounded by foul ground to a distance of about 0.5 mile on its east and south sides, where no sounding has been done. An exceedingly broken area extends over 2 miles southeast from the island. Rocks, bare at about half tide, are 1 mile southeast from the south end of the islets. Vessels should avoid all broken areas in this vicinity where depths less than about 50 fathoms have been found.

(698) The passage west of Crafton Island is foul along the shore of the islets, and three rocks which uncover are in the middle of the south entrance. This passage should be used only by small craft, proceeding with care and preferably at low water. The channel favors the west shore from the south entrance until abreast the middle of Crafton Island. A 4-fathom shoal is 0.1 mile east of the west shore point opposite Crafton Island.

(699) The clearer channel to Eshamy Bay follows the shore north from Point Nowell and is about 0.8 mile wide. Differences of 50 fathoms between adjacent soundings are not uncommon in this locality. Foul ground extends 350 yards north, and rocky broken ground of 14 to 9 fathoms, or less, extends 0.6 mile north from the south point at the entrance of Eshamy Bay.

(700) **Eshamy Bay**, between Point Nowell and Crafton Island, affords anchorage only for small craft in 8 to 11 fathoms, in the small cove back of the islands and rocks in the southeast corner of the bay. The better entrance is through the middle of the deep narrow channel between the small islands and the east shore. **Eshamy Lagoon** extends west from Eshamy Bay, but its foul entrance with strong currents makes it inaccessible for strangers.

(701) **Point Nowell**, 4.5 miles south from Crafton Island Light, is a small wooded hook, about 50 feet high, back of which the land rises abruptly. The cove, formed by the hook, is about 300 yards in diameter and apparently clear and affords anchorage for small craft in about 8 fathoms.

(702) **Knight Island**, on the west side of Prince William Sound, is 22 miles long and very rugged, the peaks rising to 3,261 feet. It is wooded to about 1,000 feet, and above this is grass covered. Disk, Ingot and Eleanor Islands are mountainous and sparsely wooded islands that extend 6 miles north from Knight Island to Point Eleanor, the north end of the group.

(703) **Eleanor Island** has bluff, rugged shores. Broken ground extends 0.4 mile north and northwest from **Point Eleanor**, the north point of the island. **Point Eleanor Light** (60°34'51"N., 147°33'47"W.), 45 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the point. **Northwest Bay**, on the northwest side of Eleanor Island, is deep and clear. Anchorage for small vessels is available in the southwest arm of the bay, about 0.4 mile from the head in about 20 fathoms.

(704) Near the east point of Eleanor Island, 1.8 miles south of Point Eleanor, is a rocky islet with a few trees and with foul ground on its shore side. A bare rock 0.2 mile south of the islet should be given a berth of 0.3 mile. A group of three prominent bare rocks, close together and about 12 feet high, is 3 miles south-southeast of Point Eleanor in 60°31'57"N., 147°32'30"W. Between them and Eleanor Island is broken ground with depths of 3½ to 7 fathoms. A bare rock about 5 feet high is 0.6 mile southwest of the group; it should be given a berth of over 0.4 mile from the southeast.

(705) **Upper Passage**, separating Eleanor and Ingot Islands, is generally deep and suitable for small craft. One mile southeast of north entrance is a 2½-fathom depth, position approximate, about 150 yards from a point on Ingot Island. **Block Island**, 1 mile long with its north end joined at low water to Eleanor Island, narrows the south part of the passage to about 400 yards. On the northwest point of Block Island is an underwater rock, position approximate, reported in 1990. About 600 yards southeast of Block Island is a ledge with 5 fathoms over it, possibly less.

(706) **Entrance Island**, high and wooded, is 0.3 mile south of Eleanor Island and on the north side of the south approach to Upper Passage. It is surrounded by deep water. A submerged rock, reported in 1990, is 0.3 mile south of Entrance Island. Foul ground extends 0.4 mile northeast of Entrance Island.

(707) **Sphinx Island**, on the south side of the south approach to Upper Passage and 0.4 mile east of Ingot Island, is high and wooded and surrounded by deep water. About 0.9 mile southeast of Sphinx Island is a rocky area with a least known depth of 18 fathoms.

(708) **Ingot Island** is between Upper and Lower Passages. A prominent high wooded island is 0.2 mile off the northwest end of Ingot Island. Two small bare rocks, close together and nearly awash at high water, are 0.5 mile southeast from the south point of Ingot Island. Broken ground extends 0.5 mile southeast from the rock to a ledge covered 3¾ fathoms.

(709) **Disk Island** is separated from Ingot Island on the east by **Foul Pass**, a narrow passage blocked by reefs. A landlocked bay with two narrow entrances makes into the west side of the island. An excellent anchorage for small craft can be found in the bay in 5 to 13 fathoms, mud bottom, with good shelter from all winds. Enter through

the south entrance which is reported to be about 80 feet wide and has a least depth of 3 fathoms. It is reported that the north side of the south entrance should be favored to avoid a ledge that is submerged at high water and extends about 10 to 15 feet into the channel. The best anchorage is reported to be in a bight on the east side of the bay. In 1998, a rock awash was reported 0.1 mile west of Disk Island in about 60°29'30"N., 147°40'21"W.

(710) **Lower Passage**, between Ingot Island and the north end of Knight Island, is a deep navigable channel suitable for small vessels. Broken ground, on which the least known depth is 6½ fathoms, extends into the passage 0.2 mile from the west entrance point of Louis Bay. A rock that uncovers at half tide is 350 yards from the west shore, 0.8 mile inside the northwest end of the passage. Foul ground extends from this rock to the head of the cove, 0.5 mile southwest.

(711) A rock covered 1 fathom is about 0.4 mile northwest from the north end of Disk Island and a 6-fathom area, position approximate, is 0.3 mile further north. These rocks are well out of the usual track of vessels going through Lower Passage.

(712) **Louis Bay** indents the northeast side of Knight Island about halfway through Lower Passage, about 2.2 miles south of Passage Point. The bay affords anchorage for small vessels 250 to 300 yards from the head of either of its two arms, in about 15 fathoms. The west arm is clear so far as is known.

(713) The east arm of Louis Bay has a very broken bottom, and small vessels entering should proceed with caution. A rock covered 5 feet is 175 yards from the east shore and 350 yards north from the entrance of the east arm. The arm is 0.1 to 0.2 mile wide; a ledge extends about 30 yards from the wooded islet on the west side of the entrance. When inside the entrance, favor the west side to avoid three rocks which bare at lowest tides.

(714) **Herring Bay**, at the northwest end of Knight Island, has no desirable anchorage and is characterized by much foul ground and very broken bottom, with deep water close to the shores and dangers. Vessels should proceed with caution, especially in the vicinity of broken areas with depths less than about 20 fathoms, and preferably at low water. The entrance is clear except along the east shore, which is foul. A prominent rock about 4 feet high is near the center of the bay; the best channel to the upper part of the bay is east of the rock.

(715) **Herring Point**, the north end of a narrow ridge about 1,000 feet high, forms the west side of Herring Bay.

(716) **Smith Island**, near the center of Prince William Sound, is high and wooded and lowest at its southwest end. Broken rocky bottom extends 3 miles northeast from Smith Island. A lighted bell buoy is 0.3 mile south of a 5-fathom patch, 1 mile east of the island.

(717) **Little Smith Island**, close west of Smith Island, is bluff, high, and wooded. Rocky patches of 4¾ to 16 fathoms are about 1.5 miles north of the island. A rocky area of 9 to 10 fathoms extends 1 mile south from the island.

(718) **Seal Island**, 5.5 miles south of Smith Island, is wooded, high, and round. **Seal Island Light** (60°25'47"N., 147°24'56"W.), 45 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the northwest side of the island. Close to the east end of the island are two bare rocky islets, and about 0.1 mile off the west end is a small rock that uncovers 8 feet.

(719) Rocky, broken areas extend 1 mile east, northeast and north from Seal and Smith Island. **Pennsylvania Rock**, 1 mile north of the island and marked by a buoy, is covered 2¼ fathoms. About 0.8 mile southwest of the island is a 4½-fathom rocky area.

(720) Vessels generally use the channel between Seal and Smith Islands rather than the channels to the southeast.

(721)

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(722) **The west entrance of Prince William Sound** between Cape Cleare and Cape Puget is divided into a number of passages between the islands. They are described in the following order: Montague Strait, Latouche Passage, Elrington Passage, Prince of Wales Passage, Bainbridge Passage and Knight Island Passage.

(723)

Montague Strait to Bay of Isles

(724) **Montague Strait**, between Montague Island on the east and Latouche and Knight Islands on the west, is the broadest of the passages west of Montague Island leading from the sea to Prince William Sound. The strait affords an unrestricted channel 4.5 miles wide. Below the north end of Latouche Island the strait is seldom used as vessels generally proceed via Elrington Passage. Above that point the regular steamer route to the east part of Prince William Sound is via the passage west of The Needle, Green Island and Seal Island, thence through the passage between Seal and Smith Islands.

(725) **The March 1964 earthquake caused bottom uplift throughout Montague Strait. Shoaling and other scattered dangers exist in the area, requiring mariners to navigate with caution. Full bottom coverage surveys of Montague Strait were completed by the NOAA Ship Rainier in 2000. Mariners are advised to consult the U.S. Coast Guard Local Notice to Mariners for the location of dangers.**

(726) The west side of Montague Island is heavily wooded to about 900 feet. Generally rugged with many deep, steep-walled recesses near its high levels, it retains numerous patches of snow and ice throughout the summer.

(727) **San Juan Bay**, an open bight just north of Cape Cleare, has a sand beach at its head that is backed by a large tidal swamp that drains through a small stream. Landings in the bay are usually difficult because of the surf.

(728) **Stair Mountain**, just north of San Juan Bay, is a prominent conical-shaped 1,595-foot peak that shows

unmistakably from the south and southwest. The summit is bare and the slopes have a scattering growth of trees.

(729) **Point Bryant** is a rounding point of high eroded bluffs, about 3 miles north of San Juan Bay. The rocky shore is fringed with heavy kelp.

(730) **Macleod Harbor**, on the east side of Montague Strait, 6.5 miles north from Cape Cleare, is an excellent anchorage protected from all directions except the southwest. **Point Woodcock**, on the north side of the entrance, is a rocky bluff about 50 feet high and wooded on top. The point is fringed by a rocky, kelp-covered reef. The south entrance point is gently rounding. The head of the harbor is marked by extensive mudflats.

(731) Large vessels entering Macleod Harbor favor the north shore and anchor in 12 to 14 fathoms, muddy bottom, about 0.3 mile off the shingle beach 1 mile from the head of the bay. In making this anchorage, care should be taken to avoid the mudflats, which rise very sharply. Severe williwaws draw down through the harbor, but the holding ground is good and the anchorage is safe. Small craft find anchorage farther in close to the north shore and to the head of the bay in 4 to 10 fathoms, mud bottom. Small-craft mooring piles at the head of the harbor are now dry at low water because of the upheaval caused by the March 1964 earthquake. Drastic changes have occurred, and the overall size of the bay is greatly reduced.

(732) **Hanning Bay**, indenting the west side of Montague Island 13 miles north of Cape Cleare, is a good anchorage with east winds. Shoals to 2 fathoms extend about 0.5 mile from the south shore into the entrance to the bay and shoals to 4½ fathoms extend about 0.5 mile from the north shore into the entrance of the bay. A dangerous submerged wreck (59°57'54"N., 147°42'11"W.) with a least depth of 2 fathoms is in the center of the bay. The best anchorage in south winds is about 1.0 mile from the south shore of the bay, with Danger Island bearing, **256°** and **Point Bazil**, the north entrance point, bearing approximately north, in about 14 fathoms. Care should be taken to avoid the dangerous submerged wreck.

(733) **The Needle** is a flat-topped, steep-sided rock, about 45 feet high, in Montague Strait 3.8 miles from the nearest point of Montague Island and 5.5 miles southeast from Point Helen, the south extremity of Knight Island. Rocks that uncover are close north-northeast and south-southwest of The Needle. A shoal with a depth of 5.2 fathoms at the south end and 5.0 fathoms at the north end extends northeast about 2 miles from a point 0.5 mile south of The Needle and extends west about 0.3 mile. A depth of 1.5 fathoms is about 0.6 mile northeast of The Needle. A shoal spot with a depth of 3.7 fathoms is about 0.9 mile north-northeast of The Needle.

(734) **Little Green Island**, heavily wooded and about 100 feet high, is 6 miles north-northeast of The Needle. A fringe of rocks surrounds the island and a kelp-marked reef, baring at various stages of the tide, extends 1.1 miles southwest off the south end of the island. A rock, covered 3½ fathoms, is 1.8 miles southwest of the island, and two rocks with little kelp that uncover about 1.6 miles east of the island and close to the 50-fathom curve. A shoal area with depths of 3¾ to 9 fathoms is about 2 miles northeast of the island.

(735) **Green Island,** between Knight Island and the north part of Montague Island, is wooded. The highest elevations are near the east side of the island and slope gradually to the north and south ends. Very foul ground surrounds the island. A wooded islet, 100 feet high, several small islets and numerous rock and shoal spots are along the northwest shore of Green Island. A prominent outlying rock, 26 feet high, is 1.2 miles northwest of Putnam Point. The west side of Green Island is cluttered with rocks and shoal areas. A rock, 15 feet high, at 60°14'55"N., 147°32'26"W., marks the westernmost danger in this area.

(736) **Gibbon Anchorage** is a secure harbor for craft up to 500 tons in the cove about the middle of the northwest side of Green Island. Pass 0.3 mile south of the outlying prominent 26-foot-high rock; avoid a ½ fathom shoal about 0.6 mile southwest of the rock in 60°16'53"N., 147°28'49"W. Steer southeast for **Putnam Point**, the prominent wooded point with a small bluff on the southwest side of the cove. A 9-foot high rock in 60°16'55"N., 147°27'10"W, is 0.6 mile southeast from the 26-foot-high rock. When about 0.2 mile from shore, steer more east and pass midway between Putnam Point and the islet, 0.2 mile north of the point. Anchor in the cove southeast of the islet in about 3 fathoms. A 1½ fathom shoal is in the center of the cove in 60°16'29"N., 147°26'04"W.

(737)

Passage between Green and Montague Islands

(738) The middle of the east side of Green Island is characterized by a prominent sand and gravel point, sparsely wooded. A group of five rocky islets is 1 mile off this point. **Channel Island**, 62 feet high and the highest of the group, is tree covered. A sandspit, terminating in low rocks, extends 0.4 mile northeast from this group.

(739) The bottom is very irregular between Channel Island and Montague Island. Shoal depths ranging from ¾ fathom to 10 fathoms were found in this area. The best water apparently is about 0.2 mile southeast of Channel Island.

(740) **Caution:** The area between Green Island and Montague Island has many rocks and shallow reefs. The area is foul and should be avoided.

(741) **Port Chalmers**, on Montague Island 5 miles south of Graveyard Point, is south of **Gilmour Point** and extends northeast about 1.2 miles. At its northeast end are two small lagoons, the outer one having about 3½ feet of water along its south shore.

(742) A small wooded island, 165 feet high, is 1 mile southwest of Gilmore Point. An islet, 10 feet high, is 0.16 mile southeast of the island. Also, a kelp-marked reef that uncovers 9 feet and other dangerous rocks and shoal areas extend almost a mile north of the island.

(743) The approach to Port Chalmers is hazardous and great care should be taken due to the changes caused by the March 1964 earthquake. A kelp-covered reef that uncovers approximately 8 feet at low water is 0.4 mile east of the wooded island directly in line with the port. This reef is left southward upon entering. Care should also be taken to avoid the reef which covers at extreme high tide and is located about 0.7 mile southeast of Gilmore Point.

(744) Anchorage for small craft can be had in all weather at the head of Port Chalmers, between the reef and the lagoon entrance. There is excellent holding bottom of mud in 6 to 10 fathoms. On the upper half of the tide small craft drawing not more than 5 feet enter midchannel into the lagoon at the head of the port; they can lay in the lagoon at all times in any weather, except during extreme ranges of tide. A range (astern) of Channel Island off Green Island with Horn Mountain on Knight Island, can be used to pass 400 yards north of the 165-foot-high island and avoid the dangers in the approach. The reef 0.4 mile northeast of **Wilby Island** uncovers approximately 4.5 feet. Another reef, which uncovers 4 feet, is 0.9 mile west-southwest of Wilby Island. **Mariners should exercise caution navigating these waters. Numerous shoals and rocks bare at minus tides because of an uplift of about 11 feet caused by the March 1964 earthquake.**

(745) Small cannery tenders frequently anchor in 10 to 12 fathoms about 0.2 mile inside the 95-foot-high island southwest of the 165-foot-high island. To enter this area pass midway between the two islands. Several dangers exist in this area. The chart is the best guide.

(746) The small bay just north of Gilmour Point offers good protection and anchorage in 2 to 8 fathoms, mud bottom. The entrance is clear of dangers on a midchannel course.

(747) **Stockdale Harbor**, just south of **Graveyard Point**, has three small tree-covered islets in the south part of the harbor that connects to one another and to Montague Island at low tide. The north half is clear except for a kelp-marked ¾-fathom reef which is 0.4 mile southwest of the north entrance point in 60°19'18"N., 147°13'12"W. Anchorage is available in 15 to 20 fathoms along the north side of the harbor providing sufficient protection for small vessels against northeast winds. The south end of the harbor is fouled with rocks and shoals and should be avoided.

(748) A 3/4-fathom submerged reef marked by kelp, is 1.4 miles southwest of Graveyard Point.

(749) **Montague Point** is the large rounded north end of the west side of Montague Island. The shoreline is foul from Graveyard Point to Montague Point. A 1-fathom spot depth (60°22'42"N., 147°04'38"W.) is about 0.4 mile northeast of Montague Point.

(750) **Applegate Rock** is actually a reef that bares approximately 10 feet for a distance of 0.4 mile at high water. The reef is marked by **Applegate Shoal Light** (60°21'19"N., 147°23'34"W.), 24 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark. A second reef 0.25 mile northeast of Applegate Shoal Light extends 0.3 mile and bares about 3 feet at high water. Numerous rocks are in the vicinity of the reef. Foul ground extends to about 2.8 miles southwest of the light.

(751) The passage between Seal Island and Applegate Rock reef area has ample depth for a width of about 2 miles. The broken bottom within 1.5 miles of Seal Island and that adjacent to the reef area should be avoided.

(752) The passage between the reef area and Green Island has ample depth for a width of about 0.7 mile. A 6.2-fathom shoal at 60°19'39"N., 147°22'33"W. and the area within 0.7 mile of Applegate Shoal Light should be avoided. The 25-foot-high rock 1.2 miles north-northwest of Putnam Point is a good leading mark in entering this passage from the north.

(753) **Latouche Island**, on the west side of Montague Strait, is wooded to about 500 feet and above this is covered with moss and bushes, except the highest peaks, which are bare. The east shore is precipitous and the 100-fathom curve is less than 0.3 mile off in places.

(754) **Danger Island**, 1.4 miles south of Latouche Island, is low and wooded. The entire island is surrounded by reefs and rocks extending to 0.1 mile along the south side, to 0.7 mile to the southwest and to 0.5 mile to the northwest. A kelp bed extends from Latouche Island to Danger Island. Passage between the two islands should not be attempted.

(755) **Point Helen**, the southeast extremity of Knight Island, is marked by **Point Helen Light** (60°09'11"N., 147°45'59"W.), 35 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark.

(756) **Hogan Bay**, on the east side of Knight Island, 2.5 miles north of Point Helen, has anchorage in the middle, 0.6 mile inside the entrance, in 16 to 20 fathoms. The bottom is rocky and uneven, and the anchorage is exposed east. A rock covered ¾-fathom is about 0.1 mile off the north shore of the bay and about 0.5 mile inside the entrance. Small craft can pass through the narrow channel at the head of the bay and find secure anchorage in the inner cove in 13 fathoms or less, having a coarse pebble bottom. There is a ledge on the east side of the inner cove that extends outward about 109 yards that should be avoided. Favor the steep sloping spit on the west side of the channel when entering the inner cove.

(757) **Snug Harbor** is on the east side of Knight Island, 6.7 miles north of Point Helen. Its west arm is 0.3 mile wide and clear near midchannel, except for a 6.7-fathom shoal east-northeast of its entrance in about 60°15'19"N., 147°44'09"W. Secure anchorage is available at its head in 9 to 17 fathoms. Anchorage, exposed to north and northeast winds, can be had in the broad cove on the south side of the harbor in 12 to 15 fathoms, rocky bottom. **Discovery Point**, the south entrance point to Snug Harbor, is bold and high.

(758) A 14-fathom pinnacle is 1.5 miles northeast, position approximate, and a 5½-fathom rock area is 2.0 miles north-northeast from Discovery Point.

(759) **Marsha Bay**, 5 miles north of Discovery Point, has a crooked narrow entrance and is suitable only for small craft. The depths are great except at its north end, where anchorage can be selected in 9 fathoms or less. The best entrance is north of the island that chokes the mouth of the bay. The north passage is deeper and wider than the south passage. Extreme caution is advised because rocks and shoal areas abound.

(760) **Manning Rocks**, about 1.5 miles off the entrance to Bay of Isles, are three pinnacles which, because of the 1964 earthquake uplift, are now bare at low water. Surrounded by deep water, they are the worst dangers on the east side of Knight Island. Between Manning Rocks and the foul ground in the entrance to Bay of Isles the bottom is very irregular, although the least depth found is 2 fathoms. This area should be avoided.

(761) **Bay of Isles**, on the east side of Knight Island, has numerous islets and pinnacle rocks, submerged and awash, and is suitable only for small vessels proceeding with caution and preferably at low water.

(762) Foul ground extends 0.5 mile southeast from the north point of the entrance to Bay of Isles. At the end of the foul ground is a rock covered 1¾ fathoms, 0.9 mile east-northeast from an island near the north shore.

(763) To enter Bay of Isles, pass in midchannel north of the islets in the middle of the bay. Continue 0.5 mile past the islets, and pass in midchannel west of the islands near the south shore. Then keep about 150 yards off the north shore in entering West Arm. Anchor in the middle of the broad part of the arm in 9 to 11 fathoms.

(764)

Latouche Passage to Point Countess

(765) **Latouche Passage** has its seaward entrance between Danger Island and Erlington Island. The entrance bar, with depths of 3.3 to 9.0 fathoms, has sometimes been crossed by large vessels proceeding west from Latouche. The recommended route, however, is by way of Erlington Passage and the north part of Latouche Passage. Numerous submerged rocks and shoals with depths from 3.0 to 4.4 fathoms are about 1 mile north of Danger Island in 59°56'39"N., 148°05'25"W. to about 2 miles south of Point Erlington in 59°54'10"N., 148°14'22"W.

(766) Occasionally with west winds large pieces of glacial ice drift into Latouche Passage from Knight Island Passage.

(767) Latouche Passage, east of Elrington Island, is 7 miles long and 0.7 to 1.3 miles wide with depths under 30 fathoms in most places. Anchorage can be selected nearly anywhere in this channel in suitable depths, but it should be avoided in strong south winds. Avoid the east part of the passage in the vicinity of Izmaylov Island, the crescent-shaped islet 2.2 miles southwest of Chicken Island. Rocks and kelp are in the passage between **Izmaylov Island** and Latouche Island.

(768) A rocky ledge extends 220 yards from the west shore of Latouche Island and lies directly east of Izmaylov Island. A rock lies 120 yards from the northwest tip of Izmaylov in about 60°00'42"N., 147°59'25"W.

(769) From **Point Grace**, the north point of Latouche Island, to the north end of Elrington Island, a distance of 5 miles, Latouche Passage is about 1.8 miles wide, with deep water. A ledge extends about 200 yards off the east shore of Latouche Island 0.3 mile southeast of Point Grace, and a dangerous rocky reef, awash at low tide, lies about 300 yards off the west shore of Latouche Island 0.8 mile southwest of Point Grace in 60°04'20"N., 147°52'27"W.

(770) The southeast shore of the east end of **Evans Island** between Johnson Cove and **Bishop Rock** is foul with pinnacle rocks. A dangerous rock, awash at minus tide levels, lies 1.9 miles southwest of Bishop Rock, in about 60°04'46"N., 147°55'58"W., about 0.1 mile off Evans Island. An unnamed wooded island, is near the east end of Evans Island, 0.8 mile north of Bishop Rock. The island is connected to the shore by a gravel bar at low tide.

(771) **Latouche**, on the west side of Latouche Island 2.3 miles south of Point Grace, is the site of the abandoned copper mine of the Kennecott Copper Corp. The buildings are in ruins. Girwood, 0.3 mile north of Latouche, is the site of a homestead. There are piles on the beach in this vicinity.

(772) The cove immediately east of **Powder Point** is shoal, and a reef extends 100 yards from the point. Anchorage can be had about 600 yards north of Powder Point in 10 to 15 fathoms.

(773) Two rocks lie about 300 yards west of Powder Point at 60°03'00"N., 147°54'37"W. Another rock lies about 500 yards southwest of Powder Point at 60°02'56"N., 147°54'43"W.

(774) **Chicken Island**, 3.5 miles southwest of Point Grace, is separated from Latouche Island by a pass 200 yards wide with a depths less than 3½ feet. A rocky ledge extends about 130 yards west of Latouche Island towards the southeast end of Chicken Island. Only small craft should attempt the passage between Chicken Island and Latouche Island, and then only at high water. A reef, 200 yards in length, runs northeast to southwest and lies in the middle of **Wilson Bay**, just east of the north end of Chicken Island.

(775) **Horseshoe Bay** is on the west side of Latouche Island, 4.5 miles southwest of Point Grace. Its south half is shoal with depths of 1/3 fathom. Small craft should enter near the north shore of the bay where they can anchor in about 3 fathoms. A mooring pile is in the north part of the bay. Vessels can also anchor about 0.3 mile off the entrance in 16 fathoms.

(776) **Elrington Passage**, west of Elrington Island, is generally used by vessels proceeding between Prince William Sound and points to the west. It is 8 miles long, 0.5 to 1 mile wide, deep and clear. Anchorage is not easily found because of the great depths. The passage is well marked.

(777)

Currents

(778) The flood current sets northeast and the ebb southwest with a velocity of about 1.5 knots.

(779) **Elrington Island**, high and mountainous, is between Latouche Passage and Elrington Passage. The southwest end of the island has three prominent points between which are South Twin Bay and North Twin Bay.

(780) **Point Elrington**, the southwest end of the island, is a small hill, high and wooded, with cliffs at the water and is joined to the island by a sand and gravel neck just above high water. A hill, 1,060 feet high, 1.4 miles east of the point, has a low divide about 100 feet high at the east end, separating it from the main island.

(781) **Point Elrington Light** (59°56'09"N., 148°15'02"W.), 30 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark, marks the extremity of the point.

(782) **South Twin Bay** is free from dangers and affords convenient anchorage in 14 to 17 fathoms, hard bottom with patches of sand and gravel. It is exposed to west and southwest winds.

(783) **North Twin Bay** is free from dangers except for a rock covered 1.9 fathoms in 59°57'40"N., 148°12'36"W. and about 300 yards off the south shore. Anchorage can be found in the center of the bay in 13 to 17 fathoms. Of the twin bays, the best shelter is usually found in the south one.

(784) The north point at the southwest end of Elrington Island is a high hill, connected with the island at its southeast end by a long, low, wooded neck. **Lonetree Point**, the most north extremity of the point, is marked by a prominent lone tree and **Lonetree Point Light** (59°58'56"N., 148°12'00"W.), 30 feet above the water, shown from a skeleton tower with a red and white diamond-shaped daymark.

(785) On the southeast end of Evans Island is **Evans Island Light** (59°59'06"N., 148°07'28"W.), 20 feet above the water, shown from a skeleton tower with a red and white diamond-shaped daymark.

(786) A high island is in the bend at the south end of the passage close to Elrington Island, from which its southeast point is separated by a narrow pass dry at low water. Anchorage in about 34 fathoms with mud bottom and limited swinging room is reported south of the high island in what is locally called **Fox Farm Bay**. This anchorage offers good protection in most weather.

(787) A pyramidal pinnacle rock, about 8 feet high with grass on top, is about 250 yards off the north point at the southwest entrance to Elrington Passage, about 1.4 miles northeast of Lonetree Point Light. A grass-covered rock, 32 feet high with some brush on its summit, is near the angular mountain point on the east side of the passage, 3.2 miles east of Lonetree Point Light. In the southeast angle of the passage, 1.4 miles southwest of the grass-covered rock, anchorage can be had in 5 to 20 fathoms, muddy bottom, depending on the swinging room required.

(788) The north end of Elrington Passage is marked by **Elrington Passage Light** (60°02'46"N., 148°00'40"W.), 25 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark, on the south extremity of the island west of Bettles Island.

(789) **Sawmill Bay** indents the east side of Evans Island near the north entrance to Elrington Passage. The end of the long peninsula on the southeast side of the inner part of the bay is marked by **Sawmill Bay Light 3** (60°03'13"N., 148°02'13"W.), 14 feet above the water, shown from a skeleton tower with a green square daymark, and visible through the entrance north of Bettles Island. The entrance from Elrington Passage is 700 yards west of Elrington Passage Light between two islands west of Bettles Island; a daybeacon marks a reef about 0.5 mile northwest of Elrington Passage Light that uncovers 3 feet.

(790) There is a 2.2-fathom shoal at the east approach to Sawmill Bay, approximately 800 yards south of Johnson Cove at 60°03'25"N., 147°58'34"W. A rocky 8-fathom patch is about 900 yards north of the peak of Bettles Island. A shoal of 7½ fathoms lies 850 yards east of the daybeacon northwest of Elrington Passage Light at 60°03'10"N., 148°00'37"W. There are two sets of oil deflection booms deployed at the entrance to Sawmill Bay. The first set of buoys runs about 2,200 yards southwest from the west point of the mouth to Johnson Cove. The second set of buoys runs from Port Benney (60°03'48N., 148°00'54"W.), in a southwest direction to Sawmill Bay Light 3. In the event of an oil spill, containment booms will be extended along the buoys.

(791) **Local magnetic disturbance** was reported in Sawmill Bay and in the waters between Elrington and Bettles Islands in 1974. Extent of the disturbance is not known.

(792) **Johnson Cove**, on the northeast side of Sawmill Bay entrance, has an abandoned saltery at its head. The cove is foul with 4 feet in the basin near its head.

(793) **Bettles Island**, the largest of the high wooded islands at the entrance to Sawmill Bay, has foul ground along its north and south shores.

(794) **Crab Bay** is a small indentation on the north shore of Sawmill Bay. A saltery just inside the west entrance point has a wharf in ruins. A small boat harbor with a floating pier available for seaplanes and small craft is on the west side of the bay and marked by a daybeacon. A reef covered 1 fathom is about 300 yards southeast of the daybeacon in about 60°03'48"N., 148°00'18"W. Two steel pilings are reported to lie across from the small boat harbor in about 60°04'02"N., 148°00'29"W.

(795) **Chenega Bay**, a Native community on the west entrance point to Crab Bay, is home to about 21 families. The village has a school, church and a community center, which includes a post office, health clinic and Village Council Office; electricity and telephone; an Alaska State Ferry pier with ferry service to Seward and Valdez (weekly service in summer and monthly service in winter); a small boat harbor with 15 slips, diesel fuel, gasoline, water and a 3,000-foot gravel air strip. Chenega

Bay was established in 1984 after Chenega, on the south end of Chenega Island 13 miles north, was abandoned after the 1964 earthquake.

(796) **Port Benney** (abandoned) was formerly the site of a saltery just west of Crab Bay. There is a small floating pier in the protected cove at the port.

(797) **Port Ashton**, on the northwest shore of Sawmill Bay, has been destroyed by fire and a series of pilings and dolphins mark the extent of the pier ruins. A group of rocks, awash at extreme low water, are about 115 yards offshore and about 260 yards northeast from the wharf ruins.

(798) **Port San Juan** is at the southwest end of Sawmill Bay and is the site of a fish hatchery. A wharf with a 200-foot face had a reported least depth alongside of about 22 feet in 2000. A waterfall is behind the fish hatchery. A fish pen lies 90 yards east of the hatchery pier and is marked by orange buoys on each corner. A daybeacon lies about 500 yards east of the pen. A rock covered ½ fathom, is about 150 yards south of the daybeacon. Another rock, covered 1¼ fathoms, is about 325 yards northeast of the wharf. In the approach to the wharf, there are spots with less than 4 ½ fathoms over them. A small boat pier is opposite of Port San Juan about 0.3 mile southwest of Sawmill Bay Light 3.

(799) Careful maneuvering is required for a large vessel to get away from this wharf safely. The practice is to swing the stern out and back toward the island before turning.

(800)

Anchorages

(801) Sawmill Bay has no good anchorage for larger vessels and the holding ground is poor. Smaller craft may find suitable anchorage in some coves throughout Sawmill Bay.

(802) Sawmill Bay can be entered by either the northeast or the southwest entrance. The former is recommended because of its greater width. In proceeding toward the southwest end of the bay, vessels can pass on either side of the small oval-shaped island in the middle of the bay. If passing on the north side, the island should be favored to avoid the rocks off Port Ashton. When entering through the southwest entrance, care should be taken to avoid a reef on the east side of the entrance in about 60°02'54"N., 148°01'03"W.

(803)

Currents

(804) Little or no current exists in Sawmill Bay.

(805) **Prince of Wales Passage**, between Evans Island and **Bainbridge Island**, is about 11 miles long and from 0.5 to 2 miles wide. It offers a direct route from Knight Island Passage for vessels bound southwest along the coast; otherwise Elrington Passage is more direct and is generally used.

(806) Prince of Wales Passage has several dangers. The principal channel at the north entrance is east of Flemming and Ship Islands, and the 2¼-fathom shoal in 60°08'19"N., 148°02'07"W., about 0.5 mile south of Flemming Island, then west of Iktua Rocks. A shoal area with a depth of 8 fathoms in about 60°06'15"N., 148°04'48"W., is about 500 yards offshore and about 0.4 mile southeast of a prominent point on the east side of Bainbridge Island. A shoal area with a least depth of 8 fathoms extends about 375 yards offshore to about 60°05'17"N., 148°05'56"W. Several wooded islands are on the east side of the passage from 3.2 to 5 miles south of Flemming Island. The area between them and Evans Island is foul and the tidal currents have a velocity of 2 to 3 knots. Near midchannel west of the middle island is an area of broken ground on which the least depth is 4 fathoms and extends over 0.7 mile southwest from 60°05'09"N., 148°05'27"W. A shoal area with a least depth of 2½ fathoms in about 60°03'54"N., 148°07'28"W., extends about 500 yards off Bainbridge Island and lies about 1.2 miles northeast of **Amerk Point**, a prominent low sand point with a fringe of trees on Bainbridge Island. These areas should be avoided by vessels.

(807) The channel west of **Flemming Island** has considerable foul ground and should be avoided without local knowledge, except possibly small craft proceeding with caution and preferably at low water. Good anchorage in 4 to 16 fathoms, mud bottom, is west of the south end of Flemming Island at **Panhat Point** on Bainbridge Island. To enter the anchorage area from the south, pass 300 yards off the point on the north course until 500 yards north of the point, head west and then south to the anchorage.

(808) **Gage Island**, wooded and with a group of partly bare rocks off its south side, is 0.5 mile north of Flemming Island and is a good mark for the north entrance of Prince of Wales Passage.

(809) **Ship Island**, with a few trees, is the south of two on the east side of Flemming Island. A reef bare at low water extends 225 yards southeast.

(810) **Iktua Bay**, in the northwest shore of Evans Island, opens to the north on the east side of the passage about 1.5 miles south of Flemming Island. The bay, 1.5 miles long, is about 0.6 mile wide at the entrance and narrows to about 0.4 mile midway of its length. The east shore of the bay has several off-lying dangers and may be followed 300 to 350 yards offshore to the head of the bay and anchorage in 3 to 14 fathoms, mud bottom. The west shore of the bay may be followed about 200 yards off for 0.7 mile until abeam of the south of two small islets. Good anchorage for small craft in 2 to 10 fathoms, mud bottom, is east of these islets.

(811) **Iktua Rocks**, a group of bare rocks, highest about 3 feet, are 0.4 to 0.5 mile off Evans Island and 1.5 miles south of Flemming Island.

(812) **Guguak Bay** is on the east side of the passage about 1.3 miles south of Iktua Rocks. A rock that bares at half tide marks the west side of the narrow entrance. Rocks, which uncover, are across a narrow portion of the bay, about 0.2 mile south of the entrance. There is anchorage in 3¾ to 7 fathoms outside the bay entrance.

(813) The only good anchorage in Prince of Wales Passage is in circular **Squirrel Bay**, at the southwest point of Evans Island. Anchorage can be found near the center of the bay in 12 to 22 fathoms, sand and mud bottom of fair holding qualities.

(814)

Ice

(815) Glacial ice is sometimes discharged through Prince of Wales Passage.

(816)

Currents

(817) Off Amerk Point at the narrowest part of the passage, the flood sets north at a velocity of 0.8 knot and ebbs southwest at a velocity of 2.5 knots. Between Flemming and Evans Islands at the north end of the passage the velocity is from 1.5 to 2 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(818) **Bainbridge Passage**, between Bainbridge Island and the mainland, extends northeast for 10 miles from Port Bainbridge to Knight Island Passage. A 6.7-fathom shoal in 60°06'33"N., 148°17'22"W., is in the middle of the west entrance to the passage.

(819) **Point Waters** is the northwest point of the southwest entrance to Bainbridge Passage. A ledge with rocks awash is 250 yards offshore.

(820) Two outlying dangers, submerged at high water, are in the passage. A ledge that uncovers 3 feet is about 200 yards off the point about 3 miles south of **Point Countess**, the northwest point of the northeast entrance to Bainbridge Passage. Another ledge that uncovers 4 feet is about 250 yards off the north shore, 1.8 miles east of Point Waters, the northwest point at the west entrance to the passage. Although there is deep water between both these ledges and the north shore, vessels should pass southeast of them.

(821) A recommended anchorage in the passage is in the small bay about 2.2 miles southwest of Point Countess. Care should be taken, however, to avoid the rock that uncovers 6 feet in the middle of the bay and the ledge that extends off the northeast entrance point. A 2-fathom shoal in 60°10'39"N., 148°07'05"W., is about 0.3 mile southeast of the entrance to the bay.

(822)

Currents

(823) The tidal current in Bainbridge Passage floods northeast at a velocity of 3.1 knots and ebbs southwest at 2.4 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(824)

Knight Island Passage to Pleiades Islands

(825) **Knight Island Passage**, on the west and south sides of Knight Island, is used by vessels calling at bays on the west side of Knight Island. With east winds it offers a smoother channel from Latouche Passage to the north end of the Naked Island group than the generally used route east of Knight Island.

(826) From its north entrance between Herring Point and Crafton Island, where it is 5 miles wide, the passage extends south for about 16 miles to Pleiades Islands, with a least width of 2 miles at the southeast end of Chenega Island. The channel leads east of the Pleiades, where it is 1.2 miles wide between them and Point of Rocks. From these islands the passage has a southeast trend for 10 miles, with widths of 3 to 4 miles, to Montague Strait between Point Helen and the north end of Latouche Island.

(827) The waters of both shorelines of the Knight Passage are characterized by rocky and exceedingly broken bottom. Differences of 50 fathoms between adjacent soundings are not uncommon. As a measure of safety, deep-draft vessels should avoid areas where abrupt changes are indicated by the chart to depths less than 50 fathoms. The depths in the passage range from 40 to 400 fathoms. The west side is generally bold, except for the bight between Crafton Island and Point Nowell. From Lower Herring Bay to Pleiades Islands, the east shore is foul for 0.8 mile off, with islands, rocks and reefs. The bays on the west side of Knight Island are not good anchorages. Small craft can anchor in nearly all the arms of the bays, but the bottom is generally rocky.

(828) **Pleiades Islands**, in the middle of the bend in Knight Island Passage, are a chain of seven wooded islands 1 mile long. The southernmost and largest is about 90 feet high. One hundred yards northwest of the northernmost island is a bare rock islet and south of the southernmost wooded island is a long, low lying reef that extends 300 yards. A rock, about 400 yards west of the middle of the chain, bares at low water. Two large rocks, covered 3 feet, are on the 9-fathom bank about 200 yards east of the north end of the southernmost island. **Pleiades Light** (60°14'23"N., 148°00'38"W.), 30 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the north end of the northernmost island of the group.

(829)

Currents

(830) The tidal currents in Knight Island Passage have a velocity of 1 to 2 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(831)

Ice

(832) Considerable glacial ice has been seen in the passage south of Pleiades Islands. It comes east between Point Countess and Chenega Island and drifts as far as Latouche Passage with the ebb.

(833)

Little Bay to Thumb Bay

(834) **Little Bay**, on the south side of Knight Island, 1.8 miles northwest of Point Helen, has no known dangers except for the rocks awash close to the head. The depths are 13 to 18 fathoms, rocky bottom, and it is a fair anchorage except with south winds.

(835) **Mummy Bay**, in the south end of Knight Island, is deep and clear, but rocks extend 0.3 mile from the head. Small vessels can anchor 0.5 mile from the head in 15 to 20 fathoms. **Northeast Arm** is an anchorage for small craft. Caution should be used when anchoring to avoid the shoal that extends 200 yards from the east side of the small tree covered island at the entrance to the arm.

(836) **Thumb Bay** is a small inlet opening into the south part of Mummy Bay. The bay affords anchorage for small vessels in 12 to 22 fathoms with limited swinging room and rocky bottom. No swell makes in the anchorage and the holding ground is good. The anchorage is protected from winds from all directions except northwest.

(837) **Lucky Bay** and **Italian Bay** are unimportant inlets on the south shore of Knight Island between Long Channel and Mummy Bay.

(838)

Squire Island to Aguliak Island

(839) **Squire Island** and Mummy Island, two large islands on the east side of Knight Island Passage, are separated from Knight Island by Long Channel. Squire Island, the south one, is the higher of the two. A drying ledge is 0.3 mile southwest from **Squire Point**, the south end of the island. Two small islands are 0.3 mile off the west side of Squire Island, and from these islands a large reef extends 0.4 mile west to **Point of Rocks**, the latter awash at high water. The channel between Mummy and Squire Islands leading into Long Channel has rocky, broken bottom and should be used with caution.

(840) **Long Channel** is an inside passage, 4.5 miles long, for small craft from Drier Bay to the south part of Knight Island Passage. The channel narrows to 80 yards abreast Mummy Island. Numerous shoals to 1 fathom and a rock that uncovers at low water are between Mummy Island and the middle of the passage. Vessels should favor the east side and keep within 100 yards of Knight Island to avoid the dangers. A rock, covered at high water, is in the north entrance 0.3 mile east from the north end of Mummy Island. The tidal currents have little velocity.

(841) **Copper Bay**, on the east side of Long Channel, is abreast the north end of Squire Island. Its entrance is very narrow and foul and suitable only for small craft with local knowledge. The tidal currents have considerable velocity in the entrance.

(842) **Mummy Island**, on the south side of the entrance to Drier Bay, is high and wooded; on the south half of the island are patches of grass. Reefs extend 0.3 mile southwest from the north end of the island, and wooded islets with reefs around them extend 0.6 mile west from the middle of the island.

(843) **New Year Islands** are on the north side of the approach to Drier Bay. They are wooded, and the largest is 200 feet high. **New Year Islands Light** (60°18'46"N., 147°55'04"W.), 23 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark, is on the southwest side of the island south of the largest island. Bare reefs extend 300 yards southwest from the light. Rocks that uncover, about 500 yards north-northeast from the north island in 60°19'24"N., 147°54'39"W., are a serious danger in the channel between New Year Islands and the islands to the north.

(844) **Drier Bay** has its main approach between New Year Islands and Mummy Island. The southeast shore of the bay is indented by a number of smaller bays and coves. Drier Bay has been examined from the 50-fathom curve at the entrance to the head of the north arm and found to be clear of dangers except those charted.

(845) Local knowledge may be required in recognizing the entrance to Drier Bay, as there are several groups of islands on the east side of Knight Island Passage, both north and south of the entrance. Approaching from north, the island in the mouth of Johnson Bay is a good mark. The chart is the guide.

(846) **Clam Islands**, two in number, low and wooded, are between New Year Islands and **Rocky Point**, the north point of Drier Bay. A 3.1-fathom rocky patch is 0.3 mile south from Clam Islands, about in the middle of the entrance.

(847) **Range Isle**, small and wooded, is close to the north side of Drier Bay and 2 miles east of New Year Islands. The line of Range Isle just clear of the north shore east of it, leads about midway between Mummy Island and New Year Islands and is sometimes used as a range for entering the bay.

(848) **Cathead Bay** is on the south side of Drier Bay, 2 miles from Mummy Island. Two islands are in the upper part of the bay. In the entrance of the bay, 0.1 mile from the west side, is a 0.6-fathom shoal. A depth of 1.9 fathoms is midway between the two islands and depths to 1.2 fathoms are 150 yards east of the south island. A large foul area extends 175 yards south of the south island almost to shore.

(849) **Cathead Shoal**, with a least known depth of 3½ fathoms, is about 500 yards northeast from **Cat Head**, the point on the west side of Cathead Bay entrance. Entering Cathead Bay, favor the east side to avoid Cathead Shoal and the 0.6-fathom shoal, then proceed with caution on either side of the islands at its head.

(850) **Mallard Bay**, on the south side 2.5 miles inside Mummy Island, is foul for a distance of 0.2 mile from its

head. Approaching with care, anchorage can be made 0.4 to 0.7 mile from the head in 17 to 26 fathoms. No swell makes into the anchorage, but williwaws are possible during heavy southeast weather.

(851) **Barnes Cove** is obstructed by ledges at its entrance, and shoals extend from the shores. Small craft entering with care can find good anchorage in 6 fathoms. Vessels can anchor 300 to 500 yards off the entrance in 18 fathoms.

(852) The point on the northeast side of Barnes Cove is prominent and high, with bare rocky slides. A reef extends 150 yards off the northwest side of this point.

(853) **Chase Island**, small and wooded, is 700 yards from the northwest side of Drier Bay and 1.8 miles east of Range Isle. A ledge awash and numerous rocks, covered and awash, extend 200 yards southwest to 200 yards southeast of Chase Island.

(854) A ledge awash at half tide is 0.4 mile northeast of Chase Island. A rock that uncovers at lowest tide is 275 yards north-northwest of the half-tide ledge.

(855) **Northeast Cove**, at the head of Drier Bay, is small and has shoals at its entrance and also inside for 0.1 mile from its head. Small craft entering with care can find good anchorage in 2 to 3 fathoms. Vessels can anchor 300 to 500 yards off the entrance in 17 to 19 fathoms. A 2.5-fathom shoal in 60°19'33"N., 147°45'43"W., is about 200 yards offshore and 0.4 mile west from the entrance. Anchorage can be selected about 0.3 mile from shore in the northeast end of Drier Bay, in about 20 fathoms.

(856) **Port Audrey** is the north arm of Drier Bay. A rock covered 1.2 fathoms in 60°20'26"N., 147°46'04"W., is about 500 yards south of the entrance to the lagoon at the head of the arm. The lagoon has a depth of 0.5 fathom in the entrance and good anchorage inside for small craft in 4 to 5 fathoms. A flat extends 250 yards from the head of the lagoon. Violent winds blow in and out of Port Audrey.

(857) **Squirrel Island**, 1 mile north of New Year Islands and 0.5 mile from the east shore, is the northernmost of the islands extending 1.5 miles north of the entrance to Drier Bay. It is high and wooded.

(858) **Johnson Bay** is suitable only for small craft; mariners without local knowledge should enter at low water only and proceed with caution in the vicinity of all broken ground. A wooded island is in the mouth of the bay. The entrance, north of the island, is about 125 yards wide between reefs that bare. The axis of the channel is about 125 yards from the north shore. From Knight Island Passage, a course for the north point at the entrance in range with a pyramidal peak of black rock, 2,090 feet high, above the head of the bay, will lead between the outlying dangers to the entrance.

(859) A covered rock, dangerous for small craft, is 0.1 mile south of **Aguliak Island** and a 2½-fathom shoal is about 0.4 mile southwest of the island. In 1999, there was a 5-fathom shoal about 0.47 mile south of Aguliak Island in about 60°21.2'N., 147°53.3'W, and about 0.93 mile southwest of Aguliak Island, there was a 4-fathom shoal in about 60°20.9'N., 147°53.9'W.

(860)

Channel Rock to Jackpot Bay

(861) **Channel Rock**, a prominent, bare, black rock about 6 feet high, is about 1 mile off the entrance of Lower Herring Bay and is a good mark for Knight Island Passage. A rock that uncovers is 1.4 miles north-northeast from Channel Rock and 0.6 mile from the shore of Knight Island. From this rock south, the east side of Knight Island Passage is very broken and foul, with deep water extending close to the dangers.

(862) **Lower Herring Bay** is suitable only for small craft. The best entrance is east of Channel Rock. The principal danger in the bay is a rock that uncovers 9 feet, which is in the middle, 600 yards from the east end of the bay. The passage between this rock and the point north, between the two arms, should be used with caution. A midchannel course should be followed in the arms. Small craft can anchor in the cove on the south side 1.2 miles inside the entrance of the bay, in not less than about 10 fathoms.

(863) A narrow deep passage, suitable for small craft, follows the shore inside the islands between Lower Herring and Johnson Bays. Mariners without local knowledge should take it at low water and exercise care. In 1968, a reef was reported at the entrance to Lower Herring Bay in 60°22.8'N., 147°52.3'W., and, in 1974, a 1¼-fathom spot was found about 0.4 mile southwest of the reef in 60°22.7'N., 147°52.8'W.

(864) **Chenega Island**, on the west side of Knight Island Passage, has a bold but fairly regular shore bordering on Knight Island Passage. Its highest summit is near the center. The south shore of Chenega Island is indented by several small bays where small vessels can find anchorage and shelter from the prevailing northeast storms.

(865) **The March 1964 earthquake caused a bottom uplift of 4.9 feet at Chenega Island. Shoaling and new dangers may exist requiring extreme caution until a complete survey is made of the area**.

(866) **Chenega**, an abandoned village, is at the head of a cove indenting the south end of the island, which is marked by three small wooded islets. A rock bares 4 feet 150 yards north of the northernmost islet. A school in the village is in ruins. There is a prominent landslide back of the abandoned village. The residents of Chenega relocated to Chenega Bay in Sawmill Bay at Evans Island, 13 miles to the south.

(867) Small vessels can anchor in the cove fronting Chenega, in 5 to 15 fathoms, soft bottom. The anchorage is only partly protected from the south by the entrance islets and is not recommended in south weather. To enter, pass 300 yards west of the entrance islets on a **000°** course until within 300 yards of the shore, then swing sharply to the right and head for the school in ruins. Anchor in a suitable depth.

(868) **Whale Bay** indents the mainland 4 miles southwest of Chenega. A low portage at the head of the west arm connects with the head of Port Bainbridge. The bay is

deep, but small craft can find anchorage along the east shore of the south arm and in 6 to 10 fathoms, mud bottom, in the small bight in the north side of the west arm; the latter is a very good anchorage and is directly off a bare cliff that is visible for some distance. Ice from Icy Bay often obstructs the entrance to Whale Bay.

(869) **Dangerous Passage** separates Chenega Island from the mainland. The north entrance of the passage is obstructed for a distance of about 0.6 mile off the north end of Chenega Island by a group of islets and rocks, including **Junction Island**, which is high and wooded. The northernmost obstruction of the group is a 4¾-fathom shoal 0.5 mile north-northwest of the island. It is difficult to pick up the north entrance at night.

(870) About 5.5 miles from the north entrance, Dangerous Passage is restricted by an island and a group of islets. **Delenia Island**, in the middle of the passage, is wooded. A small grassy islet is 275 yards north of Delenia Island; a 1¾-fathom shoal is 425 yards north of the grassy islet. The deepest and straightest channel is between this shoal and the nearby west shore of Dangerous Passage and is 300 yards wide. The channel to the east and south of Delenia Island is wider, but a rock, bare only at lowest tides, is 225 yards east of the grassy islet. There are numerous shoals between the island and the east shore. Deeper draft vessels should pass to the west of Delenia Island, maintaining a distance of not more than 200 yards off the west shore of Dangerous Passage in the vicinity of the 1¾-fathom shoal.

(871) The best anchorage in Dangerous Passage is in the vicinity of Delenia Island. There is good holding ground about 0.3 mile southwest of the Island in 15 to 20 fathoms.

(872) **Granite Bay**, on the north side of the north entrance to Dangerous Passage, has irregular depths and is not recommended for anchorage.

(873) **Paddy Bay** is about 3 miles southwest of Granite Bay. Vessels entering should favor the east side to avoid a 2½-fathom submerged ridge located 0.3 mile west of **Paddy Point**. To avoid dangers, a distance of 200 yards should be maintained from the shore throughout the bay. The small embayment found north of the islets in the lower bay contains numerous shoals and rocks and should be avoided by those without local knowledge. A rock exposes 6 feet at low water, 300 yards west of the south end of the islet near the head of the bay and near the middle of the entrance to the northwest arm. The bay affords anchorage for moderate-sized vessels in either of the two arms at the head.

(874) **Masked Bay** indents the Chenega Island shore of Dangerous Passage opposite Paddy Bay. The wooded islets in the entrance leave a channel only 100 yards wide. Small vessels will find excellent anchorage in the bay, but local knowledge is required to anchor.

(875) **Ewan Bay** indents the north shore of Dangerous Passage about 5 miles from the north entrance. Many rocks and shoals extend from the head and both shores of the bay, but midchannel is deep and clear except near the head. The entrance to the lagoon at the head of the bay is obstructed by rocks and rapids. Avoiding the shoal areas extending from the shores, small vessels can anchor near the head of the bay; however, it is rather deep.

(876) **Jackpot Bay** is about 3 miles southwest of Ewan Bay. **Jackpot Island**, wooded, is near the middle of the entrance. The narrows, 1.5 miles above the entrance, have a width of 250 yards. At the upper end of the narrows, a midchannel rock uncovers 8 feet. This rock is on range with the east tangent of the narrows and the highest point of Jackpot Island. Depths in the bay are generally too deep to anchor. Small craft can find good all-weather anchorage in either of the two basins in the north part of the bay; the entrances are narrow but free of dangers.

(877)

Icy Bay

(878) **Icy Bay**, at the southwest extremity of Dangerous Passage, is separated from Port Bainbridge by a narrow neck of land of moderate height. **Verdant Island**, a precipitous, high, wooded island, is off the east entrance point. Active glaciers in **Nassau Fiord** and at the head of Icy Bay keep the bay filled with ice most of the time and make it dangerous for small boats to enter. Anchorage and good shelter from ice can be found in **Gaamaak Cove** on the west shore of Icy Bay, 0.8 mile north of the entrance to Nassau Fiord.

(879)

Ice

(880) All the bays in this vicinity are likely to freeze over in cold weather. The ice floes from Icy Bay at times make navigation difficult west of the Pleiades Islands and extend north into Dangerous Passage. The discharge is continuous but irregular in volume and is mainly southeast. When heavy it blocks the entrance to Whale Bay and passes south of the Pleiades Islands. Isolated bergs of considerable size frequently drift east as far as Latouche and are a menace to navigation. Ice floes have been known to pass south through Bainbridge Passage and then north into Prince of Wales Passage. No ice has been observed east of Delenia Island.

(881)

Procession Rocks to Auk Bay

(882) **Procession Rocks**, 4.3 miles north of Point Elrington Light, are a group of small islets and jagged rocks, the highest rising to about 70 feet. There are twelve principal islets, with a number of smaller rocks and reefs surrounding them. Deep water extends close up to the rocks.

(883) **Port Bainbridge** is a deep body of water that extends about 12 miles north from a line joining Cape Puget and Procession Rocks. Depths of over 100 fathoms are found nearly to the head of the bay. A 7.2-fathom shoal in 60°07'38"N., 148°20'51"W., and on the west side of the bay is about 1.5 miles northwest of Point Waters.

(884) **Point Pyke**, the east entrance point to Port Bainbridge, is a prominent headland that rises almost vertically.

(885) At the head of Port Bainbridge, the west arm extends about 1.5 miles to the north. The water in this arm is deep, but the entrance is blocked by a gravel bar with a least depth of about 1½ fathoms. The best water is close to the east entrance point.

(886) **Bainbridge Glacier**, about 1 mile wide, discharges into Port Bainbridge opposite Bainbridge Passage.

(887) **Auk Bay**, on the west side of Port Bainbridge, opposite Point Pyke, is small but affords good anchorage in 20 fathoms, muddy bottom. A rock that uncovers is about 150 yards off the north shore, 1 mile inside the entrance. The south entrance point is marked by a prominent pinnacle rock.

(888) A prominent brown rock about 10 feet high is 0.3 mile offshore, 2.5 miles north of Cape Puget.

(889)

Swanson Bay to Hogg Bay

(890) **Swanson Bay**, a long narrow bay just north of Point Pyke and extending 3.5 miles to the east, is deep, but no good anchorages are available. Indifferent anchorage can be found near the head of the bay in 28 to 30 fathoms, mud bottom.

(891) **Hogg Bay**, about 2 miles north from Point Pyke, is the largest bay in Port Bainbridge. It is free from dangers except for a rock that uncovers 3 feet, 0.2 mile off the north shore about 1 mile inside the entrance, and a rock awash at low water 180 yards off the south shore, 1.7 miles from **Swanson Point.**

(892) Fair anchorage can be had near the head of the bay at the entrance of the north arm, in 25 fathoms, hard bottom, with patches of sand and gravel. Small craft can find excellent shelter at the head of the north arm. A beach suitable for beaching small craft is behind the north island near the entrance to the north arm.

(893) Bainbridge Passage was discussed earlier in this chapter.

(894)

Cape Puget to Driftwood Bay

(895) The coast between Cape Puget and Cape Resurrection is high and rugged, with numerous glaciers showing in the valleys. No shelter is available except in Day Harbor, where the anchorage is very good. The coast is clear except for a few rocks extending not more than 0.3 mile offshore. The first range of mountains varies from about 2,000 to 3,500 feet in height, while the back range is about 5,000 feet high. Much of the hinterland is covered by an ice cap.

(896) A constant current sets southwest along the Kenai Peninsula. (See remarks on currents in chapter 3.)

(897)

Caution

(898) A danger zone of an air-to-air gunnery practice area is in **Blying Sound**. (See **33 CFR 334.1300**, chapter 2, for limits and regulations.)

(899) **Cape Puget** is a prominent headland with an eroded bluff. At the foot of the slope is a conical rock that is prominent from the east or west. Several bare rocks are off the cape, the farthest being about 0.2 mile.

(900) **Puget Bay**, the first indentation west of Cape Puget, is funnel shaped and extends north for about 6 miles. The bay is deep throughout and free from dangers except for rocks and reefs close inshore.

(901) **Goat Harbor** is an inlet on the east side of the bay about 4 miles from Cape Puget. It affords good anchorage in 12 to 14 fathoms, sticky mud bottom, but is exposed to the swell from the southwest. A gravel and shingle bar with a least known depth of 5½ fathoms extends across the entrance. A rock awash is 0.2 mile west of the small islet off the north entrance point.

(902) Near the head of Puget Bay, and on the east side, is a small cove that affords shelter for small craft. A rock awash is about 100 yards off the south entrance point.

(903) **Cape Junken** is a bold, rounding headland with eroded bluffs and landslides. At the foot of Cape Junken are two steps that show up prominently from offshore. In thick weather this feature is valuable in identifying the cape. In 1998, a rock awash was reported about 0.4 mile south of Cape Junken in about 59°54.7'N., 148°38.15'W.

(904) **Johnstone Bay** is a large open bight west of Cape Junken. A black sand beach is across the head of the bay. Deep water extends close with 50 fathoms 0.5 mile of the beach. **Excelsior Glacier** terminates 0.5 mile north of Johnstone Bay and drains through a stream at the east end of the sand beach. An unnamed cove with a shingle beach is at the east entrance to the bay, just northwest of Cape Junken. It is wide open to the southwest and affords little shelter. A black rock, 35 feet high, marks the west entrance, and there is a low rock nearly awash at the east entrance.

(905) **Cape Fairfield** is a bold, rounding cape with eroded bluffs and many rockslides. A large pinnacle rock, 126 feet high, is off the southeast pitch of the cape.

(906) **Whidbey Bay**, a large open bight just west of Cape Fairfield, has a black sand beach at the head. Up the valley is a prominent hanging glacier.

(907) Depths shoal to 12 fathoms about 1 mile from the sand beach, and anchorage can be had in black sand and glacial silt. Both sides of the bay are foul, with numerous rocks and reefs extending 100 to 200 yards off the rocky beaches. A stream enters at the west end of the sand beach.

(908) **Cape Mansfield** is bold, with high eroded bluffs and rockslides. A small pinnacle rock awash at high water is about 0.3 mile off the cape. Deep water is close to this rock.

(909) Just west of Cape Mansfield is **Horsehead Bay**, approximately 1 mile wide at the entrance, with rocks awash extending 0.3 mile southeast at the west entrance

point. It is exposed to the south and has a sand beach at its head. Both sides of the bay are foul with numerous rocks and reefs. Except for this sand beach, the shore between Cape Mansfield and Day Harbor is rugged, with high bluffs and rockslides. Numerous rocks are at the foot of the bluffs and close offshore.

(910) **Day Harbor**, a spacious body of water just east of Resurrection Bay, is free from dangers except close inshore. Deep water extends to the head of the bay, which is formed by the moraine of **Ellsworth Glacier**. This glacier shows up prominently when entering the bay.

(911) **Fault Point**, the east entrance point to Day Harbor, terminates in a narrow point showing several remarkable faults in the rock formation.

(912) **Anchor Cove**, about 2 miles north from Fault Point, is a small cove affording excellent shelter for small craft. A short distance off the east shore of the cove near its head is a reef awash at high water. The shores are heavily wooded.

(913) **Bowen Anchorage**, 4 miles north of Fault Point, affords the best anchorage in Day Harbor. It is about 500 yards wide at the entrance and narrows gradually to the head of the cove. Anchorage can be had in the center in 14 fathoms, sticky mud bottom. In the entrance is a small reef cleared to 25½ feet. Bowen Anchorage is suitable for a vessel up to about 400 feet long.

(914) Deep water extends close up to the head of Day Harbor, and the 50-fathom curve is about 350 yards offshore. A flat in the northwest corner of the bay, northwest of Bowen Anchorage, affords anchorage 0.4 mile offshore in 15 to 18 fathoms.

(915) **Talus Bay** is a small cove on the west shore of Day Harbor, affording anchorage in 10 to 15 fathoms, but it is exposed to the southeast. A rock bare at low water is about 100 yards off the east entrance point.

(916) **Safety Cove** is a small deep cove about 1 mile south of Talus Bay. Anchorage can be had in the center of the cove in 25 to 30 fathoms.

(917) **Killer Bay**, a small cove about 2 miles south of Safety Cove, is too deep for convenient anchorage, with 32 to 39 fathoms in the middle of the bay. A rock, 15 feet high, is about 100 yards off the south entrance point.

(918) **Driftwood Bay** is about 3 miles north from Cape Resurrection. It is about 0.5 mile wide at the entrance and is free from dangers. Anchorage can be had in the middle of the bay in 25 to 30 fathoms, hard bottom. Small craft will find excellent shelter in a bight in the south shore of the bay.

(919)

Cape Resurrection to Thunder Bay

(920) **Cape Resurrection** (59°52.1'N., 149°17.0'W.), at the east entrance to Resurrection Bay, is a precipitous headland of solid rock, with little vegetation except some trees on the lower slopes. From the east two dome-shaped peaks, the north one the higher, show at the end of the cape, and a low saddleback of the peaks rises to higher mountains farther north. These are the only dome-shaped peaks in the vicinity, which assures easy recognition of the cape.

(921) **Barwell Island**, 0.4 mile south from Cape Resurrection, is small, bare, rounded, precipitous, and high.

(922) The passage between Barwell Island and Cape Resurrection is deep and clear, midchannel depths ranging from 43 to 48 fathoms. This passage is reported to be dangerous for small craft in east weather because of tide rips, confused seas and seas bouncing back off the cliffs of Cape Resurrection.

(923) **Resurrection Bay** extends about 16 miles inland north from Cape Resurrection. The depths are great throughout, and there are no dangers in the usual track of vessels. A flat extends 0.5 to 0.6 mile from the entire north shore at the head of the bay. The shores and islands are steep and high, with precipitous slopes in many places. The valleys are wooded up to about 1,000 feet. Anchorages, few and indifferent because of the great depths, are subject to strong williwaws.

(924) **Harding Gateway**, the south entrance to Resurrection Bay, is between Cheval and Rugged Islands.

(925) **Seal Rocks**, the southernmost land feature in the west approach to the bay, are a group of four small, rocky islets. The northernmost and largest is 278 feet high and has an arch through the middle. **Seal Rocks Light** (59°31'14"N., 149°37'47"W.), 285 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the summit of the largest islet.

(926) **Lone Rock** stands well southwest of Chiswell Islands and is a good mark. It is a round rock, 154 feet high, and has a rock covered at high water, about 0.1 mile north of it. The passage between Seal Rocks and Lone Rock is clear and is frequently used by vessels between Resurrection Bay and the coast southwest.

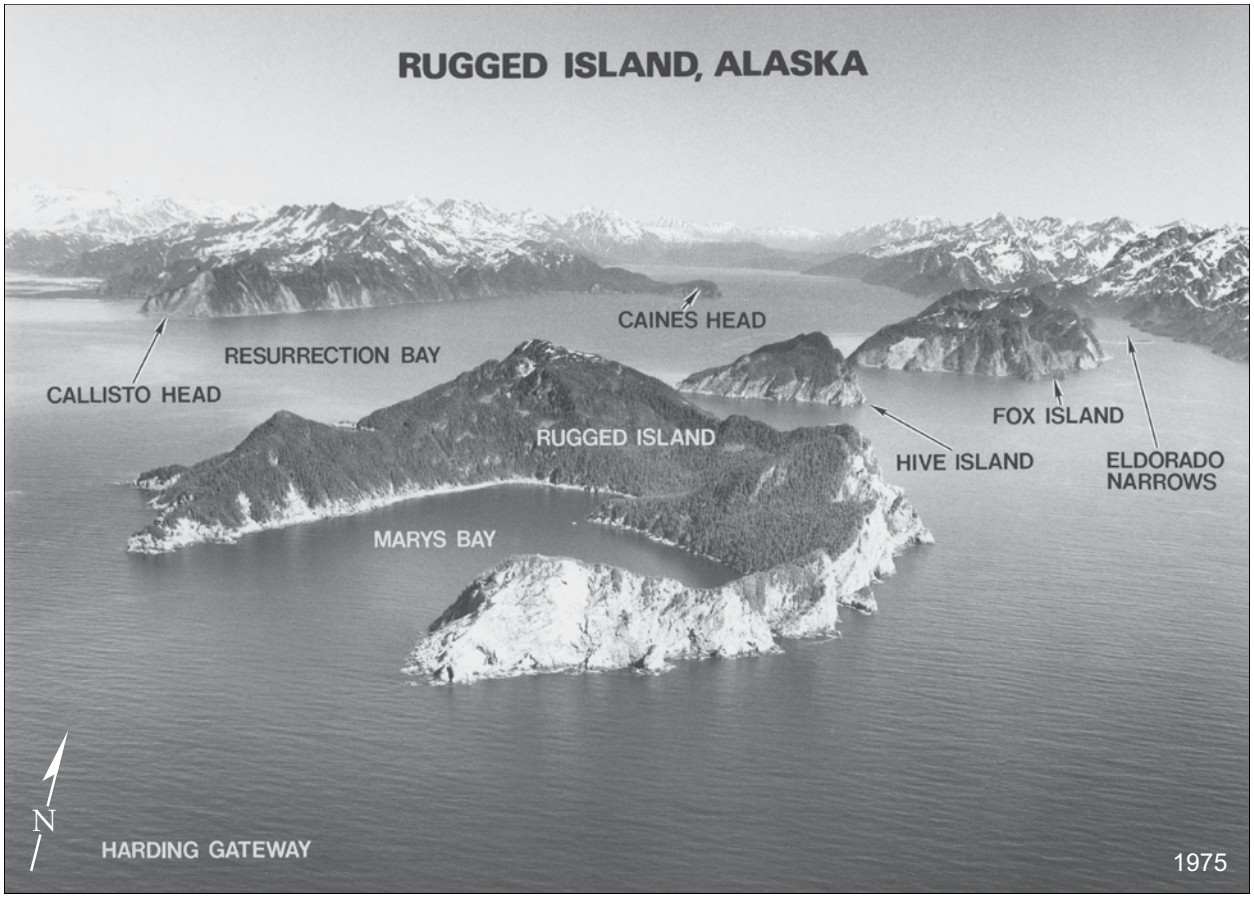
(927) **Chiswell Islands**, a group of high precipitous, rocky islands, on the west side of the approach to Resurrection Bay, are sparsely wooded, most have off-lying rocks and there are strong tidal currents between them.

(928) **Pilot Rock**, 9.5 miles southwest of Cape Resurrection, is a bare, rounded, rocky islet about 100 feet high. **Pilot Rock Light** (59°44'32"N., 149°28'12"W.), 100 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the highest part of the rock.

(929) **Agnes Cove**, just west of Cheval Island, is sheltered from the southeast but is too deep for convenient anchorage. However, it is reported that during east gales small vessels can find good anchorage in the E part of the cove.

(930) **Porcupine Cove**, about 4 miles south from Bear Glacier, offers a good anchorage for small craft in all except southeast weather. Two shoals are in the entrance to the cove. A depth of 1.6 fathoms is on the west side of the entrance in 59°50'42"N., 149°35'04"W. and 2.3 fathoms is on the east side of the entrance in 59°50'52"N., 149°34'27"W. Two islets are in the cove about 200 yards

(935)



off the west shore in 59°50'58"N., 149°35'17"W. At the head of the cove is a gray sand beach with stumps below the high-water line that indicates that there has been a subsidence of the beach. A depth of 7 fathoms is available about 400 yards from the head of the cove.

(931) **Bulldog Cove**, the first cove south from Bear Glacier, affords a good anchorage for small craft in southwest weather. In north weather it is exposed to winds sweeping off the glacier. The best anchorage is in the south bight in about 10 fathoms, sticky mud bottom.

(932) **Bear Glacier**, large and prominent, is on the west shore west of Cape Resurrection. It is inactive and has an earthy appearance.

(933) Toward the east shore in the entrance of Resurrection Bay are three large, high, rugged islands, named in order from south, Rugged, Hive and Fox. The passages between the islands are deep. Their shores are generally bold, but two rocks bare at low water are about 200 yards off the southeast end of Fox Island.

(934) **Marys Bay**, a large cove indenting the south shore of **Rugged Island**, affords fair anchorage in east weather. Anchor in the east part with Pilot Rock about on range with the south entrance point. An Army pier, in poor repair, is on the south shore of the cove. **Rugged Island Light** (59°50'18"N., 149°22'26"W.), 438 feet above the water, is shown from a square frame with a diamond-shaped red and white daymark on the southeast end of the island.

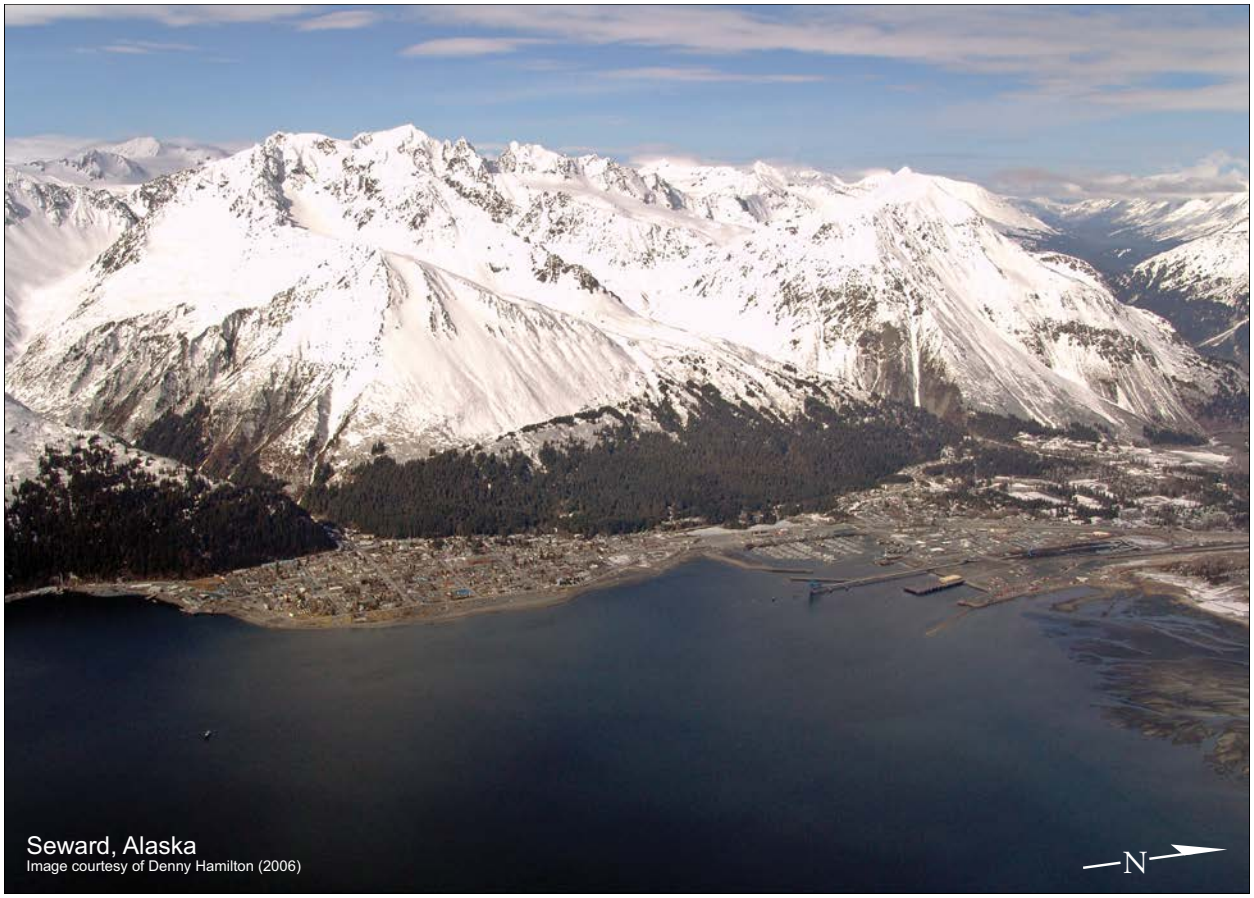
(936) **Sunny Cove**, the south bight on the west side of **Fox Island**, is the best anchorage in Resurrection Bay. No ocean swell makes into the cove, and it is sheltered from all but west winds. The williwaws are bad with east winds. The cove, wide and clear, has anchorage in the middle, 300 to 800 yards from its head, in 15 to 25 fathoms, muddy bottom.

(937) Small craft can also anchor in the southeast arm of **Humpy Cove**, the two-arm bay on the east shore 1.7 miles north-northeast of Fox Island. In the winter this bay affords better protection than Sunny Cove, which is bad for small craft in northwest weather. The anchorage is in 7 to 8 fathoms, sandy bottom. The narrow bight extending east is filled with a sandflat that bares at low water.

(938) **Thumb Cove**, on the east shore northeast from **Caines Head**, is 0.8 mile wide. The cove is subject to strong williwaws in east weather. In north weather, good protection is reported close to the bluff just west of **Likes Creek**, at the north end of the cove. Anchorage can be selected 0.4 to 0.5 mile from its head in 25 to 35 fathoms, soft bottom. A flat makes out 200 to 300 yards from the north shore for a distance of 0.4 mile from its head. The point on the north side of the entrance is marked by a light. Caines Head is marked by a light.

(939) **Seward** is on the west side of the north end of Resurrection Bay. The town is the south terminus of the Government-owned Alaska Railroad. Seward is 1,234 miles from Seattle via the outside route from Strait of

(940)



Juan de Fuca and 1,398 miles via the inside passage to Cape Spencer.

(941)

Prominent features

(942) Cape Resurrection, Bear Glacier and the mountains that rise precipitously from the shores of the bay are conspicuous in the approaches.

(943)

Channel

(944) The approach to Seward is in depths of over 50 fathoms and is clear of obstructions.

(945)

Anchorages

(946) Suitable anchorage in 30 fathoms is available for deep-draft vessels at the head of the bay in 60°06.5'N., 149°22.1'W. and in 60°06.5'N., 149°25.3'W.

(947)

Dangers

(948) The bay is clear but care should be taken when approaching the head of the bay to avoid the flats that extend 0.6 mile from the head.

(949) Submerged ruins and obstructions exist in an area about 450 yards channelward of the high water line at Seward.

(950)

Routes

(951) Eastward: From the entrance point, 0.6 mile south-southwest of Barwell Island, set courses to pass 0.6 mile west of the southwest part of Fox Island, 0.5 mile east of Caines Head Light, and thence to the waterfront at Seward.

(952) Westward: From the entrance point, 1 mile east of Pilot Rock, set courses to pass 2.5 miles west of the south extremity of Rugged Island, 0.5 mile east of Caines Head Light, and thence to Seward.

(953)

Weather, Seward and vicinity

(954) Winter gales strike suddenly and considerable sea makes into the bay with south winds. At Seward the prevailing wind is from the south from April to September and north during the remainder of the year. The high mountain ranges give some protection, but the region is subject to violent williwaws. The annual snowfall averages 78 inches (1981 mm).

(955)

Pilotage, Seward

(956) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. (See **Pilotage, General** (indexed), chapter 3, for the pilot pickup station and other details.)

(957) Vessels en route to Seward can contact the pilot boat by calling "SEWARD PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(958)

Towage

(959) Tug services are available 24 hours a day at Seward and can be obtained through ships' agents.

(960)

Quarantine

(961) A U.S. Public Health Service Contract Physician is located at the hospital in Seward. (See Appendix A for additional information.)

(962) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) There is a hospital in Seward.

(963)

Coast Guard

(964) A Coast Guard cutter is stationed at Seward in the small-boat harbor.

(965)

Wharves

(966) Seward has a deep-draft terminal, coal terminal, ferry terminal, small-boat harbor and many shallow-draft wharves.

(967) **Alaska Railroad Cargo Dock:** northwest corner of Resurrection Bay; west side of breakwater; 500-foot face; 570 feet berthing space with dolphins; 35 feet alongside; deck height, 24 feet; receipt and shipment of conventional and containerized general cargo; landing for passenger-and-vehicular ferry, and mooring vessels; railroad connections; owned by Alaska Railroad Corp and operated by Alaska Railroad Corp and various operators.

(968) **Alaska Railroad Cruise Dock:** 400 feet west of Cargo Dock; 200-foot face; 38 feet alongside; 735 feet each side; 33 to 35 feet alongside; deck height, 24 feet; receipt and shipment of conventional and containerized general cargo; occasional receipt of petroleum products; mooring cruise ships; landing for passenger-and-vehicular ferry, and fueling vessels; railroad connections; owned by Alaska Railroad Corp and operated by Alaska Railroad Corp and various operators.

(969) **Coal Dock:** 500 feet west of Cruise Dock; 1,763 feet of berthing space with dolphins; 52 feet alongside; shipment of coal; owned by Hyundai Merchant Marine America, Inc. and operated by Seward Terminal, Inc.

(970) **Seward Small-Boat Harbor**, adjacent west of Coal Dock, is protected by breakwaters. The entrance and breakwaters are marked by lights. The harbor has 12 feet alongside the docks for mooring commercial vessels, recreational craft, excursion vessels, U.S. Coast Guard vessels and tugs.

(971) The basin has about 550 berths with 2,500 feet of transient moorage available. The harbormaster assigns berths. Vessels over 150 feet long are requested to contact the harbormaster on VHF-FM channel 17 before entering the small boat harbor. Water, electricity, limited pump-out facilities, gasoline and diesel fuel are available. Two launching ramps and a 50-ton boatlift are in the basin. The basin is owned and operated by the City of Seward.

(972) The **City "T" Dock** and **Seward Fisheries Wharf** are at the north end of the small-boat harbor with depths alongside of 13 feet and deck heights of 18 feet. These facilities are used mostly by fishing vessels and are owned by the City of Seward.

(973) **University of Alaska Institute of Marine Science Wharf:** south side of the City of Seward; 150 feet of berthing space; 40 feet alongside; deck height, 18 feet; water, electricity and a 20-ton mobile crane are available for the research vessels using the wharf; owned and operated by the University of Alaska Institute of Marine Science.

(974) **Note:** A section of sheet metal, submerged 3 feet, extends 10 feet southwest of the southwest end of the wharf. Also, a deepwater intake pipe extends 900 feet seaward from the wharf. Mariners are advised to seek local knowledge before approaching the wharf.

(975) **Smoky Seafoods Wharf:** 300 yards south-southwest of the University of Alaska Wharf; 250-foot face; 14 feet alongside; deck height, 18½ feet; receipt of seafood and icing fishing vessels; owned and operated by Smoky Seafoods, Inc.

(976)

Supplies

(977) Some marine supplies are available and there are stores in town. Fuel is available from numerous wharves in Seward and on the east side of Resurrection Bay at the North Dock.

(978)

Repairs

(979) Limited small boat hull and engine repair facilities are available. A 50-ton boat lift is at the Small Boat Harbor.

(980) **Seward Marine Industrial Center**, is in a basin on the east side of Resurrection Bay, just above the mouth of **Fourth of July Creek**. The basin is protected on the west by a rip-rap breakwater, marked by a private light on the outer end. The entrance to the basin is marked by a private light and daybeacons. In 2019, the basin had a depth of 17 feet. Local knowledge is recommended for larger vessels attempting to enter the basin. A 400-foot berth is on the north side of the basin and a floating dock for smaller vessels is on the east side. Services available include a 5,000 long-ton marine lift and a 330 long-ton mobile lift owned by the City of Seward and operated by JAG Alaska Shipyard.

(981)

Communications

(982) The Alaska Railroad maintains service throughout the year from Seward to Anchorage and Fairbanks; large amounts of supplies and equipment bound for all parts of Northern Alaska are moved over the railroad. Seasonal passenger service is available. The Alaska Marine Highway System maintains ferry service to

Valdez-Cordova and Kodiak-Seldovia-Homer. Charter air service is available. Seward has scheduled highway transportation to Anchorage.

(983) Seward has radio and cable communications with the other Alaska ports and Seattle. Telephone communications are maintained.

(984) **Aialik Bay**, west of Resurrection Bay, extends 16 miles inland from the north end of Harbor Island. It is enclosed by rugged mountains and glaciers and is of no importance except occasionally as an anchorage. The shores are steep and high, with precipitous slopes in many places, and are partly wooded in the south part of the bay to an elevation of about 1,000 feet. The north shores are covered with alders in places.

(985) Aialik Bay is deep except for rocks near the shores and a bar that crosses the bay from the glacial flat fronting **Pedersen Glacier**. The least depth found on the bar in midchannel is 5.1 fathoms, but it and the broken ground near the shores at the entrance of Holgate Arm are likely to have boulders and less water than charted. As a measure of caution, vessels should avoid the passages among the islands in the mouth of the bay. To take advantage of smoother water, small vessels coasting southwest from Resurrection Bay sometimes enter the bay at Aialik Cape, pass south of Chat Island, round the north end of Harbor Island and pass out at Granite Cape.

(986) **Chat Island** is a steep, high, rocky, and wooded island; two conspicuous pinnacles are close to its south shore. Between it and **Aialik Cape** are a smaller island and a number of rocks.

(987) **Harbor Island** is the largest of a group of high, precipitous, rocky, and partly wooded islands in the mouth of the bay and northwest of Chiswell Islands. The shores in many places are sheer cliffs, especially the east shore of **Natoa Island**. Midway in the channel between **Beehive Island** and the small island at the southeast end of the Harbor Island group is a rock that is awash at lowest tides.

(988) Small vessels proceeding along the coast use the pass locally known as **Petes Pass**, between Harbor Island and the first island to the east. A depth of 2.5 fathoms is available in the pass. Vessels using this passage should favor Harbor Island when passing through this narrow opening.

(989) **Granite Cape**, the south end of Granite Island, is bold, with almost vertical rocky bluffs. Rocks awash at low water, are a short distance off the cape. Between Granite Cape and the main shore are two small, high, wooded islands with a rock about 10 feet high between them.

(990) **Twin Islands**, in Dora Passage, resemble each other in contour and are high and wooded. The arch off the south end of the north island is conspicuous.

(991) **Holgate Arm** is the largest indentation on the west side of Aialik Bay. The arm is too deep for anchorage and terminates in **Holgate Glacier.**

(992) **Slate Island**, long, narrow, and high, is close to the west shore near the head of the bay. The head of Aialik Bay consists of sunken rocks and icebergs that are discharged from the glaciers feeding into the bay.

(993) **Coleman Bay**, **Tooth Cove** and **Bear Cove** are bays on the east side of Aialik Bay. None of them afford good anchorage except the southeast arm of Coleman Bay. It is reported that good protection from east and south weather can be had for small craft in about 6 fathoms.

(994)

Anchorages

(995) The anchorages in Aialik Bay are few and indifferent because of the great depth. With south weather a swell makes well into the bay.

(996) The best anchorage is in 30 fathoms, good holding bottom, near the head of **Paradise Cove** in **Three Hole Bay**, on the east side of Aialik Bay about 3 miles north of Harbor Island. Small craft find good shelter along the south shore of the cove in 3 to 10 fathoms, mud bottom.

(997) Anchorage can be had in 28 fathoms near the center of the cove on the west side of the bay, west of the north end of Harbor Island. On each side of the entrance to this cove is a sharp conical, high, wooded hill. Close inshore off the point at the north entrance is a sharp pinnacle rock about 12 feet high; about 600 yards northeast of this pinnacle is **Hub Rock** which covers at high water.

(998) Vessels can find convenient anchorage in the area about 1 mile southeast of the south end of Harbor Island. There is good shelter here with winds from north around to southeast.

(999)

Ice

(1000) There are discharging glaciers at the heads of Aialik Bay and Holgate Arm, and ice is frequently driven to Harbor Island by north winds. Holgate Arm and the entire bay above the bar are frequently filled with ice.

(1001) **Harris Bay** is about 5 miles northwest of the peninsula terminating in **Aligo Point**. The bay is deep throughout. The 50-fathom curve extends to within 0.5 mile of the head of the bay. Inside the 50-fathom curve, at the head of Harris Bay, there is a rock submerged 7 fathoms in about 59°43'37.5"N., 149°51'59.7"W.

(1002) **Granite Island** is a high, long narrow island. Its shores are bold and its slopes are very steep except at the north end.

(1003) **Taz Basin** is a remarkable cliff-walled harbor on the southwest side of Granite Island about 2 miles from its northwest end. It has depths of 15 fathoms and is an ideal shelter for launches. The entrance is narrow and has a rock 5 feet high in the middle. It is reported that vessels enter on the north side of the rock where there is a reported depth of about 2 fathoms. Once inside there is plenty of room. The channel south of the rock is shoal and foul with rocks nearly awash at low water.

(1004) **Granite Passage**, which leads from Aialik Bay to Harris Bay, is deep and free from dangers. At the narrowest part of the passage, just north of Fire Cove, a ridge with 4 fathoms extends across the passage. The ridge affords convenient anchorage in any but heavy weather.

(1005) **Fire Cove** is the southernmost of three coves in the mainland opposite Granite Island. It is deep throughout and affords no satisfactory anchorage. The shores are precipitous and rocky.

(1006) **Ripple Cove**, the next cove to the north, is also deep and affords no anchorage except in 28 to 30 fathoms, hard bottom. The third cove is also deep and not suitable as an anchorage.

(1007) **Crater Bay** is a large inlet about 1 mile north from the north end of Granite Island. A good anchorage will be found in the bight just east of the projecting point on the south shore, in 25 fathoms, sticky bottom. This anchorage is well protected but is subjected to severe williwaws. In the south cove at the head of Crater Bay is a stream where water can be obtained.

(1008) **Cataract Cove**, just north from Crater Bay, is another of the characteristic small deep bays of this region. It is exposed to the south and is not recommended as an anchorage. Water can be obtained from cascades at the head of the bay.

(1009) A terminal moraine bar, about 4 miles north of Granite Island, is at the head of Harris Bay and separates the bay from **Northwestern Fiord**. The passage from Harris Bay to the Fiord is locally referred to as **Northwest Passage**. The passage, about 600 yards from the east shore, is subject to huge swells and changes. The passage should only be entered by small craft with local knowledge. In 2000, a depth of 3.2 fathoms was in the passage. The Fiord extends about 9 miles northwest and may be filled with floating ice. **Northwestern Lagoon**, in the southwest part of the Fiord, is separated from the Fiord by the terminal moraine bar covered 0.1 fathom and is also subject to changes. Depths of 12.7 fathoms are in the lagoon. A large island, about 5.4 miles northwest of the passage, is steep and barren with a height of 1,263 feet. A steep-walled fiord extends about 3 miles north from this island and heads into **Northwestern Glacier**, from which small icebergs are discharged. An inlet over 1 mile long and with shoals at its head is southwest of the island. In 2009, shoaling to bare was reported at about 59°46'59"N., 150°03'51"W. Most of the shoreline of Northwestern Lagoon is barren as a result of the recent rapid recession of the glaciers.

(1010) **Harris Point**, a prominent point on the west side of the entrance to Harris Bay, is easily recognized by a succession of rocks and islets that extend 0.3 mile off. The outer rock of this group is 78 feet high.

(1011) **Cup Cove** is a small indentation just north of Harris Point. It has depths of 5 to 9 fathoms, mud bottom, and affords good anchorage for small craft except that it is exposed to east winds.

(1012) **Sandy Bay** is an indentation about 1 mile long between Harris Point and Two Arm Bay. The depths decrease gradually from 20 fathoms at the entrance to 3 fathoms at the head with sand bottom throughout. It is exposed to the south and suitable for anchorage in fine weather only.

(1013) **Two Arm Bay** has Paguna Arm on the north and Taroka Arm on the west.

(1014) **Surok Point** is on the east side of the entrance to Two Arm Bay. It is bold and high, with deep water extending close up.

(1015) **Paguna Arm** is deep and affords no anchorage except at the very head, where vessels may anchor in 20 to 25 fathoms, hard bottom. There are several coves along the east shore where small craft can find anchorage close to the beach. The shores are steep and precipitous except for a small sandspit on the east shore near the head. There are numerous places in Paguna Arm where water can be obtained.

(1016) **Bear Point** is a bold, high point separating Paguna and Taroka Arms. A group of rocks extend 100 yards off the point.

(1017) **Taroka Arm** is deep but affords anchorage near the head in 20 to 25 fathoms, hard bottom with occasional patches of sand and mud. Small craft can find shelter in several of the bights along the south shore.

(1018) **Cloudy Cape**, on the south side of the entrance to Two Arm Bay, is bold and high. On the coast about midway between Cloudy Cape and Thunder Bay are lines of corrugated strata on two light-gray cliffs.

(1019) **Thunder Bay** is 2 miles wide at the entrance and about 2.5 miles long with the upper end extending in an east direction. Safe anchorage for small craft can be had in the cove at the head of the bay in 10 to 20 fathoms, mud bottom. Water is available from several waterfalls at the head of the bay. A cup-shaped bight on the north side of the entrance to the bay affords anchorage in 12 fathoms, gray sand and rock bottom. A landslide is on the coast about 0.5 mile southwest from Thunder Bay.

(1020)

Black Mountain to Front Point

(1021) **Black Mountain** (59°32.0'N., 150°11.5'W.), the highest peak between Thunder and Black Bays, has a large granite boulder at its summit.

(1022) The point on the north side of the entrance to **Black Bay** is marked by a 660-foot hill; reddish-brown tinted cliffs form the base on its seaward side. The island immediately adjacent to the point is wooded, 150 yards in diameter and 165 feet high.

(1023) The northwest arm of Black Bay is not recommended as an anchorage because it is too deep and narrow. The northeast arm of the bay is 0.4 mile wide. There is safe anchorage close in near the head in 16 to 20 fathoms, mud bottom. A shoal of gravel and boulders extends 100 yards offshore on the east side of the head of this arm. The anchorage is subjected to usual williwaws. A high, light-gray granite peak separates the two arms of Black Bay.

(1024) The point 1.2 miles south of the west entrance point of Black Bay has a large granite rock about 150 feet high close to the south side. The rock makes a good mark when it is seen clear of the point. Between this point and Black

Bay is a low grassy wooded ravine that extends inland from the coast. Between the ravine and Black Bay are rocky, almost perpendicular cliffs several hundred feet high and light gray in color. The open bay to the west of the point is not recommended as an anchorage.

(1025) **Nuka Bay** has its main entrance between Pye Reef and Nuka Point. The bay may be entered from the east through McArthur Pass or Wildcat Pass and from the west through Nuka Passage. It extends into the mainland above the passes in two long arms. Good protected anchorage can be found in several small bays and coves. There are several small gold mines in the West Arm and North Arm.

(1026) Nuka Bay is generally deep throughout. There is, however, a considerable area of irregular depths, less than 25 fathoms, adjacent to the west shores of the lower bay.

(1027) **Pye Islands**, on the east side of Nuka Bay, are three rugged mountainous islands, densely wooded on the lower slopes. **Outer Island**, the outermost and smallest, has a high prominent peak at its east end. A good landmark, this peak is part of a ridge whose top is covered with huge granite boulders. A prominent bare rock, 70 feet high, is 20 yards off the southweast shore of the island. A large reef, part of which shows at all stages of tide, is 300 yards south of the rock. A large, bare, granite rock, 82 feet high, is close to the southwest point of the island.

(1028) A 2½-fathom shoal that breaks is 0.4 mile southeast of the east point of Outer Island. A 10-fathom shoal is 1.8 miles 130° from the point, and a 9-fathom shoal is 0.9 mile 200° from the same point.

(1029) The south shore of Outer Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 224.103**, chapter 2, for limits and regulations.)

(1030) **Pye Reef**, awash at high water, is 2.1 miles 205° from the high peak of Outer Island. The line of the west ends of Outer Island and Rabbit Island barely clears to the west of the reef, and the line of the east end of Outer Island and Hoof Point on Ragged Island leads 0.4 mile east of it.

(1031) **Rabbit Island**, the second of the Pye Islands, is densely wooded. The east shore of the island is bold and rocky, with no dangers except close inshore.

(1032) Between Outer and Rabbit Islands is a deep body of water with no good anchorage. At its east end is a small opening called Kitten Pass. The pass is between a small islet and a group of three bare rocks to the north. The islet has a few scrub trees on it. A rock, covered 13 feet and marked by kelp, is in the pass; it is nearer to the islet than to the rocks.

(1033) **Kitten Pass** is only 65 yards wide. By favoring the group of rocks on the north side, a depth of 5 fathoms can be carried through; but because of strong tidal currents and the narrowness of the pass, it should be attempted only by very small craft, at slack water and with a smooth sea. In rough weather, breakers obstruct the pass.

(1034) **Ragged Island**, the third and largest of the Pye Islands, is very mountainous and is partly wooded on the lower slopes. The island is broken by numerous coves and bights, most of which are too deep to afford good anchorage. The few known dangers around this island are the rocks close inshore, a rock awash at high water 200 yards off the rounding point 1.2 miles north of Wildcat Pass and the rocks off Hoof Point.

(1035) **Hoof Point**, 3.5 miles northeast of Wildcat Pass, is the southeast end of the east part of Ragged Island. Bold and rocky, it is at the base of a detached hill. A bare granite rock, 105 feet high, 60 yards off the point, makes a good mark. Bare ledges are 400 yards south of the point. A rock, covered at high water 0.5 mile south of Hoof Point, can be cleared to the south by keeping open water showing through Wildcat Pass. Fair anchorage for small craft can be had in the cove behind Hoof Point, in 10 to 20 fathoms.

(1036) **Wildcat Pass**, between Rabbit and Ragged Islands, is about 400 yards wide in its narrowest part, and is deep and free from danger. A shoal marked by kelp with a least depth of 6 fathoms over it is in the center of the west approach to the pass, 400 yards west of the line of the west ends of Rabbit and Ragged Islands. This shoal has deep water all around it. In the east approach the only known dangers are the rocks off Hoof Point. In the narrow part of the pass a bank, with 8 fathoms over it, extends from the north point to the center of the pass, but 20 fathoms and over can be found 100 yards off the south point. The tidal currents in Wildcat Pass have an estimated velocity of 4 to 5 knots.

(1037)

Anchorages

(1038) Anchorage can be found in the cove just south of the pass, in 24 to 27 fathoms, rocky bottom. Small vessels can find indifferent anchorage in the cove in the west end of Rabbit Island, close inshore, in 8 to 10 fathoms, rocky bottom.

(1039) **Wildcat Cove** is a large arm in the southeast shore of Ragged Island, 2.8 miles north from Wildcat Pass, and is the second cove west from Hoof Point. Protected anchorage for small craft can be had about 100 yards from the head of this cove in 11 fathoms, mud bottom. There is also anchorage in 22 fathoms, mud bottom, opposite the indentation on the east shore of the cove.

(1040) **Roaring Cove** is a small bight in the west shore of Ragged Island, 2 miles north from the west approach to Wildcat Pass. A small wooded island is on the north side of the entrance, and a wooded point, resembling an island, is on the south side. Partially protected anchorage for small craft can be found in the center of this cove in 4 to 5 fathoms, mud bottom.

(1041) **McArthur Pass**, between Ragged Island and the mainland, is about 120 yards wide in its narrowest part but is straight and easily navigated. **McArthur Pass Light** (59°27'47"N., 150°20'12"W.), 45 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the north side of the pass.

(1042) There are no known dangers in the approaches, and a clear channel 60 yards wide is in the center of the narrowest part of the pass, with a depth of 6¼ fathoms. Both shores of the pass are lined with thick kelp that extends approximately out to the 5-fathom curve. The bottom is composed of smooth rock and small boulders. A spit of gravel and boulders makes out from the south shore, in the narrowest part, with deep water close-to.

(1043)

Currents

(1044) The tidal currents in McArthur Pass have an estimated velocity of 3 to 4 knots. All except low-powered vessels will have little difficulty through the pass at any stage of tide, but east weather and ebb tide may cause dangerous seas in the entrance. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1045) Extensively used by small vessels proceeding along the coast, McArthur Pass affords a shorter and more protected route than the route outside the Pye Islands, and is especially valuable when used in connection with the route through Nuka Passage.

(1046) **McArthur Cove** is a large cove in the north side of Ragged Island, 1 mile southwest from the narrowest part of McArthur Pass. Large vessels can find good anchorage near the head of this cove in 28 to 30 fathoms, mud bottom; small craft anchor closer inshore in 5 to 10 fathoms, good holding bottom and good shelter. The two small coves on the north side of Ragged Island, west of McArthur Cove, are deep and clear of dangers but are subject to strong williwaws in stormy weather. Indifferent anchorage for small craft can be found in the first cove to west, in the center of the bight near its head, in 16 to 18 fathoms, rock and gravel bottom; or in 11 to 12 fathoms in the bight on the south side of the cove, near the center.

(1047) **Morning Cove**, on the south side of the east approach to McArthur Pass, affords protected anchorage for small craft near its head in 10 to 12 fathoms, rocky bottom.

(1048) **Chance Cove**, on the north side of the east approach to McArthur Pass, is deep and is a poor anchorage. **Chance Lagoon**, at the head, has a large flat rock in its entrance. The passage east of this rock is foul, but a depth of 8 feet can be carried into the lagoon through the passage west of the rock, the best water being found by favoring the west side of the passage. Protected anchorage for small craft can be had in this lagoon in 8 to 12 fathoms, mud and rock bottom, but anchors will not hold well in heavy weather.

(1049) Small vessels can find good anchorage in the small bight on the south side of McArthur Pass, close west of the narrowest part, in 7 to 11 fathoms, mud bottom. This anchorage is subject to strong williwaws, and local fishermen prefer to anchor close inshore, in the open bight on the north side of the pass, northwest from McArthur Cove, in 10 to 15 fathoms, rocky bottom.

(1050) **McCarty Fiord (East Arm)**, the northeast extension of Nuka Bay, has average depths of over 100 fathoms except for a terminal moraine shoal, with depths of 10 fathoms or less, which crosses the fiord between McCarty Lagoon and James Lagoon. Between the moraine shoal and **McCarty Glacier**, 15 miles north, water depths of more than 150 fathoms have been sounded, but caution should be exercised as the area has not been surveyed. McCarty Glacier, which ends in shoal water at the head of the fiord, discharges occasional small icebergs. The north part of McCarty Fiord is barren because of the recent recession of McCarty Glacier.

(1051) The square-shaped bay on the east side of McCarty Fiord, 2 miles north from the west entrance of McArthur Pass, affords indifferent anchorage off its southeast side in 12 to 15 fathoms, rocky bottom. The small bight on the northeast side of the bay is foul.

(1052) **Moonlight Bay**, on the east side of McCarty Fiord, about 1.8 miles from the terminal moraine, is deep and clear. Large vessels can find good anchorage near its head in 15 to 30 fathoms, sticky mud bottom. Small vessels can find better protection in **Midnight Cove**, a long bight making off to east from the north side of Moonlight Bay, but they must avoid a 5-foot shoal about 300 yards off the north side of the entrance.

(1053) Good anchorage is available in the middle of the cove, just past the turn, in 9 to 10 fathoms, mud bottom, or near the head of the cove in 14 to 16 fathoms, mud bottom. A spit, bare at low water and covered with boulders, extends out 150 yards from the head of the cove. This cove is the best anchorage for small vessels in McCarty Fiord, as it is doubtful that ice would drift in here in quantity. Midnight Cove funnels strong easterly winds. During these conditions, small vessels may find milder conditions along the southern and eastern shore of Moonlight Bay.

(1054) The small cove just north from Moonlight Bay has depths of from 5 to 8 fathoms, mud bottom, but with west winds is apt to be filled with ice. A narrow spit, bare at low water and covered with boulders, extends out from the head of the cove for 75 yards.

(1055) **McCarty Lagoon**, on the east side of McCarty Fiord and about 1.5 miles north of Moonlight Bay, has not been surveyed. The entrance nearly bares at low water, but shallow-draft vessels can enter at high tide. The tidal currents in the entrance have an estimated velocity of 8 to 12 knots, so that high water slack is the only time to enter. Depths of 15 to 20 fathoms, mud bottom, are reported inside the lagoon. The entrance is narrow, with sand and mud bottom. The lagoon probably freezes over in the winter.

(1056) **James Lagoon**, on the west side of McCarty Fiord opposite McCarty Lagoon, is about 1 mile long and 0.8 mile wide. There is a prominent 90-foot dirt cone on the northeast side of the entrance. The entrance, about 0.8 mile long, has a least midchannel depth of 3 feet. In

entering, favor the west shore to avoid a long sandspit, partly bare at low water, which makes out to south for about 300 yards from the west end of the large, flat, sandy island on the east side of the channel. The tidal currents in the entrance have an estimated velocity of 6 to 10 knots.

(1057) Vessels should not attempt to enter James Lagoon except at high water slack. The entrance is often obstructed by ice that is carried through the entrance into the lagoon. The lagoon has general depths of 8 to 15 fathoms, mud bottom. Vessels should approach the shore with caution, since large mudflats make off for a considerable distance, especially along the north shore. The lagoon may freeze over in the winter.

(1058) **Harrington Point**, the south tip of the peninsula separating McCarty Fiord and West Arm, is bold and rocky, with rocks close inshore. A bank with a least depth of 10 fathoms is 0.6 mile south of the point. Another bank, with a least found depth of 11 fathoms, is 0.5 mile west of a large rock, 35 feet high, close to the southwest side of the peninsula.

(1059) **West Arm** of Nuka Bay is about 7 miles long in a northwest direction from Harrington Point. **Nuka River** and **Ferrum Creek** empty into **Beauty Bay**, the head of West Arm. A large mudflat makes out from the head of Beauty Bay with deep water close-to.

(1060) **Shelter Cove**, on the south side of Beauty Bay, is small but affords anchorage with moderate swinging room in 14 to 16 fathoms, mud bottom. At the head of the cove is a grassy flat, in front of which is a large mudflat that covers at high water.

(1061) **Diablo Peak**, on the west side of Beauty Bay, is a good mark.

(1062) **Yalik Bay**, on the west side of West Arm, opposite Harrington Point, has a shoal with a least found depth of 3½ fathoms in midbay, 1.2 miles from the entrance. Depths of over 20 fathoms can be found all around this shoal, the better channel lying to south. This shoal is the only danger in the bay except rocks close inshore and two rocks, bare at low water, 150 yards off the north shore 0.6 mile from the head.

(1063)

Anchorages

(1064) Anchorage can be had in the center near the head in 14 to 16 fathoms, mud and gravel bottom, but there is limited swinging room for large vessels. Small vessels can find partially protected anchorage in the small bight on the north side of the bay, 0.5 mile from the entrance, in 3 to 5 fathoms, and sand bottom.

(1065) A reef makes out for 0.2 mile east from Yalik Point, the south entrance point to Yalik Bay. A least depth of 2 fathoms was found at the outer end of this reef. A rock, covered 1 foot and possibly marked by kelp, is about 0.2 mile off the north entrance point to Yalik Bay.

(1066) **Surprise Bay** indents the east side of West Arm. Anchorage can be had 0.3 mile from the entrance to the lagoon at its head, in 17 to 20 fathoms, mud bottom.

(1067) **Palisades Lagoon**, at the head of Surprise Bay, has a narrow entrance 40 yards wide and 350 yards long that is too narrow and crooked to be navigated by any except very small vessels. A depth of about 4 fathoms can be carried by favoring the east side of the entrance until past the point on the west side, to avoid a rock lying east of this point; thence favor the west side of the channel into the lagoon. A large sandspit with boulders on it, is on the east side of the entrance of the inner end.

(1068) General depths in the lagoon range between 18 to 20 fathoms, mud and rock bottom, and afford secure anchorage. The lagoon may freeze over in winter. **Babcock Creek**, a small stream, empties into the lagoon over a large sandflat that uncovers at low water.

(1069) **Ariadne Cove** is behind prominent **Ariadne Island** on the south side of the entrance to Surprise Bay. There is good anchorage for small vessels in this cove in 5 to 10 fathoms, mud bottom, but in the winter, with northwest winds, the cove becomes quite rough. There are two entrance channels, one on each side of Ariadne Island. The north entrance has a rock, bare at low water, near midchannel southeast of the island; the best water is east of this rock, but care should be taken to avoid reefs that make out from the north shore of the cove.

(1070) The west entrance has a shoal of 2½ fathoms in midapproach. A reef bare at low water makes off for 125 yards from the point on the south side of the entrance. The best water in this entrance is found by favoring the island, being careful to avoid a reef awash at high water that extends 60 yards south from the second point from the entrance on the south side of the island.

(1071) **Quartz Bay** is on the east side of West Arm, 4 miles northwest from Harrington Point. **Beautiful Isle**, a wooded islet with a cluster of bare rocks, is on the south side of the entrance. A shoal with a least depth of 31 feet is 300 yards west. Another shoal is 0.2 mile off the north shore of the entrance. A rock, reported covered 6 feet, is in the south part of the shoal in about the middle of Quartz Bay. Anchorage can be found in the center of the bay, 0.3 mile from its head, in 14 to 18 fathoms, mud bottom. The 10-fathom curve is about 325 yards from shore at the head of the bay. The water shoals very rapidly inside this curve.

(1072) **Moss Point** separates Beauty Bay from North Arm. It has a number of grass-covered rocks and wooded islets close-to.

(1073) **North Arm** branches off for 5 miles to north from West Arm. A large flat back of the head of the arm is covered with grass and alders, in front of which is a mudflat that covers. Deep water approaches to within 250 yards of the head of the arm and to within 100 yards of the low water line.

(1074) **Pilot Harbor** is on the east side of North Arm about 1 mile from its head. A bare rock, 3 feet high, is 275 yards off the south point of the entrance and a submerged rock is 100 yards northeast. A large bare rock, 4 feet high, is 125 yards south of a wooded islet close off the north point of the entrance. There is a clear entrance between these rocks. A large shoal area, 200 to 300 yards wide and

mostly bare at low water, extends across the head of the bay. Entering in midchannel, a secure anchorage will be found in the middle in 14 to 16 fathoms, mud bottom.

(1075) Small vessels can anchor 100 yards to west of the point that resembles a small wooded islet, on the northeast side of Pilot Harbor in 5 to 8 fathoms, mud bottom. This is the best anchorage for small craft in North and West Arms in stormy weather.

(1076) A small cove, on the west side of North Arm about 1 mile from its head, is very deep and has no anchorage. A large, prominent waterfall, with a sheer drop of about 900 feet, is about 1.5 miles northwest from the head of the cove.

(1077) **Nuka Island**, on the west side of Nuka Bay, is mountainous and densely wooded on the lower slopes in the north part and grass covered in the south part. The east shore rises precipitously to the mountain tops and is bare shale and talus formation. The west shore, bordering on Nuka Passage, is broken up into numerous bays and coves.

(1078) **Nuka Point**, the south end of Nuka Island, is fairly prominent. This point is formed by a peninsula with a high peak near its inshore end. The peninsula is connected with the main part of the island by lowland; from a distance it appears to be an island. The east and south shores rise in sheer cliffs, making a landing impossible. Two rocks about 4 feet high are 0.3 mile off the point east of the peak, and a reef covers the area inshore of them.

(1079) **Nuka Rock**, 4 feet high and 20 feet across, is 0.4 mile south of the southeast tip of Nuka Point. Irregular depths of less than 25 fathoms extend about 3 miles south from Nuka Point. A rocky patch of 7 fathoms is 1.5 miles east-southeast from Nuka Rock; another patch of 7 fathoms is about 2.8 miles northeast from Nuka Rock, 1.2 miles offshore.

(1080) **Pinnacle Rock**, 3 miles northeast of Nuka Rock and 0.3 mile offshore, is 68 feet high and the most prominent landmark along this coast. Numerous small rocks and reefs, marked by kelp, are inshore from this rock.

(1081) Along the coast between Pinnacle Rock and Nuka Point, and for 0.5 mile north of Pinnacle Rock, are numerous rocks, some of which are 250 yards offshore. About 1.5 miles north of Pinnacle Rock, a small foul bight is filled with a cluster of rocks and islets.

(1082) An area with sandy bottom extends about 1 mile south of the bight and offshore from two prominent sand beaches. The bottom is smooth, with gradually increasing depths to the 10-fathom curve, nearly 0.5 mile offshore.

(1083) A prominent reef 5.2 miles northeast of Nuka Point and 3 miles south of the entrance to Nuka Passage makes a good mark. This reef is formed by two large rocks, 25 and 30 feet high, the outermost being the smaller and 400 yards off the east shore of Nuka Island. Many rocks are along the coast inshore of this reef, but deep water approaches within 200 yards on the offshore side.

(1084) The small inlet about 1 mile south from the east entrance to Nuka Passage is the only important indentation in the east shore of the island. Off the north point of the entrance is a prominent wooded islet about 70 feet high, the outer face of which is bare white granite. There are numerous high bare rocks and wooded and grassy islets on both sides of the entrance. The inlet is exposed to southeast, and the south side is foul, but small craft can approach its head as follows:

(1085) Enter in midchannel and when 200 yards past the wooded islet on the north side, anchor in 6 to 9 fathoms, sandy bottom. If going to the head of the inlet, favor the north side above this anchorage to avoid submerged rocks almost in midchannel. A large sandflat is at the head, with shoal water 125 yards offshore from it. Very small craft can anchor abreast the last point on the south shore, 200 yards from the low-water line, in 2 fathoms, sandy bottom, but there is very little swinging room. This inlet affords fair-weather anchorage only.

(1086) For 1.5 miles northwest of the inlet there are rocks as much as 250 yards offshore. The last of these is 2 feet high, 300 yards offshore, and makes a good mark for entering Nuka Passage. Deep water is fairly close outside these rocks; the 100-fathom curve is 0.4 mile offshore.

(1087) **Nuka Passage**, between Nuka Island and the mainland, is about 12 miles long from the east entrance to the south entrance.

(1088) When used with McArthur Pass, this passage affords a shorter and protected route for vessels proceeding along the coast. It is of special use to small low-powered craft. The passage is deep and is easily navigated in clear weather.

(1089) In the approach to the east entrance is a bank with a least depth of 8 fathoms 1 mile south of the point on the north side. Between this bank and the north shore of Nuka Island are depths of over 100 fathoms. A shoal, with a least depth of 4¾ fathoms, is in midpassage, 1 mile southwest of the north point of the entrance, and nearly 0.5 mile southeast of a prominent wooded islet on the north side of the pass. Between this shoal and the south shore are depths of 90 fathoms. About 1.5 miles inside the east entrance, on the north side, is a small cove open to the east; good anchorage is available for small craft in 4½ to 10 fathoms, mud bottom, and water may be obtained from the stream.

(1090) **Division Island**, a group of three wooded islands connected at low water, is in midpassage about 2.2 miles from the east entrance. The ship channel is south of the islands.

(1091) A rock awash at high water is 180 yards south of the east tip of Division Island. A rock bare at minus tides is in midchannel north of the island. A shoal with a rock awash extends south from the west extremity of the Division Island group, reaching almost halfway across the channel towards Hardover Point.

(1092) A near midchannel course, slightly favoring the south shore, is recommended in making this passage. The tidal currents have considerable strength.

(1093) From **Hardover Point**, the northwest end of Nuka Island, the pass trends south toward Gore Point. About 0.6 mile northwest of Hardover Point, on the north side of the

channel, a large sand-and-gravel flat extends northwest for about 1.5 miles to the foot of the moraine of Yalik Glacier, a prominent mark. Deepwater approaches close to this flat except at its southwest end where it is shoal for a considerable distance offshore.

(1094) **Home Cove**, 1.5 miles south from Hardover Point, is small.

(1095) **Berger Island** is a prominent wooded islet, 25 feet high, about 5 miles south from Hardover Point. The island is the outermost of a group making off from the east shore and appears from north to be in the center of the channel.

(1096) A rock 8 feet high is 250 yards northeast from the island, and a reef bare at low water extends 85 yards off this rock. A rock awash at low water and not marked by kelp is 1.2 miles 213° from Berger Island.

(1097) About 0.6 mile south of Berger Island is a grass-covered islet, 45 feet high and topped by a spruce tree that shows up well from the north or south but blends into the background when viewed from the west. The spruce tree in range with the west tangent of Berger Island to the north marks the 3½-fathom spot in the middle of the entrance to Westdahl Cove.

(1098) **Westdahl Cove** is 1 mile south of Berger Island. A rocky patch of 13 to 18 fathoms extends nearly across the bay. The anchorage is inside this rocky patch in 22 fathoms, mud bottom. A reef bare at low water and marked by thick kelp is 0.3 mile west of the south entrance point. A 3½-fathom shoal is in the middle between the entrance points.

(1099) **Yalik Glacier** formerly discharged into the west arm of Nuka Passage. There is good anchorage off the southwest end of the glacier moraine in 17 fathoms, soft bottom; however, care should be taken to avoid a 1-fathom rocky shoal about 0.4 mile south of the low waterline of the moraine and about 0.3 mile east of the west shore. An unusual rocky reef, bare at low water, extends 300 yards in a southeast direction from the extreme southwest end of the moraine.

(1100) **Petrof Point**, on the west side of the passage opposite the middle part of Nuka Island, is a prominent, low, rounding point with a wide sand beach.

(1101) **Petrof Glacier**, which shows prominently from the south, discharges into the west side of the passage around the base of a prominent ridge about 2 miles south of Petrof Point.

(1102) **Brown Mountain**, between Petrof Glacier and Tonsina Bay, is of a distinctive brown shade during the summer and has a prominent round shoulder jutting to the east.

(1103) **Tonsina Bay**, 7 miles north from Gore Point, is small and marked by a large island, known locally as **Long Island**, nearly in the center of the entrance. The entrance north of Long Island is preferred, as it is deeper and wider. Firm sandflats are at the head of the bay where vessels of any size can be beached in an emergency. On the north side of the north entrance is a bold wooded islet. About 380 yards south of this islet is a reef awash at high water. Thick kelp extends between the reef and the islet.

(1104) A rock awash at half tide is 660 yards 275° from this reef; it is 250 yards south of the north shore, and there is kelp inshore of it. Numerous rocks and islets make off to north from Long Island. The northernmost is a well-defined rocky islet sparsely covered with grass and about 25 feet high.

(1105) Entrance should be made at low water when the various rocks and reefs are visible. Anchorage can be had in 22 fathoms, mud bottom, northwest of Long Island in the basin formed by Long Island, the islets, and the mainland. Good anchorage for small craft can be had near the head of the bay in 5 to 10 fathoms, sand bottom.

(1106) **Front Point**, rising abruptly to 170 feet, is 5 miles north-northwest of Gore Point, on an island that is separated from the mainland by a narrow band of water about 25 yards wide.

(1107) A reef bare at minus tides is 0.4 mile east from the point, and there are several covered rocks and kelp patches inshore from this danger. The coast from the south entrance to Tonsina Bay to the bight north of Gore Point has numerous rocks awash at low water and kelp patches that extend about 0.3 mile offshore.

(1108) Anchorage can be had anywhere in the bight north of Gore Point by keeping clear of the kelp and avoiding the rock, which bares 3 feet at low water, 300 yards northeast of the well-defined rock point at the west end of the bight.

(1109)

Gore Point to Chugach Bay

(1110) **Gore Point** (59°11.8'N., 150°57.8'W.) is the southeast end of a prominent headland on the east side of the entrance to Port Dick. From east and west, the headland has the appearance of an island, with **Gore Peak**, near the middle and a broad, high shoulder at the ends and separated from the highland north by a narrow gap. The arch in **Arch Rock**, at the east end of Gore Point, shows over a small arc from south, and a folding in the strata in the face of the cliff shows on the south side of the headland.

(1111) Within a radius of 1.2 miles of Gore Point, the bottom is very irregular, depths of 14 fathoms being found at that distance off. A depth of 5½ fathoms was found 0.4 mile south of the point in general depths of 10 to 15 fathoms.

(1112)

Caution

(1113) Tide rips with steep, short choppy seas have been reported 3 to 5 miles south of Gore Point, especially on an ebb current with either a strong west or southeast wind.

(1114) The neck joining the headland at Gore Point to the mainland is low and wooded. On the west side of the neck is a cove affording indifferent anchorage with east winds. The south point of the cove is the west end of the headland and is a shelving ridge of bare rock. Close to this point is a rocky islet, from which rocks bare at low water and kelp extend about 200 yards northwest. A rock,

covered at high water, is about 100 yards from the cliff at the southeast end of the cove. A large kelp area extends about 200 yards northwest from the rock. The anchorage is in 18 to 25 fathoms, soft bottom, 250 to 300 yards from the beach of the low neck and about 0.3 mile from the cliff on the south side. The water deepens rapidly northwest, the swinging room is scant, and the anchorage is uneasy. It is recommended only as a temporary anchorage.

(1115) **Port Dick**, west of Gore Point, extends north for 2.5 miles to the junction of its three main arms. Abrupt shoals are within a radius of 2 miles about the point at the west side of the entrance to Port Dick. The areas near the point are foul.

(1116) **Takoma Cove** and **Sunday Harbor** are branches of the arm or bay on the east side of Port Dick, 2.5 miles above the entrance. A dangerous reef, covered 1¼ fathoms, is 0.3 to 0.5 mile west from the south side of the entrance to the arm. Takoma Cove and Sunday Harbor are the anchorages generally used in Port Dick, weather permitting. Sunday Harbor has irregular depths but is used as an anchorage by smaller vessels for the increased protection from southeast weather. The holding ground is fair in Sunday Harbor.

(1117) Anchor in the entrance to Takoma Cove with the shore to the southwest open with the point at the west side of the entrance to Port Dick; select a depth of 17 to 18 fathoms, sticky mud bottom. In the lesser depths near the head of the cove, the bottom is rocky, has poor holding quality and has many off-lying rocks. Tacoma Cove offers fair protection from east and northeast weather but poor protection for southeast through southwest weather.

(1118) **Taylor Bay**, the north arm of Port Dick, extends in a north direction for 3.5 miles and is 1.5 miles wide at the entrance. Except for rocks fringing the shores, no dangers were found in the bay. A rock, 4 feet high, is 1.5 miles north of the entrance and 130 yards off the first well-defined point on the east shore. At the beginning of the narrows are two rocks, awash at half tide and about 100 yards off the east shore.

(1119) At the upper end of the bay is a basin, with depths of 20 to 25 fathoms, surrounded by extensive mudflats.

(1120) **West Arm** extends west for a distance of 7.5 miles. There are two coves on the north side of the arm, 1.5 and 4 miles, respectively, from the entrance. The first cove has two islands in the center. Anchorage can be had east of the islands in 16 to 19 fathoms, rock and mud bottom. Smaller vessels anchor west to northwest of these islands in 17 fathoms, especially during west and east winds. Another anchorage for small vessels can be had behind a short peninsula 3 miles in on the south side of the arm. Good protection from east weather is found close to the beach. The westernmost cove is practically bare at low water. At the head of the arm on the south side are two islets, the west one marking the low-water line that extends directly across the arm at this point.

(1121) In the SW approach to Port Dick is dangerous **Gore Rock**, covered 1¼ fathoms, 7.5 miles 244° from Gore Point and approximately 3.5 miles from shore.

(1122) **Qikutulig Bay**, 5 miles west of Port Dick, has good anchorage for small craft in about 8 to 10 fathoms taking care to allow low-tide swinging room away from shoals connecting the islets. Between Port Dick and this bay the shore should not be approached closer than 2 miles because of rocks awash that extend 1.5 miles off.

(1123) **Rocky Bay**, the large bay north of East Chugach Island, is broken by numerous rocks, islets, rocks that uncover and shoal spots. The depths are irregular and of little use as guides for navigation. Small and medium-sized vessels can find sheltered anchorage in mud bottom with good ground in **Picnic Harbor**. The harbor is at the head of the bay and 220 to 300 yards wide. Use care to avoid the rocks on the northeast side of the entrance when entering the harbor. An unmaintained trail connects Picnic Harbor with Jakolof Bay, then it continues as a gravel road to Seldovia.

(1124) Two rocks that uncover 9 feet are 1.2 miles south from the large wooded island in the middle of Rocky Bay. There is also a 2½-fathom spot 1.3 miles southwest from the east entrance point of the bay. A sunken wreck is on the northeast side of the bay in about 59°14'43"N., 151°23'43"W.

(1125) **Windy Bay**, just west of Rocky Bay, extends 3.5 miles west and is 440 yards wide near its head. Though the bay has a good holding mud bottom in 4½ to 8 fathoms near the head, it is not recommended as a desirable anchorage because of heavy swell during southeast weather and a strong west breeze that draws through the bay. Boats entering this bay should favor the south side, keeping about 440 yards offshore when north of the south entrance point.

(1126) **Chugach Bay**, the large bay south of Windy Bay, has a north bight with deep water close inshore, and a west arm, 2 miles long, with good holding mud bottom. The west arm anchorage is not recommended for small boats because of its exposure to east weather and the strong west breeze that draws through the anchorage. The bottom in the south half of the entrance is broken, with a rocky spot covered 1¾ fathoms.

(1127)

Cook Inlet

(1128) **Cook Inlet**, on the west side of Kenai Peninsula, merges with Shelikof Strait through a wide unobstructed passage west of the Barren Islands. Leading from the Gulf of Alaska to Cook Inlet are Kennedy Entrance and Stevenson Entrance, north and south, respectively, of the Barren Islands, and Chugach Passage, inside the Chugach Islands. The distance is 1,254 miles from Seattle to the entrance to Cook Inlet at a point 3 miles south of East Chugach Light, via the outside route by way of Strait of Juan de Fuca. From the entrance it is 48 miles to Seldovia, 59 miles to Homer, 110 miles to Kenai and Nikiski and 175 miles to Anchorage.

(1129)

Prominent features

(1130) The shore on both sides of the inlet can be seen in clear weather. Conspicuous landmarks in the lower inlet are Augustine, Iliamna and Redoubt Volcanoes. Four lighted, parabolic antennas are prominent along the east shore from Cape Starichkof to Kenai River. The bluff between Anchor and Bluff Points is prominent and Cape Ninilchik; Chisik Island; Kalgin Island; East, West and North Forelands; numerous charted oil well platforms in the upper inlet; Point Possession; Fire Island and Point Woronzof are prominent.

(1131)

Anchorages

(1132) Port Chatham, Port Graham, Seldovia Bay, northeast of Homer Spit in Kachemak Bay, Iniskin Bay and Tuxedni Channel are the secure harbors in the inlet. Temporary anchorage can be selected in 10 fathoms or more at most places in the inlet with the aid of the chart. The great range of the tides must always be kept in mind when anchoring.

(1133)

Dangers

(1134) The shoals in Cook Inlet are generally strewn with boulders that are not marked by kelp. These boulders, on the otherwise flat bottom, are not normally found by echo sounder or lead lines unless directly over them. Most of those located by the survey were found by sighting them at low water. It was noted in places that the boulders rise as much as 30 feet above the general level of the bottom. The boulders may be moved during the ice breakup in spring and by the action of strong currents. As a measure of safety, it is considered advisable for vessels to avoid areas having depths no more than 30 feet greater than the draft. At low water, deep-draft vessels should avoid areas with charted depths of less than 10 fathoms, except for the channel approaches to the ports of Anchorage and Nikiski.

(1135) In general, the shoal banks fronting the marshy parts of the shores in the upper inlet are free from boulders but there are indications that boulders do exist in the deeper water outside these banks.

(1136) The shoal that extends 16 miles south from Kalgin Island (**South Kalgin Bar**) is marked at its south end by a lighted bell buoy. Care should be taken for the entire distance to avoid drifting into shoal waters.

(1137) With an average tidal current there are swirls throughout the inlet, but they do not necessarily indicate dangers as they show in depths of 15 fathoms if the bottom is uneven. Heavy swirls with slight overfalls should be avoided, and any disturbance that has a recognizable wake in the water should be considered as indicating a dangerous rock or shoal. A dangerous wave condition exists over the shoals in Cook Inlet when the current opposes winds over 12 knots. Significant ground swells are experienced in the Kenai River approach and at the Nikiski docks when a southwest wind accompanies a flood current. Vessels north and south bound past Turnagain Arm should be alert to the potential for heavy sets from a combination of winds and currents emanating from Turnagain Arm. (See specific area descriptions for more.)

(1138) The waters of the inlet are much discolored by glacial silt. At the end of the ebb current the discoloration may extend to Anchor Point, and at the end of a spring flood current it may be comparatively clear to East and West Forelands. Frequently with either a flood or ebb current the water above Ninilchik appears as liquid mud. The silty water is very damaging to the seals of salt water pumps and shaft bearings. Ship's evaporators should be secured and vessels avoid taking on any more ballast water than absolutely necessary.

(1139) The Cook Inlet area is affected by land uplift due to forces such as postseismic crustal rebound. As a result, the tidal datums including mean lower low water, the plane of reference used for depth soundings, have changed throughout the region. As the uplift rates can only be estimated and areas continue to rise, depths may be shoaler than charted. Mariners are urged to be prudent.

(1140)

Under Keel Clearances

(1141) Calculated under-keel clearance of 10 feet is recommended for deep draft vessels transiting Cook Inlet. It should be noted that the determination of an appropriate minimum under-keel clearance for a specific vessel transiting a specific waterway must consider many factors in addition to vessel draft and least depth, including but not limited to; environmental conditions, speed, tides and hydrography of the waterway. Masters and pilots should use prudent seamanship and should evaluate the need for additional clearance to accomodate the effects of roll, list, pitch and squat.

(1142)

Oil Production Platforms, Cook Inlet

(1143) Oil drilling and production operations continue in Cook Inlet extending as far north as Susitna Flats. The heaviest concentration of these operations is in the vicinity of Middle Ground Shoal. In general, the oil well platforms, depending on their size, depth of water in which located, proximity of vessel routes, nature and amount of vessel traffic and the effect of background lighting may be marked with a combination of flashing lights, sound signals and retro-reflective material.

(1144) Obstructions in these waters consist of marked and unmarked submerged wells, and oil production platforms, including appurtenances thereto, such as mooring piles, anchor and mooring buoys, pipes and stakes. Submerged wells may or may not be marked depending on their location and depth of water over them. All obstruction lights and sound signals used to mark the various structures are operated as privately maintained aids to navigation. (See **33 CFR, 67.01** through **67.10**, chapter 2, for regulations.)

(1145) Mariners are cautioned that uncharted submerged pipelines and cables may exist in the vicinity of these

structures or between such structures and the shore. These structures and aids are subject to heavy damage and/or destruction from ice in winter; unlocated debris and remains may exist. Mariners are advised to navigate with caution in the vicinity of these structures and in those waters where oil exploration is in progress and to use the latest and largest scale chart of the area. Mariners should avoid anchoring their vessels anywhere in the vicinity of oil well platforms or their associated structures. (For more information, see the description of Oil Production Platforms immediately following East Foreland.)

(1146) During winter months all buoys in Cook Inlet north of Anchor Point are removed from station. (See the Light List.)

(1147)

Winter Guidelines for Operating in Cook Inlet

(1148) During the coldest months, generally beginning in November and continuing until April, mariners need to remain vigilant and exercise the utmost caution when operating in Cook Inlet. The extreme frigid temperatures contribute to a number of additional hazards that mariners should identify and account for during the planning process for any voyage to be undertaken in Cook Inlet during these months.

(1149) Ice in the waterway could hamper a vessel's ability to maneuver and could cause malfunctioning of main, auxiliary and other vital systems. Vessels moored at facilities could also encounter heavy ice flows that can exert unusually high forces on mooring lines. Additionally vessel operators should ensure that the crews are equipped with the appropriate personal protective gear for extreme weather.

(1150) As a result of this period of increased hazard, the Captain of the Port (COTP), Western Alaska, in consultation with the marine community has published special winter operating guidelines for all vessels transiting Cook Inlet. The COTP announces via Navigation Advisories and Local Notice to Mariners when conditions exist that require mariners to evaluate their operations and consider the application of measures contained in these guidelines to adequately mitigate the risk of conducting vessel operations safely in Cook Inlet when ice is present.

(1151) The published guidelines fall into two categories. The first category is applicable to vessels operating in Cook Inlet when ice is present or when ice can reasonably be expected to be present prior to a vessel's departure. These guidelines address concerns for engineering systems, crew safety and vessel mooring safety during ice conditions in extreme cold temperatures. The second category applies to vessels operating in Cook Inlet when ice extends south to Nikiski and address additional guidelines for the safety of vessels mooring at the Nikiski area terminals.

(1152)

Vessel Examinations

(1153) When ice conditions exist in Cook Inlet, vessel operators or their agents are to contact COTP Western Alaska to arrange for an examination at least 24 hours in advance of arriving at the pilot station in Kachemak Bay. If the Coast Guard chooses to examine the vessel, the exam will be conducted in Kachemak Bay. The COTP Western Alaska will issue Navigation Advisories throughout the winter period advising operators of conditions and that these examinations are being conducted. The National Weather Service publishes a forecast for Cook Inlet ice conditions that can be found at: *www.weather.gov/afc/ice.*

(1154)

General Requirements

(1155) All vessel operators should ensure that main and auxiliary machinery and all vital systems, particularly cooling and fuel systems, are winterized for operation in ice-filled waters and ambient air temperatures to -40°F. Winches, ballast systems, anchoring and auxiliary equipment must be adequately prepared for operation under these conditions at all times, while moored or at anchor in Cook Inlet.

(1156) The vessel master should maintain an adequate draft to keep the sea suction and propeller well below the ice to prevent ice from sliding under the vessel. It is recommended that the most forward point of the bulbous bow be submerged. If it is necessary for a non-tank vessel to deviate from the ship's normal ballast procedures, i.e., place water ballast in a cargo hold to meet these requirements, approval from the vessel's classification society must be obtained.

(1157) Vessel crews should have adequate personal protection for cold weather during deck operations.

(1158) While transiting Cook Inlet, vessels should not force ice at any time. If, in the opinion of the vessel master and/or pilot, the vessel is forcing ice, the transit should be aborted. A good indication of forcing ice is when the vessel slows to 50% or less of the speed being made before entering the ice.

(1159)

RECOMMENDATIONS SPECIFIC TO VESSEL TYPE

(1160)

Self Propelled Cargo Vessels with Internal Combustion Engines:

(1161) Any vital systems that are cooled via a sea chest must have a means to prevent the accumulation of any ice or slush within the system. This should be achieved by delivering steam to both the primary and secondary sea chests. Only lines or hoses designed for steam service are acceptable. Steam should be continuously supplied to both sea chests from the time the vessel passes Anchor Point inbound until the time the vessel passes Anchor Point outbound.

(1162) All vessels propelled by gas turbines should ensure that the auxiliary gas turbine is ready for immediate use and engagement in the event of a main gas turbine failure.

(1163)

Tug and Barge Operating Guidelines:

(1164) When Ice conditions exist, the COTP will carefully evaluate barge movements within Cook Inlet. Voyages into Cook Inlet with tug and barges that hold a Certificate of Inspection (COI) are required to file a voyage plan with the COTP, Western Alaska, via the following email address: D17-pf-anc-sdoanc@uscg.mil. Typically, the voyage plan should include an assessment of ice conditions based on information collected from ice over-flights, review of National Weather Service reports and observations made by marine pilots and other operators. The plan should advise the COTP of intentions to contract with an additional tug to lead the tow through the ice pack if necessary.

(1165) At any time while ice is present, in addition to filing a voyage plan with the COTP, the following actions should be considered:

(1166) The assistance of at least one tug to lead the barge and attending tug through the ice pack and to provide assistance into the berth.

(1167) A minimum of one tug is recommended in addition to the attending tug to stand by the tow while at berth.

(1168) The attending tugs' main engines should remain running while the tow is moored at a facility.

(1169) Barges mooring in the Port of Anchorage are recommended to moor with their bow facing the flood tide (port side to) to stem the force of ice during the stronger flood tide.

(1170) Only tow vessels with keel-cooled engines should be employed for operations during periods when ice is present.

(1171) If ice build-up between barge and pier or under a moored barge is a possibility, the barge should be pulled away from the berth prior to max ebb tide to flush away ice that has accumulated.

(1172)

WHILE MOORED AT FACILITIES

(1173) All vessels should be moored in such a fashion that “worst case” ice conditions may be immediately mitigated, with their bow facing the flood tide to stem the force of ice during the stronger flood tide. The vessel should have additional mooring lines available. Lines of different types may be used in mooring arrangements provided that they are not used in the same service.

(1174) When ice is in the vicinity of the vessel, the following actions are recommended:

(1175) Vessels with engines and propulsion systems should be continuously manned (to include a pilot(s)) if necessary in a fashion that would allow the most expeditious means of mitigating ice conditions by relieving strain on mooring lines and/or getting the vessel underway. Steam should be continuously delivered to both the primary and secondary sea chests.

(1176)

FACILITIES

(1177) Facility operators should also follow their own ice procedures when deemed necessary.

(1178) Additional Guidelines for Operations when Ice Extends South to Nikiski

(1179)

GUIDELINES FOR SELF PROPELLED CARGO VESSELS MOORED AT KPL, AGRIUM AND CONOCO PHILLIPS DOCKS

(1180) The Southwest Alaska Pilots Association's (SWAPA) Tide & Current Handbook has been agreed upon to be used as the reference for forecasted tides and currents at the Nikiski docks.

(1181) **KPL and Agrium dock:** When the referenced flood current is greater than 4 knots alongside the KPL or Agrium dock, it is highly recommended that the following actions be taken:

(1182) Discontinue all transfer operations.

(1183) Disconnect all transfer hoses/loading arms.

(1184) A designated vessel should be positioned up current of the moored vessel as an ice scout. The ice scout should work under the direction of the moored vessel’s navigational watch.

(1185) Vessels should not remain alongside the KPL or Agrium dock when the referenced flood current is 5 knots or greater.

(1186) **Conoco Phillips dock:** When the referenced flood current is greater than 5 knots, it is highly recommended that the following actions be taken:

(1187) Discontinue all transfer operations.

(1188) Disconnect all transfer hoses/loading arms.

(1189) A designated vessel should be positioned up current of the moored vessel as an ice scout. The ice scout should work under the direction of the moored vessel’s navigational watch.

(1190) The vessel Master, Pilot or Person in Charge (PIC) should make a decision to discontinue transfer operations, disconnect hoses and get the vessel underway anytime that circumstances warrant.

(1191) The vessel Master or Pilot may also make a decision to utilize an ice scout vessel anytime that circumstances warrant.

(1192)

GUIDELINES FOR TUG AND BARGE OPERATIONS

(1193)

Nikiski Docks Barge Operating Guidelines:

(1194) In addition to filing a voyage plan with the COTP, the following actions should be taken-

(1195) A tug should assist the barge and attending tug to the facility.

(1196) When the published current is 2.0 knots or greater an assist tug should be alongside the tow in addition to the attending tug. Both the attending and assist tug main engines should remain running and ready for immediate operation.

(1197) When no ice is present at the dock, the assist tug should act as an ice scout up-current of the barge. The assist tug should reposition itself alongside the moored barge anytime ice becomes a threat.

(1198) The barge(s) should moor with their bow facing the direction of the flood tide to stem the force of ice during the stronger flood tide when the current exceeds 2 knots.

(1199) The facility Person in Charge, Towing Vessel Operator or Tankerman may determine that it is prudent to suspend transfer operations and disconnect hoses during maximum flood currents, since the ice flow is heaviest on the flood tide at the Nikiski docks.

(1200) Only tow vessels with keel-cooled engines should be employed for operations during periods when these guidelines are applicable.

(1201) These guidelines and recommendations have been developed in cooperation with the U.S. Coast Guard and Cook Inlet operators and represent a culmination of best practices based on the combined experience of maritime operators who have operated in the severe tidal and winter climate of Cook Inlet over many years. Vessel operators, masters, marine pilots and facility operators should consider these recommendations as well as any additional actions to ensure safe operations in Cook Inlet.

(1202) If extreme ice conditions preclude safe operation of vessels at the berths in Nikiski, Drift River, Port Mackenzie or the Port of Anchorage, the COTP may terminate cargo operations or close the terminal or port until conditions improve.

(1203) All vessels transiting Cook Inlet are subject to Coast Guard examination to ensure their ability to implement these guidelines. Failure to follow these guidelines may result in the issuance of a COTP Order under Title 33 USC 1221. Vessel operators or their agents should contact the COTP, Western Alaska, at their earliest opportunity to present their vessels to the Coast Guard for examination. To avoid unnecessary delays to vessel and port operations, notification and requests for examination should be at least 24 hours in advance of the vessel's arrival to the Homer Pilot Station. This examination program is in addition to any other Coast Guard inspections and/or examinations that may be applicable to a particular vessel. Any questions concerning these guidelines contact the Anchorage office at 907-428–4200 or Marine Safety Detachment Kenai at 907-235–5233.

(1204)

Routes

(1205) For vessels approaching Cook Inlet, the chart is the best guide. Descriptions for routes at the entrance follow immediately. Courses inside the inlet should be set as prudent navigation demands, with due allowance for weather conditions and set of the currents. See the section on Kachemak Bay and the Port of Anchorage, later in this chapter, for more information on Cook Inlet routes.

(1206) Kennedy Entrance and Stevenson Entrance are the main deep-draft entrances to Cook Inlet from the east. When entering Kennedy Entrance, between Perl and Amatuli Islands, caution is necessary to avoid the three off-lying dangers: the 4½-fathom rocky shoal about 16.2 miles east of East Amatuli Island Light; Cowanesque Rock, covered 2½ fathoms, 7.3 miles southeast of East Amatuli Island Light; and Dora Reef covered 1¼ fathoms, on the north side of Kennedy Entrance and 2.7 miles west-southwest of Perl Island. In addition, for more westerly-bound traffic, those in transit especially from Prince William Sound to Chugach Passage should use care to avoid Gore Rock about 8.2 miles east-northeast from the light at the south end of East Chugach Island.

(1207) Some smaller vessels approaching from the east pass north of East Chugach Island and enter the inlet via Chugach Passage, while others pass between Perl and East Chugach Islands to enter the passage. Local knowledge is desirable in using Chugach Passage. Vessels approaching from the south and passing between East Amatuli Island Light and Cowanesque Rock to the southeast should make due allowance for the set of the tidal current and, especially during periods of low visibility, keep a sharp lookout for the 2½-fathom Cowanesque Rock.

(1208) Navigation in the inlet is primarily done by use of bearings to navigation lights, radar (ranges to significant land features and parallel indexing), GPS, DGPS and fathometer. Note: Large exposed tidal flats in front of the shore will often give a strong radar return.

(1209)

"Securite" (Se-cur-it-tay) Broadcasts

(1210) It is the practice for large ships and tugs with barges to make broadcasts when abeam the following eight places in Cook Inlet: Perl Island/E Amatuli Light, Flat Island, Anchor Point, Cape Ninilchik, Cape Kasilof/S tip of Kalgin Island, East Foreland, North Foreland/Moose Point and Fire Island abeam of Point Possession. Broadcasts are also made when departing any anchorage or berth or the Pilot Station. These broadcasts include the vessel's name, speed, course, destination and general position and are made on VHF-FM channel 16 (if transmitted in 60 seconds or less). In addition, VHF-FM channel 13 is monitored to comply with Bridge-to-Bridge radio regulations and channel 10 is monitored for radio communications with tugs.

(1211)

Currents

(1212) Tidal currents in Cook Inlet are strong and must be considered at all times. Low-powered vessels should plan their trips so as to have favorable current and anchor rather than steam against the current of a large tide. A vessel with a speed of about 10 knots, picking up the flood current of a large tide a little north of Anchor Point, can carry it to Fire Island.

(1213) At the entrance to Cook Inlet the tidal currents have an estimated velocity of 2 to 3 knots and in general increase up the inlet, with very large velocities in the vicinities of Harriet Point, East and West Forelands and the entrances to Knik and Turnagain Arms, where

they are reported to be strongest. The current velocity measured by the survey ship McARTHUR was 5 knots at anchorage near East and West Forelands, Tyonek and Point MacKenzie. These anchorages were out of the full strength of the current, and it is estimated that the velocity of the current during a large tide is as much as 8 to 9 knots between East and West Forelands and probably more between Harriet Point and the south end of Kalgin Island. A 6-knot ebb current was reported east of the shoal that extends 8 miles north-northeast of Kalgin Island at a point about 5 miles northeast of Light Point. Ebb currents are reported to last 1 hour longer than predicted in this area.

(1214) In general, the direction of the current is approximately parallel to the trend of the nearest shore and/or parallel to the 10-fathom curve. Off the various bays a set may be expected, toward the bay on a flood current and away from the bay on an ebb current. It is reported that vessels may steer **10°** to **25°** offset from their desired course to account for this set. (For example see Turnagain Arm.)

(1215) Information for several places in Cook Inlet is available from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book. The available current information for Cook Inlet is derived largely from observations near the shores. In the middle of the channel it is likely that velocities are larger and times of current somewhat later than near the shore.

(1216) This chapter also provides tidal current descriptions for some localities in the Cook Inlet not in the Tidal Current Tables. This information is reported and anecdotal. Reports indicate that slack waters do not occur at the times of local high and low tides, and the navigator is cautioned against assuming such a relation to exist. It is also reported that the difference in the Inlet between predicted and actual times of slack water (minimum before a maximum) can differ by as much as 1 hour, especially with small tides, and actual tidal heights can differ from predicted by 1 foot, especially with strong winds.

(1217)

Ice

(1218) The upper part to Cook Inlet is generally obstructed during the winter by ice that normally forms on the flats and in the shallower waters. Tidal currents then move in and break them up into ice pans that are then pushed out into the Inlet. The Winter Operating Guidelines should be followed when operating in the winter in the Inlet. (Contact COTP W Alaska, in Anchorage, for further information.)

(1219) During a mild winter or after a period of several days of mild weather, even low-powered vessels will probably have no difficulty in reaching the head of the inlet and lying at the docks long enough to discharge their cargoes.

(1220) During a severe winter or after a considerable period of severe cold, full-powered vessels can reach the head of the inlet but because of the heavy masses of ice floating in the strong currents, use the assistance of a tug and/or their anchors to dock.

(1221) During severe winters, ice pans in the Inlet can attain a diameter of 200 to 500 yards, ice packs can be continuous in the whole upper inlet, and ice formation will take place out in the inlet on small tides. Another phenomenon of severe cold periods is the grafting and stacking that occurs in two ways. Ice on the flats freezes to the surface, and when another high water comes in, ice will form on top of the earlier layer, eventually being broken free by tidal action and then called stamukhi. Secondly, out in the Inlet on a strong current, one ice pan will ride up onto another. These stacks have been reported to attain heights of 20 to 30 feet, especially at Middle Ground Shoal, and often contain gravel and boulders. The edges of ice pans normally appear on radar, but their extent can be misconstrued because the interior of a large, unbroken, flat pan often appears as open water.

(1222) Ice does not generally interfere with navigation south of Ninilchik except on the west side of the Inlet, where large fields of ice are sometimes carried by wind and tides just past Cape Douglas, closing Iliamna Bay for brief periods. (See the descriptions for the various ports in the inlet for more details about ice in that particular area.)

(1223)

Pilotage, Cook Inlet

(1224) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska.

(1225) Pilots for the Cook Inlet are available from the Southwest Alaska Pilots Association (swpilots.com) office at Homer; telephone 907-235-8783, cell 907-299-7513 (24 hrs/day), email: Dispatch@swpilots.net, FAX 907-235-6119. A 36-hour notice is required.

(1226) Vessels en route to Cook Inlet ports and facilities begin their transit by contacting the Southwest Alaska Pilots dispatch at 907-299-7513, one and a half (1.5) hours before arriving at the pilot station, 1 NM south of the Homer spit. The vessel will then contact the pilot boat "Katmai" or "Mary Dele" by VHF-FM Channel 10 or 16, when one half (0.5) hour out. It is a common practice for vessels to shape a course (weather permitting) ¾ mile south of Homer Spit Light 3 with a starboard pilot ladder 1 meter from the water and a speed of 8 to10 knots. This proximity to the Homer Spit will allow for a starboard turn for vessels bound for central or northern Cook Inlet ports. (See **Pilotage, General** (indexed), chapter 3, for the pilot pickup station and other details.)

(1227) **Note:** With prior arrangements, any mooring lines needed can be delivered when embarking a pilot, (especially for the Winter Operating Guidelines or moorage requirements at Nikiski).

(1228)

Towage

(1229) Tugs for docking assistance are available 24 hours a day in Homer and Anchorage. Prior arrangements for

their use should be made. See the descriptions (indexed as such) for Homer and Anchorage.

(1230)

Supplies

(1231) The principal communities along Cook Inlet are Seldovia, Homer, Kenai, Nikiski and Anchorage; supplies, water and some repairs are available.

(1232)

Oil Spill Response Resources

(1233) Tank vessels carrying oil in bulk are required to have an approved vessel response plan and spill response resources (owned or contracted) to enter U.S. Ports. (See Oil Pollution, indexed as such, chapter 1.) In addition, all vessel spills are the responsibility of the spiller to remove. Spill response resources are available in Nikiski, Seldovia, Homer and Anchorage. (Contact U.S. Coast Guard Captain of the Port, Western Alaska, in Anchorage, for further information.)

(1234) **Cook Inlet**, north of a line from Cape Douglas to Point Adam, is a Marine Protected Area.

(1235)

Barren Islands to Ushagat Island

(1236) **Barren Islands**, a group of mountainous islands in the middle of the entrance to Cook Inlet between Chugach Islands and Shuyak Island, occupy an area about 13 miles long and 5 miles wide. East and West Amatuli Islands are bold and precipitous and mostly devoid of trees. They are thickly covered with grass in the depressions and on the less precipitous slopes. In general, the anchorages around Ushagat Island are preferable to the others in the group; however, all are insecure, because they are subject to sudden changes in wind speeds and directions.

(1237)

Dangers

(1238) In the approach to Cook Inlet, there is an unmarked pinnacle rock covered 4½ fathoms at 58°55'48"N., 151°25'52"W. The top of the rock has a very small area and apparently is the high point of a larger shoal. It may or may not be marked by a current slick. Cowanesque Rock (58°50'54"N., 151°45'13"W.), with associated shoal area, is unmarked and has a least depth of 2½ fathoms. Mariners are cautioned to give both of these shoals a wide berth.

(1239) Closer to the Barren Islands, a rock awash at half-tide is at 58°58'14"N., 152°02'43"W. An 8-foot high rock is off the west side of Ushagat Island at 58°57'29"N., 152°20'44"W. Two rocks awash at half-tide are just northwest and 0.5 mile east-southeast of the bare rock.

(1240) Operators of small boats should take particular care to avoid being caught in the tide rips off the Barren Islands. With a moderate west sea, wind force 4 to 5, coaming seas in series of three to four high waves have been seen north of Nord Island with sufficient height and force to seriously endanger, if not swamp, the ordinary fishing launch. In moderate weather small boats should not leave these islands until the current sets with the sea.

(1241)

Currents

(1242) **Tidal currents** of considerable velocity are found in Kennedy Entrance and Stevenson Entrance, the flood current setting approximately northwest and the ebb southeast Heavy tide rips occur with strong winds in the vicinity of the islands and are frequently dangerous for small vessels. On spring tides an especially dangerous, steep tide rip occurs southwest off Ushagat Island that can constitute a hazard to small craft. The wind among the Barren Islands is often twice as strong as it is a few miles away and the seas are often three times higher, attaining speeds of 100 knots and heights of 30 feet, respectively. Because of these conditions and the greatly increased chance of winter icing, vessels often use the lee of Chugach Passage. Those vessels transiting amongst the islands will often be subject to confused seas in this confluence of waves generated from the Gulf of Alaska, Cook Inlet/Kamishak Bay and Shelikof Strait.

(1243) In the deep waters of Kennedy and Stevenson Entrances and their approaches, the current usually is regular and appears to have less force than along the sides of the passages. At the edges of the banks bordering the islands and on the detached 20- and 30-fathom banks, in fact wherever there is much change in depth, the current increases greatly in force. Such currents are usually, but not always, marked by ripples, eddies or boils.

(1244) Ebb currents set strongly to the east along the edge of the bank bordering the north side of the Barren Islands, to the south between Ushagat and Amatuli Islands and to the east, north of Sugarloaf Island. The ebb currents are variable for a few miles south from the Barren Islands. Farther south, they set steadily southeast.

(1245) On the flood a narrow band of strong current will be felt a few miles north of the Barren Islands. Some lee from the flood current is afforded closer inshore, but even there a steady set to the west will generally be found.

(1246) The current in general probably does not exceed 4 knots. Reports indicate that slack waters do not occur at the times of local high and low tides, and the navigator is cautioned against assuming such a relation to exist.

(1247) **Kennedy Entrance**, one of the two main deep-draft entrances to Cook Inlet from the E, is between East Amatuli and Perl Islands. It has a clear width of about 7 miles, with general depths of 30 to 110 fathoms, though detached rocks and reefs extend 3 miles off Perl Island and 1.5 miles off East Amatuli Island. This location is the first of the "Securite" Broadcast reporting points used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter for more.)

(1248) **Stevenson Entrance**, south of the Barren Islands, is the second main entrance to Cook Inlet from the east. It has a clear width of about 8 miles between the dangers that extend off the Barren Islands on the north and off Shuyak Island on the south, with general depths of 26

to 100 fathoms. The S shore of Stevenson Entrance is described in chapter 5.

(1249) **East Amatuli Island**, at the east end of the group, has high peaks along its length, except 0.8 mile from the southwest end where it drops to a valley having a level of less than 200 feet. A rocky islet, 118 feet high and 200 yards off the east end of the island, is marked by **East Amatuli Island Light** (58°54'57"N., 151°57'08"W.), 120 feet (36.6 m) above the water and shown from a skeleton tower with a diamond-shaped red and white daymark. A rock awash is 250 yards east of the light.

(1250) **Puffin Peak**, with a conical top on East Amatuli Island, is the highest peak in the E group of the Barren Islands.

(1251) **Amatuli Cove**, on the north side of East Amatuli Island and close to the west end, affords insecure anchorage near its head for small craft, in 6 to 8 fathoms, sand and gravel bottom. With a heavy northeast wind, considerable sea makes into the cove and the williwaws are heavy. Winds draw through the cove with great force, especially from the southeast and south. The holding ground is not good. (See the earlier introduction description for Barren Islands anchorages.) Kelp grows along the shores, and there is a small stream at the head of the cove.

(1252) **West Amatuli Island** is mountainous. A cluster of rocks about 30 feet high is 0.5 mile east from the northeast end of the island, with a reef between. A rock, 6 feet high, is 370 yards off the north point of the island. A rock awash at half tide, which does not always break, is 1 mile north of the 6-foot rock.

(1253) **Sugarloaf Island** is 1.1 miles south from East Amatuli Island; deep water is between it and the other Barren Islands. A large grass-covered rock, 75 feet high, is 0.4 mile south of Sugarloaf Island, with foul ground between. A rock awash is 200 yards from the southwest corner of the island and a 10-fathom bank, on which tide rips are common, is about 0.4 mile west.

(1254) Sugarloaf Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 224.103**, chapter 2, for limits and regulations.)

(1255) **Nord Island** is 1.3 miles north from the east end of Ushagat Island with deep water between. Its south half is a dome 690 feet high, while its north half is lower and irregular. Strong currents with tide rips are reported just north of Nord Island.

(1256) **Sud Island**, 1.1 miles off the southeast side of Ushagat, is high near its southwest end. Near its northeast end is a knob 203 feet high. Islets, covered rocks and rocks awash at low water extend out 400 yards in many places around the island.

(1257) A small rocky grass-topped island, 380 feet high, is 1.5 miles south-southeast from the southwest point of Ushagat Island. Foul ground surrounds the island and extends almost to a bare rock 48 feet high, about 1 mile to the south. A low rock is between the island and the bare rock. Strong tide rips in this vicinity extend to the south of Ushagat Island. A barrier against the ebb current is formed by the island, rocks and shoal area, which reduces the strength of the current along the southeast shore of Ushagat Island.

(1258) **Ushagat Island**, the westernmost and largest of the Barren Islands, is wide near its west end. Ushagat Island is grass covered except on the tops of peaks and where the cliffs are steep. The trees are spruce, ranging from about 50 feet high near the lake to 3 feet high near the west end. The island is practically inaccessible except at the low neck near the northeast end and at the beaches fronting the valley in the northwest part. The summit of the island is the highest in the Barren Islands. **Table Mountain**, at the northeast end, is separated from the other high land of the island by a low narrow neck.

(1259) Outlying rocks are to the north and west of the northwest point of Ushagat Island. Outlying rocks and islets are to the south and west of the southwest point of the island. The west side of the island is indented about 1 mile by a wide open bay with two bights. Poor anchorage with a rocky bottom for all east winds can be had in the bight at the north end of the bay. (See the earlier introduction description for Barren Islands anchorages.)

(1260)

Anchorages

(1261) Anchorage with shelter from south weather, and some protection from west weather, can be had off the north side of Ushagat Island near the head of the deep bight 2.5 miles from the northwest promontory. Anchor in 12 to 15 fathoms with fair holding on rock bottom about 0.5 mile off the two small sand beaches. A small boat can get more shelter by anchoring close in.

(1262) Fair protection in north or west weather can be had in the bight on the south side of Ushagat Island, north of Sud Island. Williwaws are strong, but a small boat can avoid the worst of them by anchoring under the cliffs to the west of the head of the bight. In suitable weather, medium-sized vessels can anchor in 12 to 18 fathoms, rock bottom. (See the earlier introduction description for Barren Islands anchorages.)

(1263)

Chugach Islands to Flat Island

(1264) **Chugach Islands** consist of mountainous East Chugach, Perl and Elizabeth Islands near the coast of Kenai Peninsula at the entrance to Cook Inlet.

(1265) **East Chugach Island** has a low valley through the middle in a northeast and southwest direction. The south peak is 1,400 feet high, and the peak near the west end is higher. The southeast point of the island is a cliff with a 710-foot peak at its crest and slightly lower land between it and the mountains. The point is marked by **East Chugach Light** (59°06'23"N., 151°26'37"W.), 325 feet above the water, and shown from a skeleton tower with a diamond-shaped red and white daymark on the southeast end of the island.

(1266) Considerable foul ground extends from the island into the passage to the north. A rock awash at low water

is 0.5 mile off the northeast point. A 4¼-fathom, kelp-marked shoal is 1.4 miles northeast of the low-wooded spit at the northwest end of the island. The passage is apparently clear between the 4¼-fathom shoal and the shoal area making off the points at the entrance to Chugach Bay.

(1267) The passage between East Chugach and Perl Island is clear and is preferred by vessels passing inside of Perl and Elizabeth Islands because it is considered safe and easy to navigate.

(1268) If the passage from Gore Point north of East Chugach Island is used, care should be taken to make proper allowance for the currents that set in and out of Port Dick and diagonally across the approach to East Chugach Island, as well as the proximity of Gore Rock in the approach from and to the east-northeast (see earlier indexed description). This passage should not be attempted unless the weather is clear enough to use leading marks.

(1269) **Perl Island** is in the middle of the Chugach group. Its northwest point is sandy on the west side and has a high cliff on the north side. Several cabins and a gravel airstrip are on the point. **Perl Island Light 1** (59°07'04"N., 151°38'24"W.), 80 feet above the water, is shown from a skeleton tower with a square green daymark on the extreme northeast point of the island.

(1270) A pinnacle rock, covered 5½ fathoms, is about 0.6 mile off the southeast side of the island.

(1271) **Perl Rock**, 87 feet high and marked by a light, is a large prominent detached rock about 0.5 mile south of Perl Island. A rock that uncovers is 185 yards west from Perl Rock.

(1272) **Nagahut Rocks**, about 50 feet high, are large prominent bare rocks, close together and a good radar target, about 1.5 miles west of the southwest end of Perl Island. Rocks and foul ground are between them and the island. Safe passage between Nagahut Rocks and Perl Island is possible in depths greater than 20 fathoms, but extreme caution is advised.

(1273) **Dora Reef** is a small patch of rocks covered 1¼ fathoms about 1 mile southwest of Nagahut Rocks. The reef is steep-to and breaks at low water with moderate seas. This reef is a potential danger for Kennedy Entrance and Chugach Passage.

(1274) There is deep water in the passage between Elizabeth Island and Nagahut Rocks; however, a shoal of 6 to 9 fathoms is 0.4 to 1 mile east from the southeast end of Elizabeth Island, and a shoal covered 4¼ fathoms is 1 mile west from the west end of Perl Island.

(1275) **Chugach Passage** is between Perl and Elizabeth Islands and the rounded end of the mainland. A lighted buoy marks the northeast side of the south turn and southwest side of the north turn in the passage channel, respectively.

(1276) The end of the mainland is fringed with reefs, isolated rocks, and extensive kelp beds. In rounding it from the east, the outermost danger is a rock, bare at half tide, 0.4 mile off the south side of the rounding mainland shore.

(1277) Chugach Passage is commonly used by vessels entering Cook Inlet from east. Depths of 5½ to 10 fathoms were found in the shallowest part of the channel between the southeast end of Elizabeth Island and the dangerous reefs that extend from the mainland. An abrupt rocky spot, covered 7 fathoms, is about 0.5 mile northwest of the north end of Perl Island.

(1278) **Elizabeth Island** has two mountain masses, separated by a low valley that extends in a northwest direction. The northeast point is a sandspit marked at its outer extremity by a buoy. A depth of 1½ fathoms is 0.3 mile southeast and a prominent large bare rock is 0.3 mile west-southwest from the buoy. Cape Elizabeth is the west end of the island. **Cape Elizabeth Light** (59°08'47"N., 151°52'36"W.), 48 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark near the south end of the cape. A submerged rock, dangerous to navigation, is 0.4 mile west of the cape.

(1279)

Routes, Chugach Passage

(1280) Midchannel courses are clear in the approach to the passage north of East Chugach Island and between that island and Perl Island. When transiting the west end of the Passage, the charted waterfall scar on the mainland can be used as a range, keeping 0.6 mile south of Claim Point, 0.6 mile north of Elizabeth Island, and having due regard for existing conditions of weather and set of current. Local knowledge is desirable.

(1281)

Currents, Chugach Passage

(1282) East of Elizabeth Island the flood sets north and the ebb south with velocities of 3.1 knots and 1.8 knots, respectively. Currents of about twice these velocities have been reported during heavy weather. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1283) It is reported that the turn of the current in the main passage south of Elizabeth Island occurs earlier, possibly as much as 1 hour, than in Chugach Passage. In the area south of the Chugach Islands, tidal currents are much stronger near the islands than the deep water farther south.

(1284) Heavy tide rips occur from the northwest end of Perl Island to the west end of the passage. The heaviest rips are in the vicinity of Perl Island with an ebb current and east wind or with a flood current and a west wind. Heavy rips also occur off the southeast point of East Chugach Island. Another significant tide rip occurs 0.8 to 1.5 miles north through northwest from the northwest point of east Chugach Island, especially with ebb currents and north winds.

(1285) **Port Chatham**, indenting the end of Kenai Peninsula north of Elizabeth Island, is a secure harbor for small and medium-sized vessels and easily entered in the daytime with clear weather.

(1286) Below Chatham Island the shores on both sides of the entrance are foul, but above the island the main part of the harbor is clear. The dangers are marked by kelp with the water below half tide. The mountains on either side of the harbor rise abruptly from the water and are wooded about half way to the summits.

(1287) **Claim Point**, on the west side of the entrance, is a wooded hill with a low wooded neck in back of it. Bare rocks and kelp extend about 250 yards off the southeast side of the point.

(1288) **Chrome Bay** is on the north side of the entrance to Port Chatham, just northeast of Claim Point.

(1289) **Kelp Point** is 0.5 mile northeast from Claim Point. A bare rock is 250 yards south of Kelp Point, and a dangerous detached reef with rocks bare at low water is about 300 yards east of the bare rock. This reef is covered by kelp, but usually the kelp does not show at high water.

(1290) **Chatham Island**, small, low, rocky and partly wooded, is in the middle of Port Chatham, about 1.2 miles inside the entrance. **Port Chatham Entrance Light** (59°12'33"N., 151°46'34"W.), 40 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the west point of the island.

(1291)

Routes

(1292) When entering Port Chatham from Cook Inlet it is well to keep 0.5 mile south of Claim Point and Kelp Point. When approaching from Chugach Passage, the white scar on the cliffs east of Kelp Point is a good mark. Keep midchannel between Chatham Island and the north shore, passing about 100 yards south of the daybeacon marking the 1¼-fathom rock north of the light. From there to the anchorage keep in midchannel.

(1293) The only known danger in the channel west and north of Chatham Island is a rock covered 1¼ fathoms, 500 yards north of the light. The rock is marked on its west side by a buoy. There is deep water on either side of the rock. A depth of 4½ fathoms was found 250 yards southwest of the light.

(1294) The passage east of Chatham Island is foul and should not be attempted by strangers. Two rocks, one covered 2 fathoms, is 0.4 mile from the east shore and 0.7 mile 165° from Chatham Entrance Light; and the other, covered 2 fathoms 1 foot, is 0.2 mile from the east shore and 0.3 mile 115° from Port Chatham Entrance Light.

(1295) On the east side, 0.6 mile northeast from Chatham Island, is a projecting rocky, wooded point, where the port changes direction. The opposite side, northeast from this point, is a low grassy spit. A submerged obstruction in 59°12'59.2"N., 151°44'17.5"W., is about 300 yards south of the spit. The ruins of a lumber camp are on the spit. At the east end of the harbor are rocks showing but little above high water.

(1296)

Anchorages

(1297) The best anchorage is in the broad part of the harbor 0.3 mile southeast of the spit, in 10 to 13 fathoms, soft bottom. During heavy east to southeast gales, some williwaws are felt at the anchorage, but they are not dangerous. This anchorage often has numerous fishing vessels in the summer.

(1298)

Currents

(1299) The tidal currents have little velocity in the entrance and harbor, but in the approach on either side of Elizabeth Island there are strong tidal currents and at times tide rips. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1300) The coastline between Port Chatham and Koyuktolik Bay is foul, and thick kelp extends as much as 0.5 mile offshore.

(1301) **Koyuktolik Bay** is about 5 miles west-northwest of Port Chatham. Its north shore consists of bare rocky cliffs, while the south shores are lower. The south entrance point is a low yellow bluff. Rocks and reefs extend 0.2 mile from the south entrance point. Poor temporary anchorage for smaller vessels, in 8 to 10 fathoms, hard bottom, can be found 0.5 mile from the head of the bay. In heavy southwest through northwest weather a considerable swell will reach this anchorage. About 0.7 mile from the head of the bay is a private mooring buoy. The bay is constricted by a sand and gravel shoal that extends from the south shore near the entrance to a lagoon and by rocks that uncover off the north shore. The lagoon is navigable with local knowledge by skiff at high water.

(1302) **Point Adam**, just west of Koyuktolik Bay, is low at the end and rises in a steep grassy slope to mountains. A significant, steep choppy sea has been reported just off Point Adam with a flood current and west through northwest winds. **Magnet Rock** is about 3.3 miles north-northwest from Point Adams and about 0.5 mile off **Point Bede**. The rock is 25 feet high, black, prominent, and a good radar target.

(1303) **Flat Island**, 1.4 miles north from Magnet Rock, is small, flat and grass covered; it is composed of two closely connected islands joined by bare reefs. **Flat Island Light** (59°19'51"N., 151°59'42"W.), 70 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the northwest point of the northernmost island. This island forms a good radar target, is an important transit turn point and is a "Securite" Broadcast reporting point used by large vessels. See "Securite" Broadcasts, indexed as such, earlier this chapter, for more. The island is surrounded

by kelp. A group of rocks that uncover and are marked by kelp are 0.2 mile off the west side of Flat Island. Heavy tide rips occur in the area between Point Bede, Magnet Rock and Flat Island. The area has many fishing vessels in the summer.

(1304)

Port Graham

(1305) **Port Graham**, on the east side of Cook Inlet, 4 miles northeast of Flat Island, is a secure harbor inside Passage Island and with care is easily entered in the daytime. Its entrance between Russian Point on the south and Dangerous Cape on the north has extensive outlying reefs, covered at various stages of the tide. The dangers are generally steep-to and marked by kelp.

(1306) **English Bay** is an open bight on the west side of **Russian Point** (59°21.6'N., 151°55.3'W.). **English Bay Reef**, bare at low water, is about 1 mile west of Russian Point. There is broken bottom and thick kelp between the reef and the foul ground that extends from Russian Point; strangers should not cross this area. Depths of 3¼ and 5 fathoms are about 0.5 mile south-southwest of English Bay Reef. **Nanwalek**, a small native settlement, is on the northeast side of English Bay. A gravel airstrip is near the village.

(1307) **Dangerous Cape** (59°24.0'N., 151°54.3'W.) is on the north side of the entrance to Port Graham. A current of nearly 3 knots sets at times across the broken ground around the cape, causing heavy rips and overfalls. **Dangerous Cape Reef** extends 0.5 mile west from the west side of the cape. **Bird Reef**, 250 yards long, is 0.6 mile south-southwest from Dangerous Cape. The highest rock at the north end of the reef is covered at extreme high tide. The shore reef inside of Bird Reef is composed of rocks that uncover and some bare rocks. A detached rock, covered 1¼ fathoms, is in the channel between Bird Reef and the shore reef. Midway between Bird Reef and Passage Island and 0.5 mile from the north shore is a small shoal with 2½ fathoms, marked by a buoy. Vessels should pass south of it, as another shoal makes out 650 yards from the shore.

(1308) **Passage Island**, 1 mile inside the entrance, is high and wooded. It is generally fringed with reefs to a distance of 150 yards, and a shelving spit, covered at high water, extends 350 yards east from its east end. The end of the spit is marked by a daybeacon. A reef, with numerous rocks bare and covered at various stages of the tide, extends 0.9 mile west-southwest from the west end of the island. **Port Graham Entrance Light** (59°22'21"N., 151°53'07"W.), 50 feet (15.2 m) above the water, is shown from a small house with a red and white diamond-shaped daymark on the north end of the island.

(1309)

Routes

(1310) The safest time to enter Port Graham is at low water, and the preferred entrance is north of Passage Island. The chart is the guide. The route south of Passage Island should not be used by strangers. This entrance south of Passage Island is approached through a narrow unmarked channel over a rocky bar that bares in places and extends from north of Russian Point to Passage Island.

(1311)

Dangers

(1312) Rocks, bare at low water and marked by a daybeacon, are 250 yards west of the point on the north shore east of Passage Island. This is the worst danger in the entrance. The channel has a width of 250 yards between the rocks and the reef fringing Passage Island. On the outside, the shore of **Coal Cove** is fringed with kelp to a distance of 350 yards and should be approached with caution.

(1313) The only serious danger east of Passage Island is a narrow, submerged reef with kelp that extends halfway across Port Graham from the north shore 0.6 mile southeast of Passage Island and is marked at the south end by a buoy. Also, about 900 yards northwest of a cannery wharf is a shoal that extends about 300 yards offshore and is marked at its outer end by a daybeacon; the cove southeast of the wharf is shoal.

(1314)

Anchorages

(1315) Temporary anchorage for a small vessel can be selected in the bight on the north shore, north of Passage Island, in 7 to 10 fathoms. This anchorage is exposed to a heavy swell in south or west weather. When inside Passage Island, better anchorage in 10 to 17 fathoms can be had in any part of Port Graham except the cable area about 0.9 mile east-southeast of the cannery wharf. One of the best is north or northeast of the wharf, in 10 to 13 fathoms, sticky bottom. Although the port experiences occasional williwaws in southeast weather, they are not dangerous.

(1316)

Currents

(1317) Strong tidal currents, both ebb and flood, set across the mouth of the harbor, but there is little current at or inside of Passage Island. With opposing wind and current, heavy tide rips occur off and well north and south of the entrance to Port Graham. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1318)

Weather, Port Graham

(1319) As in Kachemak Bay, southwest winds predominate in the late spring to early fall, when northeast winds become most frequent. Winds are strongest in the late summer and early fall. Fog is common in both summer and winter. Summer fog hangs over the water for days, while winter fogs are associated mainly with precipitation. The yearly average temperature is 35°F (1.7°C) but can be as high as 80° (26.7°C) in the summer and well below 0°F (-17.8°C) in winter. Storms are infrequent during

the summer months and are much more common during the winter. Williwaws are occasionally experienced with strong southeast winds.

(1320)

Ice

(1321) Ice is not a major problem throughout most of Port Graham but will form in areas of little water movement or where a skim of freshwater rides over the saline water near the easternmost part of the bay.

(1322) **Port Graham** has a cannery and pier on the south side, 1.9 miles beyond Passage Island. The pier has a 100-foot face with 15 feet reported alongside; deck height 35 feet; one 1.5-ton fixed crane and water in summer. There is a barge dock about 0.3 mile northwest of the cannery pier. This second dock, used for log transfer, has a 150-foot face; 10 feet alongside; deck height, 30 feet. Port Graham Corporation owns both facilities and operates the cannery pier.

(1323) **Point Pogibshi** is a prominent flat-topped grassy point about 50 feet high, with rocky sides, on the east side of Cook Inlet 1.5 miles north of Dangerous Cape. At this point the coast changes direction northeast for about 5 miles to Seldovia Bay. **Point Pogibshi Light** (59°25'28"N., 151°53'13"W.), 94 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the south side near the end of the point.

(1324) Kelp extends 0.5 mile off the bight 2.7 miles northeast of Point Pogibshi.

(1325) **Seldovia Bay**, 7 miles northeast of Port Graham, is a secure harbor in any weather. There are several shoals covered less than 3 fathoms in the entrance, and the inner part of the bay is very shoal.

(1326) **Point Naskowhak** (59°27.2'N., 151°44.5'W.), on the west side of the entrance to Seldovia Bay, is the north of two small high rocky wooded knobs that stand on a low grassy spit surrounding a lagoon. A reef with rocks awash extends about 0.1 mile north from the point, and kelp-marked broken ground extends almost 0.5 mile northeast. Kelp-marked shoals with a least depth of 2 fathoms extend 700 yards east-northeast from the point.

(1327) **Gray Cliff**, the east entrance point of Seldovia Bay, is a bare rock cliff 60 to 70 feet high and a good radar target for entering the bay. **Seldovia Bay Entrance Light** (59°27'08"N., 151°43'16"W.), 64 feet above the water, is shown from a small house with a red and white diamond-shaped daymark at the south end of the cliff.

(1328) **Seldovia Point**, 1 mile north of Gray Cliff, is a 200-foot-high cliff, wooded on top. A shoal with a least depth of 2 fathoms is about 0.4 mile north of the point. Kelp extends 0.6 mile from shore in the bight northeast of the point.

(1329) **Red Bluff**, 0.2 mile south of Gray Cliff, is high and reddish in color. Foul ground extends from the cliff to about 0.2 mile west and 0.1 mile southwest. A rock that uncovers 4 feet is about 300 yards west of the cliff and is marked by a lighted buoy. This rock is steep-to on its west side and the principal danger in the bay.

(1330) **Watch Point**, 0.6 mile south of Gray Cliff, is a small 30-foot-high grassy head with a few trees and a short low grassy neck behind it. A high pointed rock is near the east shore 300 yards north of the point.

(1331) **Seldovia Bay Light 3** (59°26'33"N., 151°43'17"W.), 45 feet above the water, is shown from a small house with a square green daymark off the end of Watch Point. Kelp-marked rocks with a least depth of ¾ fathom are between the light and the Seldovia waterfront to the south.

(1332) **Seldovia**, on the east side of Seldovia Bay just south of Watch Point, is a tourist and fishing town. It has several stores, lodging, a clinic and churches. A police chief is in the town.

(1333)

Channel

(1334) The channel to Seldovia on the northeast side of the bay is 100 yards wide. Numerous shoals and rocks extend from either side of Seldovia Bay near the channel. Those obstructions are marked by kelp at slack water in summer and fall, but the kelp tows under during the strength of the tidal currents.

(1335)

Anchorages

(1336) The best anchorage is in the middle of Seldovia Bay, 0.8 mile south of Seldovia Bay Light 3, in 9 to 10 fathoms, sticky bottom. It is well sheltered except from strong south winds.

(1337)

Currents

(1338) The tidal currents at Seldovia have an estimated velocity of 2 to 3 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1339)

Wharves

(1340) **The City Pier** (59°26'27"N., 151°43'15"W.) has a 370-foot berthing space with 20 feet alongside and a 15-foot deck height. Two 2-ton electric-hydraulic derricks and pipelines extend from the wharf to tank storage for 7,650 barrels. The pier is used for receipt of petroleum products, ferry landing, fueling vessels and occasional receipt and shipment of conventional general cargo. The pier is owned by the State of Alaska and is operated by the State of Alaska and Seldovia Fuel & Lube, Inc. A 40-foot fueling float for vessels under 70 feet is alongside the south face with 23 feet reported alongside. The back side of the face has 160 feet of berthing space and 20 feet reported alongside.

(1341) **Seldovia Small-Boat Harbor** (59°26'12"N., 151°42'52"W.) is protected by breakwaters; the north breakwater is marked by a light. A federal project provides for a dredged entrance channel leading northeast

to a basin inside the breakwaters. he area southeast of the federal project is maintained by local interests. The harbor provides moorage for about 150 vessels with some transient space available. The harbormaster's office, at the north end of the small-boat harbor parking lot, monitors VHF-FM channel 16 and can be contacted by calling 907–234–7886 for berth assignments. Supplies and repairs are limited but water, electricity, a launching ramp and lift for vessels to 48 feet are available. Two timber tidal grids are in the basin on either side of the approach. The basin is owned by the state and operated by the city.

(1342)

Oil Spill Response Resources

(1343) Limited **Oil Spill Response Resources** are available in Seldovia. However, additional resources are available in Homer, Nikiski and Anchorage. For further information, contact the Coast Guard COTP, west Alaska, in Anchorage.

(1344)

Communications

(1345) The Alaska Marine Highway System has scheduled ferry service for passengers and vehicles from Seldovia to Homer, Kodiak and Seward and down the Alaska Peninsula. This ferry runs once to twice a week for 10 months of the year. Small commercial passenger ferries make daily runs in the summer to Homer. A commercial air taxi makes runs to Homer and Port Graham, weather permitting. A maintained gravel road leads to Jakolof Bay. Landline telephone, radiotelephone and cellular telephone communications are maintained.

(1346) **Seldovia Slough**, just south of the small-boat harbor, leads east and north to **Seldovia Lagoon**. It is dry at low water and only navigated by skiffs.

(1347) The remainder of the cove is nearly dry at extreme low water. A grassy head with a few trees forms the southwest side of the cove that is joined to the main shore by a low narrow neck.

(1348)

Kachemak Bay to Peterson Bay

(1349) **Kachemak Bay** is a large bay on the east side of Cook Inlet. The entrance is between Seldovia Point (59°28.3'N., 151°42.0'W.) on the south and Anchor Point (59°46.8'N., 151°52.0'W.) on the north. It affords excellent anchorage for vessels of all classes and sizes. Kachemak Bay is frequented by large vessels picking up or disembarking pilots; numerous commercial, charter and recreational fishing vessels; tour boats; tugs with barges; an Alaska State Ferry and occasional cruise ships. The large vessel and tug and barge traffic continues year around and occasionally anchor northeast of Homer Spit. The fishing vessel and tour boat traffic is mostly a summer activity.

(1350) **Kachemak Bay Research Reserve** includes waters of Kachemak Bay east of a line connecting Anchor Point in the north with Point Pogibshi in the south. Kachemak Bay Research Reserve is a Marine Protected Area.

(1351)

Route

(1352) From the entrance to Cook Inlet about 4.5 miles south of East Chugack Island Light, set courses to pass about 6 miles south of the west end of Cape Elizabeth, on Elizabeth Island, thence about 2 to 5 miles west of Point Adam and Flat Island, thence about 1.5 to 3 miles off Point Pogibshi, and (weather permitting) shape a course to about 0.5 mile south of Homer Spit Light 3 to pick up a pilot or 1 mile south to proceed to the berths or anchorage at Homer.

(1353)

Caution

(1354) Vessels transiting to and from Homer to the north are advised to stay 3 miles offshore from Bluff Point and 5 miles offshore from Anchor Point to clear the shoals and kelp and most fishing vessel traffic and their fixed gear.

(1355)

Currents

(1356) From Dangerous Cape, a flood current sets up Kachemak Bay with a velocity of 1 to 2 knots in a northeast direction, and the ebb flows in a southwest to west direction. The currents at the mouth of the bay are uncertain and may vary from place to place, making it difficult to make correct allowance for set in crossing from Anchor Point to Seldovia. Currents of up to 4 knots have been reported throughout the bay. Eddying currents are found immediately off the east side of Homer Spit during flood and ebb currents.

(1357)

Weather, Kachemak Bay and vicinity

(1358) Winds in the Kachemak Bay area are predominantly from the northeast from late fall to early spring. During the rest of the year, southwest winds are the most frequent. Winds are strongest during the late summer and early fall. Storms are more common in the winter, with wave heights reaching 6 to 8 feet in a short period of time. Vessels in transit on the east side of Cook Inlet normally experience some of the heavier winds and seas in the area off Anchor Point.

(1359) **Fogs** are common to the area. Ground fogs occur most frequently in winter, with the heaviest fogs reported to be in summer. Homer and Seldovia occasionally report fog conditions. The more frequent occurrence is in the summer when it may last for days at a time. It is reported that fog banks frequently hang over the open water after harbors have cleared. Summer southwest winds will also hold lingering fog banks against the eastern shore.

(1360) The annual mean temperature of the area is about 38°F (3.3°C). July and August are usually the warmest months. The temperature can range from a high of nearly 90°F (32.2°C) in the summer to well below zero (-17.8°C) in the winter.

(1361)

Ice

(1362) Ice forms in the freshwater streams and within areas of relatively little water movement or where a skim of freshwater rides over the salt water. The boat harbor at Homer and the northeast side of the Spit will pack with slush and pan ice during the colder periods (especially in northeast winds) but rarely halts small-boat traffic completely. It can fill the Homer Small Boat Harbor and extend for up to 500 yards offshore. (See Homer for more.) The headwaters of Jakolof Bay reportedly form ice.

(1363) **Nubble Point**, 4.2 miles northeast of Seldovia Point, is a long sandspit, terminating in a rocky knoll, which may be mistaken for Point Naskowhak if not sure of the position. The east part of the point is wooded.

(1364) **Kasitsna Bay**, between Nubble Point and **Herring Islands**, has anchorage in 12 to 15 fathoms, good holding ground, but is subject to williwaws in strong southeast winds. The water shoals abruptly to the shore and to the flat that fills the cove formed by Nubble Point; the flat in the cove will be avoided by keeping the east end of the point bearing west of **014°**.

(1365) Two rocks close together are 0.5 mile northeast of the north end of Nubble Point and are marked by a buoy in 59°29'31"N., 151°33'09"W., on the northeast side. The west rock is covered 2 fathoms and the east rock bares at extreme low water. The buoy marks the entrance between the rocks and Hesketh Island. A shoal with a least depth of 5½ fathoms is 500 yards southeast of the rocks. A least depth of 12 fathoms was found between the rocks and Nubble Point by giving the north end of the point a berth of over 200 yards. A private mooring buoy is 1.3 miles south-southwest of the buoyed rocks.

(1366) In 2009, the area around the Herring Islands was surveyed and found to have numerous rocks and shoals; caution is advised.

(1367) **Jakolof Bay** is entered at the southeast corner of Kasitsna Bay. Private ferries make daily runs between Jakolof Bay and Homer in the summer months. An overhead power cable with a clearance of 51 feet crosses the entrance of the bay.

(1368) Jakolof Bay is a long, narrow finger of water about 1.7 miles long and 0.25 mile wide, lying in a general north-northwest and south-southeast direction. The entrance to the bay is about 0.125 mile wide and unmarked. A small island that connects to the west shoreline at lower stages of tide is located near the center of the entrance. However, a rock ledge extends outward from the island reducing the clear channel to about 250 feet or less. The bay has numerous rocks and reefs and should be attempted only with local knowledge. It is navigated by locals for about 0.5 mile. Navigation above this point is not recommended for anyone as the bottom shoals rapidly toward the south shore.

(1369)

Currents

(1370) Both ebb and flood currents reportedly run fair with the east shoreline of the bay. Small eddies formed by the current have been observed near and in the entrance during a period of approximately half floodtide. The reported maximum velocity of the ebb and flood currents is about 3 knots. The average is reported to be 1.5 knots.

(1371) A small floating pier, maintained by the state, is on the west shore about 0.2 mile inside the entrance to the bay. Berthing is available at the pier for about 10 to 15 small boats, 15 feet alongside reported. Depths of about 25 feet were reported in the center of the bay to the east of the floating pier. Two small water taxis, which run to Jakolof Bay from Homer, use this floating pier.

(1372) **Hesketh Island, Yukon Island** and **Cohen Island** are high and wooded. An islet is on the reef that extends 0.5 mile northwest from Hesketh Island. **Sixty Foot Rock Light** (59°33'01"N., 151°28'02"W.), 79 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on **Sixty-foot Rock** at the north end of a reef that extends 0.5 mile north from Cohen Island. The light shows a higher intensity beam toward Cook Inlet. There is a prominent yellow cliff on the west end of Cohen Island. The passage between Yukon Island and Hesketh Island is not recommended as it is rocky and shoals quickly from west to east. The channel is restricted by a shoal extending from the southernmost point of Yukon Island to the easternmost point of Hesketh Island with a least depth of 2½ fathoms midchannel. The passage between Yukon Island and Cohen Island is approximately 0.25 mile wide and offers 9 fathoms midchannel; a ledge extends 0.15 mile southwest from Cohen Island. **Eldred Passage**, east of the islands, is deep near the middle, except at the north end where there is a bar on which the least depths found were 10½ to 12 fathoms. A rocky shoal extends 0.35 mile west from Anisom Point into Eldred Passage.

(1373) **Tutka Bay** has no desirable anchorages for large vessels. Broken ground with two small islands and many isolated shoals and pinnacle rocks extends across the entrance. An overhead power cable with a clearance of 78 feet crosses the narrow part of the bay. Mariners are warned that numerous submerged rocks and rocks awash, some in relatively deep water, have been found in the various coves and in Tutka Bay; caution is advised.

(1374) **Tutka Bay Lagoon** is about 4 miles inside the mouth of Tutka Bay on the southwest side. The lagoon, well protected, has depths to 27 feet and contains a salmon hatchery. The entrance, a small narrow channel, is a stream except at high water. The sill that holds the lagoon is at the head of this channel and is about 10 feet above low water. Local tour and fishing boats up to 30 feet in length can enter the lagoon at high water. The entrance to the channel is protected by a rock awash and a 1-fathom submerged delta plain that extends about 0.25 mile offshore.

(1381)

(1375) **Sadie Cove**, the inlet in the east side of Eldred Passage, is clear near midchannel. Foul ground extends about 0.2 mile off the north and south entrance points. An overhead power cable with a clearance of 170 feet crosses the mouth of the cove.

(1376) **Lancashire Rocks**, 1.8 miles northeast from Cohen Island, are awash. They are 0.5 mile offshore with foul ground inshore from them.

(1377) **Gull Island**, 93 feet high, marked by a light, 5 miles northeast from Cohen Island, is among a group of prominent bare rocks that are visible about 10 miles. **China Poot Bay**, south of Gull Island, is nearly dry at low water. An overhead power cable with a clearance of 152 feet crosses near the head of the bay. A narrow channel is along the northeast side of the bay. It terminates at Moss Harbor, a small lagoon at the head of the bay. A well protected anchorage for small vessels can be found in the lagoon in 3 to 5 fathoms; the bottom is mud. Locals transit the channel in skiffs near low water and in larger boats near high water to avoid the strong currents. It should not be attempted without local knowledge due to the shallow depths, strong currents and high choppy sea seen with an ebb current and southwest winds.

(1378) **Peterson Bay**, 1.5 miles north of China Poot Bay, provides good protection from east-west winds. A foul area exists around the small islands near the head of the bay. A channel with a controlling depth of 1 fathom on the west side of the foul area runs to the head of the bay. Depths at the head of the bay are 6 to 12 fathoms.

(1379)

Homer Spit to Anchor Point

(1380) **Homer Spit**, on the north side of Kachemak Bay, is a low gravel and shingle spit, partly covered with grass. It is 4.5 miles long and from 100 to 500 yards wide. It is described as the longest inhabited spit in the world.

(1382) **Coal Point**, the outer end of Homer Spit, is marked by **Homer Spit Light 3** (59°36'02"N., 151°24'34"W.), 34 feet above the water and shown from a tower on top of a hotel roof.

(1383) **Coal Bay**, the bight northeast of Homer Spit, is shoal but there are no outlying dangers other than a submerged wreck covered 3 feet at 59°37'32"N., 151°25'11"W. **Mud Bay** is within Coal Bay.

(1384) **Homer**, at the base of Homer Spit, is a fishing and tourist town with several stores, hotels and a small hospital. From Homer it is about 143 miles to Anchorage, 158 miles to Seward and 1,313 miles to Seattle.

(1385)

Prominent features

(1386) Homer Airport, at the base of Homer Spit, has an aerolight and approach lights that are aligned with the runway. When lighted, the approach lights are highly

visible however, they are lighted only when needed by aircraft. The tower and chute of the wood chip loading facility at the Deep Water Dock and the 8 light towers surrounding the small-boat harbor are also prominent.

(1387)

Anchorages

(1388) Good anchorage for medium to large vessels can be had 1.0 mile or more northeast of Homer Spit Light 3 off the Spit, in 10 to 23 fathoms, soft bottom. Large vessels anchor on the range of Sixty-foot Rock with Coal Point, 1 mile north-northeast of Coal Point, in 22 fathoms. Smaller vessels can anchor almost anywhere northeast of the spit in 2 to 10 fathoms, mud bottom. Due to the large tidal range in Kachemak Bay, mariners should exercise caution when anchoring. The COTP, 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.

(1389)

General Requirements for All Vessels

(1390) 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 Anchorage or Marine Safety Detachment Homer is immediately notified of hazardous conditions as soon as practical.

(1391)

Specific Actions for Heavy Weather

(1392) **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.

(1393) **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, that 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.

(1394)

Weather, Homer Vicinity

(1395) The climate of Homer is marine but with precipitation amounts modified by the Kenai Mountains. The annual precipitation is reduced when air being lifted over the mountains leaves most of its moisture on the windward side. For this reason the usual Gulf Coast amount of near 60 inches (1524 mm) is reduced to less than half that amount. The relatively low annual snowfall is a reflection of the midwinter temperatures. Often precipitation will begin as snow but turn to rain shortly afterwards. The occurrence of the heaviest monthly amounts during the fall and winter months is the result of the increased frequency of storms into the Western Gulf of Alaska during those months.

(1396) Temperatures experienced at Homer are more nearly representative of marine climate than is precipitation. Winters are mild, seldom getting colder than 0°F (-17.8°C), and summers are cool with the maximum temperature seldom going above 70°F (21.1°C). The range between average maximum and minimum temperatures does not exceed 16°F (range of 9°C) during any of the 12 months. The freeze-free period on the average begins in late March and ends in mid-November.

(1397) Surface winds at the station are seldom strong even in winter. However, a short distance to the southwest, over Kachemak Bay, and to the west over Cook Inlet, wind speeds requiring warnings to small craft are fairly common in winter and summer.

(1398) The occurrence of a thunderstorm is rare. Heavy fog is infrequent and of short duration, but patchy ground fog is common in summer and winter.

(1399)

Pilotage, Homer

(1400) Pilotage except for certain exempted vessels is compulsory for all vessels navigating the waters of the State of Alaska.

(1401) Pilots are available from the Southwest Alaska Pilots Association (swpilots.com) office at Homer; telephone 907-235-8783, cell 907-299-7513 (24 hrs/day), email: Dispatch@swpilots.net, FAX 907-235-6119. A 36-hour notice is required.

(1402) Vessels arriving the port of Homer begin their transit by contacting the Southwest Alaska Pilots dispatch at 907-299-7513, one and a half (1.5) hours before arriving at the pilot station, 1 NM south of the Homer Spit. The vessel will then contact the pilot boat "Katmai" or "Mary Dele" by VHF-FM channel 10 or 16, when one half (0.5) hour out. It is common practice for vessels to shape a course (weather permitting) ¾ mile south of Homer Spit Light 3, with a starboard pilot ladder 1 meter from the water and a speed of 8 to10 knots. This proximity to the Homer Spit will allow for a starboard turn for vessels bound for central or northern Cook Inlet ports.

(1403)

Towage

(1404) Tugs up to 1250 hp are available in Homer 24 hours a day. Prior arrangements for their use should be made.

(1405)

Caution

(1406) Ships entering Kachemak Bay to pick up a pilot off Coal Point before continuing into Cook Inlet have been reported coming dangerously close to the **Archimandritof Shoals**, which extend west from Homer Spit and are

marked on the southeast side by a lighted buoy. These instances occur with ships piloting on small-scale British Admiralty Charts, which do not show these shoals. The strangers tend to steer for the lights of Homer or the light towers surrounding the small-boat harbor. Mariners are advised to use the largest scale chart available for this area and to give these shoals a wide berth.

(1407) **Note:** In 1996, the least depths over the southeast portion of these shoals were reported to be 2 fathoms less than charted in the area about 1 mile west to northwest of Archimandritof Shoals Lighted Buoy 1.

(1408) **Customs** and **Immigration** are handled by Anchorage officials with prior arrangements.

(1409)

Quarantine

(1410) A U.S. Public Health Service Contract Physician is located at a clinic in Homer. A hospital is in Homer. (See Appendix A for additional information.)

(1411)

Coast Guard

(1412) Two Coast Guard Cutters (a buoy tender and a patrol boat) are stationed in Homer.

(1413)

Harbor regulations

(1414) Most waterfront facilities are operated by the City of Homer. The Deep Water Dock, City Pier and Fish Dock (in the small-boat harbor) are administered by a Port Director, and the small-boat harbor is administered by a harbormaster. Their office is on the southwest side of the small-boat harbor (telephone, 907–235–3160). They monitor VHF-FM channels 16 and 10; call sign, WHG-651.

(1415)

Wharves

(1416) Homer has 2 deep-draft piers, a fish dock, and a small-boat harbor.

(1417) **Pioneer Dock:** on the north side of Coal Point; U-shaped structure with two trestles, extends 445 feet offshore; outer face, 469 feet, and mooring dolphins provide for ships up to 750 feet, 40 feet reported alongside, deck height 32 feet; northwest face, used for mooring a Coast Guard cutter; Alaska Marine Highway Ferry Terminal; receipt and shipment of petroleum products, fueling vessels, containerized cargo; landing for cruise ships; pipelines extend from the wharf to 8 storage tanks in rear, total capacity 30,500 barrels; water and electricity are at the pier; highway connections. Owned and operated by city of Homer, Petro Marine Services, division of Harbor Enterprises, Inc., U.S. Coast Guard, and the state.

(1418) **Caution:** A tidal current eddy sets Vessels E at this dock (parallel to the face) on both flood and ebb, but more so on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1419) **Homer Deep Water Dock:** 200 yards north of Homer Breakwater Light 2 and marked by private lights, extends 532 feet offshore; 324-foot east face, additional 450 feet with three mooring dolphins and two mooring buoys; 40 feet reported alongside; deck height, 28 feet; water; highway connections; receipt and shipment of conventional and containerized cargo; receipt and shipment of logs and wood chips; and receipt of seafood. A 140-ton mobile crane, and 31-, 9- and 4-ton forklifts are available. Wood chips are loaded at up to 500 tons per hour via a loading tower and telescopic chute; 35 acres of open storage at the rear. Owned by the City of Homer and operated by the City of Homer and Gates Construction Co. Ebb currents set vessels off this dock and flood currents set vessels on, with the ebb's set off being stronger. Portside-to is recommended for vessels on the outer face, except for large vessels with certain loading operations.

(1420) **Caution:** From January to March, ice floes can impede operations at Homer Deep Water Dock and City Pier. Ice floes get blown in from the head of the Bay by strong NE winds.

(1421) **City of Homer Fish Dock:** on the southeast side of the small-boat harbor; 383-foot face with 20 feet reported alongside; deck height, 31 feet; 50-foot side faces with 10 to 20 feet reported alongside; water; highway connections; receipt of seafood; handling supplies for fishing vessels; and icing fishing vessels; two 5-ton and six 2½-ton derricks. Owned and operated by the city of Homer.

(1422) **Homer Small-Boat Harbor**, protected by a breakwater, is just northwest of the Pioneer Dock. A light on the outer end of the breakwater marks the entrance. A dredged channel leads between the breakwaters to the beginning of the piers at the southeast end, thence turns northwest to separate the basin in half. (See Notices to Mariners and the latest edition of the chart for controlling depths.) The basins on either side of the entrance channel are maintained by local interests.

(1423) The harbor has moorage for about 920 vessels with an additional 500 transient spaces; the **harbormaster** assigns berths. The harbormaster's office monitors VHF-FM channel 16; channels 10 and 68 are used as working frequencies. During the summer the harbor is very crowded. Water and electricity is available on some floats, and gasoline, diesel fuel and water are available at floating fuel piers on the southeast side of the entrance and the north side of the entrance. A 300-ton steel grid and a 5-lane launching ramp are also available. The basin is owned and operated by the city.

(1424) **Caution:** From January to March, during severe cold spells, ice floes can clog the entrance channel and cause the harbor to freeze up to 4 to 6 inches thick, impeding the operations of smaller vessels.

(1425)

Supplies and Repairs

(1426) Provisions, water, ice, gasoline, diesel fuel and marine supplies are available. Machine shops and electric motor shops are in town. Vessels of less than 200 feet perform most repairs either alongside berths, on the grids in the small-boat harbor or in shallow-water lagoons northwest of the Homer Deep Water Dock.

(1427)

Oil Spill Response Resources

(1428) Limited resources are available in Homer, with additional resources being available from Nikiski and Anchorage. (For further information, contact Coast Guard Captain of the Port W Alaska, in Anchorage.)

(1429)

Communications

(1430) Landline telephone, radiotelephone and cellular telephone service are available in Homer. Scheduled air service is available to Anchorage, and air taxies run to Seldovia and Port Graham. The Alaska Marine Highway System has scheduled ferry service for passengers and vehicles from Seldovia to Homer, Kodiak and Seward and down the Alaska Peninsula once or twice a week for about 10 months of the year. Private passenger ferries make runs to local communities during the summer. Homer is connected with the Alaska Highway System via the Sterling Highway.

(1431) **Halibut Cove**, on the south shore about 6 miles east of Homer Spit, affords excellent anchorage for large and medium-sized vessels in 23 fathoms with good holding bottom. **Halibut Cove Light 2** (59°36'01"N., 151°12'53"W.), 70 feet above the water, is shown from a small white house with a red triangular daymark on the northeast point of **Ismailof Island** on the south side of the cove. A daybeacon, 0.3 mile south of the light, marks a rock awash. Shoals of 4 and 4¾ fathoms are near the middle of the cove due east of the light. The community of Halibut Cove is on the shores surrounding an inner rocky lagoon between Ismailof Island and the mainland. This rocky lagoon is almost split by a gravel bar. Halibut Cove operates a small-craft float facility on the east side of this inner lagoon, providing about 1,000 feet of berthing space with 10 to 15 feet reported alongside; enter from the east. Another facility is on the west side of the lagoon from which a mail and passenger boat operates. The west entrance is very foul and should only be used with local knowledge. There are daily passenger runs to Homer in the summer and twice weekly mail service the rest of the year. Telephone service and summer lodging is available in Halibut Cove.

(1432) **Halibut Cove Lagoon**, at the head of Halibut Cove, has depths to 38 fathoms. The lagoon is isolated at low water by a gravel bar which reduces the entrance to a swift, shallow stream. At high water, the navigable channel on the northwest side of the entrance is not well defined; local knowledge is advised. A public dock is at the south end with 110 feet of berthage and deep water reported alongside. The dock is used by water taxis delivering hikers and local boaters.

(1433) **Bear Cove**, on the south side of Kachemak Bay near the head, offers good anchorage in 12 fathoms, although the williwaws are violent and the swinging room is constricted. A rock awash is near the middle of the cove about 0.4 mile from the head.

(1434) The head of Kachemak Bay consists of extensive mudflats. A local power company maintains a barge dock and small-craft float on the southeast side of the mouth of **Bradley River** at the head of Kachemak Bay. The barge dock has a 100-foot face, deck height of 18 feet, and dries at low water. A landing craft ramp adjoins the north side of the dock. The float is 40 feet and also dries at low water. The barge dock is used for receipt of construction materials and the float is used by recreational boats delivering hikers. A gravel airstrip is near the facility. Due to the tide restrictions, local knowledge is advised. The north side of Kachemak Bay is bordered with mudflats and the 10-fathom curve is about 2 miles offshore. From this curve the water shoals abruptly toward shore.

(1435) From Homer Spit to **Anchor Point** the coast is a line of bluffs, with the greatest height of 750 feet at **Bluff Point**. In front of the bluff is a narrow rock and shingle beach. Numerous hazardous rocks are offshore between Homer and Anchor Point. The depths inside the 10-fathom curve are irregular, and there is a possibility of detached boulders not found by the survey. Vessels transiting to and from Homer to the north are advised to stay 3 miles offshore from Bluff Point and 5 miles offshore from Anchor Point to clear the shoals and kelp, and most fishing vessel traffic and their fixed gear.

(1436) **Anchor Point Light** (59°46'09"N., 151°52'01"W.), 41 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the point. Anchor Point is an important transit turn point and is a "Securite" Broadcast reporting point used by large vessels. (See Securite Broadcasts, indexed as such, earlier this chapter for more.) Note: The vicinity of Anchor Point has some of the heavier winds and higher seas on the Homer to Anchorage transit.

(1437)

Cape Starichkof to Clam Gulch

(1438) The main bluff line recedes about 0.4 mile from the shore at Anchor Point (59°46.3'N., 151°52.1'W.) and approaches the coast again about 1 mile to the north, then continues close to the shore up to Cape Starichkof. The bluff attains an elevation of 270 feet 2.8 miles north of Anchor Point, then gradually descends to the north.

(1439) At **Cape Starichkof** about 7 miles north-northeast of Anchor Point, the bluff recedes again, is less steep and is covered with vegetation. North of the cape the bluff follows the shore, varies from 100 to 240 feet in elevation and continues nearly to **Cape Ninilchik** about 15.5 miles north-northeast of Anchor Point. Cape Ninilchik is a "Securite" Broadcast reporting point used

by large vessels. (See Securite Broadcasts, indexed as such, earlier this chapter for more.)

(1440) From north of Anchor Point to Cape Ninilchik, the coast is mostly clear, with intermittent boulders and some submerged wellheads. A lighted parabolic antenna is on Cape Starichkof. This antenna and three more extending north to Kenai are the only prominent and distinctive features between Anchor Point and Kenai.

(1441) **Deep Creek**, 1.8 miles southwest of Ninilchik, is recognized from seaward by a break in the bluff 0.4 mile wide. A gravel road leads from Sterling Highway to the beach, a state camping ground and launching ramp. There is much small boat traffic from this area in the summer.

(1442) **Ninilchik**, a fishing settlement at the mouth of Ninilchik River, has a small-boat basin only reachable at high tide.

(1443) **Ninilchik Channel Entrance Light** (60°03'17"N., 151°39'53"W.), 25 feet above the water, is shown from a tower with a red and white diamond-shaped daymark on the seaward end of the north jetty; the light marks the entrance to a small-boat basin inside the mouth of the Ninilchik River. The approach to Ninilchik is through scattered off-lying rocks to the entrance channel, which should be used only with local knowledge. A submerged rock sill about 9 feet above MLLW extends across the entrance channel about 50 yards above the entrance light. A daybeacon on a pole, just inside the seaward end of the south jetty, warns of the approach to the sill, and another daybeacon on a pole marks the northeast end of the sill. The project depths in the entrance channel and basin are 8 feet and 2 feet above MLLW, respectively. The channel is narrow and difficult and, with local knowledge, can be used in daylight and during relatively calm weather at high tide.

(1444) **Ninilchik Small-Boat Harbor**, 400 feet above the mouth of the Ninilchik River, is 400 feet long by 120 feet wide and used for mooring commercial vessels and recreational craft. The boat basin has one floating pier, which is in place from early June to late September and has a capacity for approximately 32 vessels. No public supplies or repair services are available. Landline telephone service is available. Ninilchik is connected to the Alaska Highway System via the Sterling Highway.

(1445) North of Cape Ninilchik the coast is very foul, being characterized by immense boulders not marked by kelp. The boulders apparently rest on comparatively flat bottom, so that soundings give no indications of them. It is probable that many more exist than were found by the survey.

(1446) **Clam Gulch**, 14 miles northeast of Ninilchik, has a gravel road leading from Sterling Highway to the beach. A lighted parabolic antenna is prominent 1.5 miles south of Clam Gulch.

(1447)

Sukoi Bay to Dry Bay

(1448) On the west shore of Cook Inlet, from Cape Douglas (58°51.0'N., 153°15.0'W.) to Chisik Island about 80 miles to the north-northeast, the mountains generally rise abruptly from the water, and Iliamna and Redoubt Volcanoes tower well above the surrounding peaks, affording excellent marks from all parts of the lower inlet. The west shore of the Cook Inlet is reported to have more floating debris and logs in summer and larger ice pans in winter than the east and more trafficked shore of the Inlet.

(1449) **Sukoi Bay**, on the north side of Cape Douglas, is shoal and can be used only by small craft with local knowledge. Rocks bare at low water in the middle of the entrance, and a ledge bares at low water between the rocks and the south shore.

(1450) The two bluff points 5 and 8 miles northwest of Cape Douglas are the ends of two sharp, rocky ridges that extend from the highland of Mount Douglas. Vessels navigating between Cape Douglas and Shaw Island are cautioned to avoid a rocky area with a least depth of 2¾ fathoms about 3.5 miles southeast of Shaw Island and a rocky area with a least depth of 3¼ fathoms 2.7 miles south-southeast of Shaw Island. At the head of the bight is a short valley with a glacier. Just clear of the bluff point on the southeast side of the bight is a pinnacle rock as high as the bluff. The bight between this point and the north point of Sukoi Bay appears shoal.

(1451) **Shaw Island**, flat and grass covered, is 10 miles northwest from Cape Douglas and 1.8 miles from shore. A depth of 12 fathoms was found midway between it and the shore. Ledges extend north from the island for 0.8 mile.

(1452) **Kamishak Bay**, about 20 miles northwest of Cape Douglas, has numerous reefs rising to within a few feet of the surface scattered throughout the area. During strong northwest to west winds, (common after mid-August), the bay south of Tignagvik Point to Cape Douglas experiences stronger winds due to the funnel effect of the mountains. These winds are accompanied by a short, high, choppy sea on flood currents. With flood currents and east winds a significant swell develops. Because of these hazards, vessels should proceed with caution in the bay.

(1453)

Currents

(1454) In the south part of the bay, tide rips occur off **Douglas River** with a flood current and strong west winds. In the north part of the bay, the currents follow the coast, flooding northeast and ebbing southwest at a rate of about 1 knot at strength. The current is more noticeable near the shore. With a strong west wind, tide rips occur about 2 to 4 miles north of Chinitna Point.

(1455) The shores of Kamishak Bay are mountainous with bare-faced headlands and palisades of stratified rock. The lower hills are covered with grass and alder brush. There

is no timber except for sparsely wooded areas near the mouth of the Kamishak River and north of Iniskin Bay. The shoreline along the south and west sides of the bay is characterized by a low flat bluff, 50 feet above mean high water. The islands in the bay appear to be detached parts of this bluff.

(1456) The shore throughout the bay is bordered by dangerous reefs, most of which uncover at low water. The south shore of Kamishak Bay is foul with extensive reefs and ledges and adjoining mudflats. **Amakdedulia Cove, Akjemguiga Cove, Pinkidulia Cove, Horseshoe Cove** and **Akumwarvik Bay** are strewn with boulders and reefs surrounded by mudflats that uncover at low tide. A safe passage to the south shore has not been found. Local small fishing boats do enter Akumwarvik Bay thence Kamishak on high tides but this is not recommended without local knowledge. Tide rips occur in this area and off Douglas River.

(1457) It is possible to approach the west shore through a break in the reefs. In the waters north of Chenik Head, this should only be attempted during a rising tide and with local knowledge of the ledges and reefs along the shore. The approach is from the south side of Augustine Island, which is passed from 1.5 to 2.5 miles offshore, on a course of **257°**. Head for Chenik Head, a low flat cape. **Chenik Mountain** (Three Peaks), a high mountain group 3 miles northwest of Chenik Head, show slightly on the starboard hand. Avoid **Juma Reef**, it bares at low water and extends north-northeast from Nordyke Island for at least 1.2 miles. north of this reef is a channel about 3 miles wide and with a least depth of 6 fathoms. As soon as the line of the reefs is passed, change course to **215°**. The west part of **McNeil Head** should be dead ahead and the outer tangent of Step Mountain should be dead astern. Anchor 1,100 yards west of Nordyke Island in 5 fathoms, sticky mud bottom. The currents at this anchorage set south-southwest on the flood and north-northeast on the ebb.

(1458) **Nordyke Island** is 35 feet high, flat, and grass topped. Two smaller flat grass-topped islands are southwest of Nordyke Island. Rock ledges that bare at low water make off from these islets for about 0.5 mile to the south. A series of reefs that bare at low water are like huge stepping stones between Nordyke Island and McNeil Head.

(1459) **McNeil Cove** is shoal and filled with sandflats. The south side of the cove is marked by a prominent headland called **McNeil Head**. Bands of conglomerate rock cross the faces of McNeil Head. **McNeil Islet**, mushroom shaped and about 45 feet high, is about 1,100 yards off this headland. A lagoon in the southwest part of McNeil Cove is used as a refuge in stormy weather by small fishing craft, which lie in the mud during low water.

(1460) South of Amakdedulia Cove are hills and cliffs having a green and yellow tinge. Three flat-topped islets about 30 feet high are off these cliffs. Fingers of reefs spread out from the islets for about 0.75 mile.

(1461) **Chenik Head** is a low flat cape about 50 feet high on the north side of Amakdedulia Cove. A rock ledge bare at low water makes off this point for a distance of about 0.7 mile. An isolated rock, 7 feet high, is on this ledge about 0.1 mile offshore. North of Chenik Head are two small islets that serve as markers for vessels crossing the line of reefs.

(1462) **Amakdedori**, consisting of a few hunting cabins, is 4.3 miles north of Chenik Head and has a long stretch of sand beach covered with drift of all kinds. Rocky outcroppings border this beach just offshore, and several large reefs are farther offshore. A safe landing can be made on the beach north of **Amakdedori Creek**.

(1463) North of Amakdedori is an extensive stretch of conspicuous palisades. Above these and near the west end is a dome-shaped peak about 1,996 feet high.

(1464) **Contact Point** is a round-topped headland about 400 feet high surrounded by precipitous bluffs. It is conspicuous from the vicinity of Augustine Island. A tall pinnacle rock close to the headland identifies it when viewed from the southeast. A submerged ledge extends 0.5 mile offshore from Contact Point.

(1465) The entrance to **Bruin Bay** is north of Contact Point. The bay is separated into an inner and an outer portion by a finger of land running north from a point 1.5 miles west of Contact Point. Two cabins in ruins are on the north end of this finger. The outer part of Bruin Bay has inadequate water for most small vessels; it is bordered by submerged ledges, and its use as an anchorage is not recommended. Numerous reefs exist in the outer bay. A pinnacle rock 1.1 miles **343°** from Contact Point uncovers 3 feet. A passage for small craft wishing to enter the outer bay is parallel to and 1 mile north of the south shore of the outside bay; this passage should only be attempted on a high tide and local knowledge of the reefs in the area is essential. The unnamed cove on the north side of the outer bay uncovers at low water and is strewn with boulders and reefs. The inner bay is reached by passing between the numerous rocks and reefs lying north of the finger of land dividing the bay. The passage is hazardous because of the constricting reefs and very strong currents. The inside bay is virtually a tidal flat strewn with large boulders. Local fishing vessels transit the passage into the inner bay at slack water. Bruin Bay is known for its strong winds out of the west and northeast which often cause boats' anchors to drag.

(1466) The shoreline northeast of Bruin Bay is rugged. A waterfall 3.4 miles north-northeast of Contact Point is conspicuous. **Fortification Bluff** is a line of bold, angular-edged palisades with faces of stratified rock. **Step Mountain** is the headland on the south side of Rocky Cove. Two flat areas below the peak form steps on the side of the mountain. **Rocky Cove** is obstructed by reefs, bare at lowest tides, that extend 2 miles offshore. **Ursus Cove** is exposed to a heavy swell in east weather. The bottom is very broken.

(1467) **Augustine Island** is a 4,304-foot-high volcanic, conical peak from which steam frequently discharges. The upper slopes are barren, but the lower parts of the island are covered with grass, brush and alder. There

are also a few groups of spruce trees. The shore is low, with bluffs in places, and is generally strewn with boulders. A boulder reef extends about 0.8 mile off the northwest shore of the island. The north end of the island, terminating in **Burr Point**, consists of numerous small mounds of boulders with sloughs between. The University of Alaska maintains a summer field camp in this area at a small protected cove on the east side of Burr Point. This facility consists of one wood shed and modern structures for housing seismic research crews during the summer months. The cove can be reached via a small, unmarked channel at any water above half tide and could afford protection from any weather for small boats, but its use is not recommended without local knowledge. The west end of the island is detached from the main part by a lagoon, the entrances to which are partly blocked by boulders.

(1468) The southwest bight is much used by fishing craft as an anchorage, with protection from southeast through northeast weather. It has an even bottom of coarse sand, green mud, shell and gravel. The depth is from 3 to 5 fathoms. Anchor off the sandspit on the east side of the cove; the west side should be avoided because of reported boulders on the bottom. Huge boulders can be seen near the entrances to the two lagoons. A bank having depths of 2 to 3 fathoms extends over 3 miles west of Augustine Island. A second bank having depths of 2 to 4 fathoms extends for about 1.9 miles off the southwest point of the island.

(1469) **Augustine Rocks** are 8.3 miles south from the peak of Augustine Island. They are two flat rocks, with a smaller one between, all covered at high water. Their position is reported to be generally marked by kelp or breakers.

(1470) **Iliamna Bay** is on the north side of Kamishak Bay 13 miles north from Augustine Island. The bay has several suitable temporary anchorages, weather permitting. A lodge is at Dutton, and portage for small boats is available at Williamsport. The west arm of Iliamna Bay is called **Cottonwood Bay**. A gravel airstrip is at the head of bay at Dutton. The greater part of the bay is filled by a flat but there is good anchorage just inside the entrance. The shores are mountainous and there are no trees except the cottonwoods on the flats at the heads of the bay.

(1471) **White Gull Island** (59°37.1'N., 153°34.4'W.), grass covered and about 70 feet high, is conspicuous near the middle of Iliamna Bay just inside the entrance. The bay shoals gradually from 6 fathoms in the entrance north of White Gull Island to 1 fathom in the entrance to Cottonwood Bay.

(1472) **Turtle Reef** extends over 0.4 mile east from South Head at the entrance of Iliamna Bay. The reef is largely bare at low water and is about 15 feet high at its highest point. **Black Reef** is 0.5 mile from shore and 1.1 miles east from **North Head**. The highest points of the reef are two rocks, 5 to 10 feet high. Lying 0.5 mile northeast of Black Reef is another reef that covers at half tide; its south end is 0.5 mile from shore. **A.C. Point**, on the east shore of the bay about 2 miles northwest from North Head, has been used as a landing place.

(1473)

Route

(1474) In the approach to Iliamna Bay the depths are 6 to 8 fathoms several miles from shore, and these depths extend close to Turtle and Black Reefs. Enter the bay between North Head and White Gull Island. When in the bay care must be taken to avoid a reef, partly bare at low water and with 2½ to 3 fathoms close-to, that extends 0.4 mile east from the south point at the entrance to Cottonwood Bay.

(1475)

Anchorage

(1476) Anchorage in 3 to 4 fathoms, soft bottom, can be had on a temporary basis 0.8 mile inside the entrance to Iliamna Bay, with the north side of White Gull Island in range with the south point at the entrance and the north point at the entrance bearing **106°**. The anchorage is exposed to east and southeast winds and there are heavy williwaws with west winds, but it is regarded as secure during the summer, except during the occasional heavy winds.

(1477)

Local magnetic disturbance

(1478) Differences of as much as 3° from normal variation have been reported in Iliamna Bay.

(1479)

Currents

(1480) The currents just inside the entrance to Iliamna Bay have an estimated strength of 1 to 2 knots.

(1481)

Weather, Iliamna Bay

(1482) It is reported that Iliamna Bay does not freeze but that drift ice in large quantities sets in at times from the upper inlet. North gales prevail in winter and heavy williwaws are reported to come from the mountains on the northeast shore. The prevailing summer winds are down the bay and are frequently fresh, especially on bright days.

(1483) **Williamsport**, in a cove on the west shore of Iliamna Bay 1 mile from the north end of the bay, is the east terminus of a 14.5-mile, state-maintained, gravel road between Williamsport and Pile Bay. The road is open from June to October and is constrained by 2 vehicle fords and a 12-foot wide bridge. Vessels less than 12 feet wide, 32 feet long and 9½ feet high are hauled, by truck, between Williamsport and Pile Bay. From Pile Bay the vessels transit Lake Iliamna to the Kvichak River and down the river to Bristol Bay. The controlling depth in the river was reported to be 2 feet in 1996. This depth may be more or less, depending on the runoff.

(1484) This portage road continues on after Pile Bay to Pedro Bay, on Lake Iliamna.

(1485) Williamsport consists of a boat ramp. The wharf ruins and boat ramp dry at +14 feet. The operator of the hauling service monitors VHF-FM channel 10 when

prior arrangements have been made. Because of working limitations and tides, boats have to wait for a 17-foot tide to be hauled out. Due to the tidal requirements and the privately marked meandering channel, local knowledge is needed.

(1486) **Iniskin Bay**, on the north side of Kamishak Bay 3 miles east of Iliamna Bay, is a secure harbor in any weather, although subject to some williwaws from the high sharp bare peaks on the west shore. It is considered the only secure anchorage for medium-sized vessels on the west side of the Cook Inlet and is used by fishing industry vessels up to 4,000 tons.

(1487) The east shore is generally low and alder covered. The west and upper parts of the bay are filled with boulder-strewn flats, bare at low water, and the east part is shoal and fringed by a reef. The channel is nearly 0.7 mile wide at the entrance and tapers to a narrow slough at the head.

(1488) Three small islands with outlying reefs are on the east side of the entrance of Iniskin Bay. The north and largest is **Scott Island**, about 40 feet high and partly wooded, and from it a reef with rocks about 15 feet high extends 0.5 mile northwest. The middle island is about 35 feet high, and from it a reef extends 0.6 mile southwest, terminating in **Iniskin Rock.**

(1489) **Iniskin Island**, outermost of the three mentioned above, is 50 feet high on the north side, and from it a reef partly bare at low water extends 0.5 mile southwest; lying 1 to 1.3 miles southwest from the islet is **Iniskin Shoal**, a submerged reef covered 4 feet, which does not break in heavy weather. These reefs rise abruptly from depths of 5 to 8 fathoms.

(1490) **Iniskin River**, at the head of Iniskin Bay, is navigable for boats of not more than 3-foot draft for a distance of about 2 miles above the entrance.

(1491)

Route

(1492) To enter Iniskin Bay, avoid the reefs that rise abruptly from deep water and extend about 1 mile from the shore east of the bay. Pass more than 1 mile south of the outer islands off the entrance. When two prominent headlands (59°40.4'N., 153°28.5'W., and 59°41.6'N., 153°27.8'W.) on the west side of Iniskin Bay are in line, steer this range until near the west shore, avoiding a reef that extends about 0.7 mile south from **Knoll Head**. Follow this shore a distance of 0.3 mile until **Range Peak**, on the north side of **Right Arm**, is in line with Iliamna Volcano, and then steer this range; the chart is the guide.

(1493)

Anchorages

(1494) Anchorage is on the range, from 1.0 to 2.5 miles above Scott Island, in 5 to 10 fathoms, clay bottom, where the width of the channel between the 5-fathom curves is about 700 yards. Smaller fishing vessels will anchor either on the southeast side about 1 mile north-northwest of Scott Island or on the northwest side 2.5 to 3.5 miles north of Scott Island, in 3 to 6 fathoms. The west side is exposed to swell from strong southeast weather, which renders it fair to poor for smaller vessels unless they anchor in the shallower waters on the southeast side of the bay.

(1495)

Currents

(1496) The tidal current averages 1 knot in Iniskin Bay. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1497)

Local magnetic disturbance

(1498) Differences of as much as 3° from normal variations have been observed in Iniskin Bay.

(1499) From Iniskin Bay to Oil Bay, the coast is fringed by a reef that extends about 1 mile from shore and rises abruptly. Many of the rocks show at low water. **Pomeroy Island**, 2.2 miles southeast of Scott Island, is small and rocky and has a few trees on its west end. **Big Rock**, 9 feet high, is 1 mile east of Pomeroy Island. From Iniskin Bay to Oil Bay there is a comparatively smooth passage for launches with local knowledge inside the reefs. However, this passage is exposed to more ground swell than the outside route.

(1500) From Oil Bay to Chinitna Point reefs extend about 1 mile from shore in places and rise abruptly from deep water. Rocks show at low water close to shore only.

(1501) **Oil Bay** is shallow and open with a sand beach at its head that bares for 0.8 mile from shore. The bottom is rocky and foul for about 1 mile offshore on the west side of the entrance.

(1502) **Dry Bay** is a rocky shoal bight between Oil Bay and Chinitna Point. The bay has a sand beach at its head.

(1503) An 8-fathom shoal, about 2 miles northeast of Chinitna Point and about 1.5 miles offshore, is usually marked by turbulence that can be hazardous to small craft. Because of the irregular bottom and swift tidal currents, seas two or three times as high as the seas in adjacent areas–often 8 to 10 feet high–may be in the vicinity of the shoal.

(1504)

Chinitna Bay to Tuxedni Bay

(1505) **Chinitna Bay** is shoal, and an anchorage in 4 to 5 fathoms in the entrance is exposed to all east winds. The bottom is muddy and good holding ground, and anchorage can be selected anywhere in the bay where there is sufficient depth to remain afloat at low water. There are strong williwaws with west winds. The bay is filled with ice during the winter. Tidal currents average 1 knot in Chinitna Bay.

(1506) **Gull Island**, 100 feet high, rocky and grass covered, is on the south side of the entrance to Chinitna Bay. Reefs extend 0.6 mile northeast and southeast from the island.

A deep channel, 0.3 mile wide, leads into Chinitna Bay between Gull Island and the mainland to the southwest.

(1507) From Chinitna Bay to the prominent waterfall 5 miles south of Chisik Island, the coast is low and wooded, with lagoons and marshes in places and some quicksand. Along Tuxedni Channel the coast comprises rocky bluffs and rises abruptly to high land.

(1508)

Caution

(1509) An extensive shoal, with rocky, very irregular bottom, at least 3 fathoms and 3.9 miles offshore, extends 6 miles from the west shore between Chinitna Bay and Tuxedni Channel. Tide rips mark the shoal except at slack water and are dangerous to small craft in heavy weather; the heaviest rips are near the extremity of the shoal, about 6 miles offshore. Numerous boulders, some awash, are just north of the entrance to Chinitna Bay and extend as far as 1.2 miles offshore. Small craft without local knowledge should avoid this area. Deep-draft vessels should avoid areas with depths of less than 10 fathoms.

(1510) Floating debris, including large logs, often forms long windrows parallel to shore about 4 miles off the coast in the vicinity of Chinitna Bay. Although logs are common throughout Cook Inlet, they seem to gather here more frequently than at other places.

(1511) **Red Glacier**, 7 miles north of Chinitna Bay, is a prominent landmark that derives its name from the red soil covering the seaward edge.

(1512) **Iliamna Volcano** is a prominent landmark. Steam occasionally issues from fissures just below the summit and from one of the lower peaks on the southeast slope.

(1513) **Chisik Island** has a narrow ridge, comparatively smooth on top, that slopes gradually upward from the southeast end of the island to its northwest end where it terminates in a conspicuous cliff. **Chisik Island Light** (60°05'45"N., 152°33'42"W.), 215 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the south end of the island; a reef extends 0.3 mile south.

(1514) **Tuxedni Channel**, on the southwest side of Chisik Island, is considered a protected anchorage.

(1515) **Snug Harbor** is generally accepted as including all the waters of Tuxedni Channel from Chisik Island Light to about 1 mile inside the entrance. These waters are quite well protected from all winds except williwaws blowing from the north end of Tuxedni Channel. The holding ground is good throughout the entire area, and safe anchorage can be found on either side of the channel except when floe ice is present to varying degrees between January and May, depending on the severity and the stage of the tides when the ice leaves the lagoons and streams at breakup time.

(1516) A former cannery on the east side of Snug Harbor, on Chisik Island, has a caretaker on site. A T-head pier has about 10 feet reported alongside.

(1517)

Route

(1518) To enter Tuxedni Channel give the south end of Chisik Island a berth of over 0.5 mile, keep in midchannel until about 2 miles inside the entrance, and then follow the Chisik Island shore at a distance of 0.5 mile. The anchorage is about 3.5 miles above the light, in 13 to 14 fathoms, mud and sand bottom, and has a clear width of 0.7 mile. On the island side, the shore is bold but a shoal makes out 0.6 to 1 mile from the main shore abreast the anchorage; the shoaling is abrupt on the sides of the channel and there are boulders in places on the shoals. Heavy williwaws occur with gales from any direction and raise a choppy sea dangerous to open boats. The channel is occasionally blocked with ice from January to March.

(1519)

Currents

(1520) The current in Tuxedni Channel floods northwest at a velocity of 1.1 knots and ebbs south-southeast at a velocity of 1.9 knots.

(1521) **Tuxedni Bay** consists largely of shoals and reefs. A narrow channel extends from Tuxedni Channel nearly to the head of the bay. This channel shoals rapidly after leaving Chisik Island. The passage north of Chisik Island should be avoided, even by small craft.

(1522) In 1978, the NOAA Ship FAIRWEATHER reported the shifting of rocks and the possibility of uncharted rocks in Tuxedni Bay west of longitude 152°40'W. Caution is advised in this area.

(1523)

Redoubt Point to Turnagain Arm

(1524) From Tuxedni Bay to Harriet Point, the west shore of Cook Inlet is a gravel bluff with trees on top and a few boulders in the water. **Redoubt Point** (60°17.3'N., 152°25.0'W.), 7 miles northeast of Tuxedni Bay, is an alder-covered bluff from 200 to 300 feet high, with a number of bare slides. There are boulders in places on the shoals that fringe this shore, and vessels should proceed with caution when inside the 10-fathom curve.

(1525) A shoal **(South Kalgin Bar)**, in the center of the Inlet, extends 16 miles south from Kalgin Island and is marked at its south end by a seasonal lighted bell buoy. There are spots bare at low water for nearly 8 miles from the island, and thence south the least depth found is 2 fathoms. The bottom is very broken. No boulders show at low water, however, except near the island. Care should be taken for the entire 16-mile distance to avoid drifting into shoal waters.

(1526) **Harriet Point**, on the west shore, is a clay bluff about 100 feet high, with boulders at the water. A boulder reef, bare at low water, extends 0.8 mile east from Harriet Point. The point should not be approached closer than 1.5 miles on the line of the reef. The currents are very swift at Harriet Point, exceeding 5 knots on large tides, and with south breezes bad tide rips occur between Harriet Point and Kalgin Island and extend some

distance south. In 1975, the NOAA Ship DAVIDSON observed a dangerously steep, short, and choppy sea condition between Harriet Point and the south part of Kalgin Island. This sea condition resulted from strong currents and opposing winds, and the steep waves were of short duration. About 0.6 mile north-northwest of Harriet Point, 0.5 mile from shore, the ebb current has a velocity of 2 to 3 knots, while the flood current is weak and of short duration. **Harriet Point Light** (60°23'45"N., 152°14'15"W.) 95 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the end of the point.

(1527) **Redoubt Volcano** is a visually prominent landmark 16 miles inland from Harriet Point. There is a notch on its southeast slope just below the summit. Steam occasionally issues from fissures at the summit.

(1528) **Kalgin Island**, in the center of the Inlet, is wooded and fringed with boulders and higher at its north and south ends. **Kalgin Island Light** (60°29'06"N., 151°50'17"W.), 140 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the northeast point of the island. **Kalgin Island South Light** (60°20'40"N., 152°05'06"W.), 65 feet above the water, is shown from a skeleton tower with a diamond-shaped red and white daymark on the south point of the island. The south end of Kalgin Island is a "Securite" Broadcast reporting point used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter for more.) Both the northeast and south points form good radar targets. However, it is reported that the northeast point is receding at a rapid rate, so the radar range should be used with caution.

(1529) A passage with general depths of 12 to 15 feet, which is used by fish packers, leads across the north end of the shoal (South Kalgin Bar) from 1.5 to 2.3 miles south of Kalgin Island. (See South Kalgin Bar, indexed as such, earlier this chapter.) A range should be picked up in the opening north of Chisik Island to ensure making the course good, as the currents on either side of the island have a velocity of 3 to 4 knots at times and are nearly slack in the lee of the island. There are boulders near Kalgin Island and possibly in the passage.

(1530) A sand ridge, which uncovers, is about 2.5 to 3.5 miles west of Kalgin Island. During the early summer months and after significant rainfall, floating debris and logs may be encountered in the channel west of the sand ridge. As mentioned earlier, this condition occurs generally in the Inlet but seems to gather here more frequently than at other places.

(1531) From Harriet Point to West Foreland, two shallow bights form **Redoubt Bay**. The shore in the bay is generally low and backed by patches of woods that appear continuous and is subject to overflow at extreme high tides. It is fronted by a flat that extends off a greatest distance of 2.5 miles. The edge of the flat is generally steep-to and no boulders were seen on those parts lying in front of the marshy shore, but abandoned wellheads are on the tide flat. **Drift River** is shallow, rapid, and obstructed by rocks and snags. A good anchorage from all but northeast weather for medium-sized vessels can be found 2 to 5 miles southwest of Drift River Terminal in 3 to 5 fathoms, mud bottom.

(1532) About 10 miles north of Harriet Point and 18 miles south of the mouth of Drift River, is the **Drift River Marine Terminal**, a privately owned offshore loading platform (**Christie Lee**) with an 80-foot face accommodating 780 feet of moorage with dolphins; 60 feet alongside; deck height, 55 feet; a helicopter deck and living quarters are on the platform. Breasting and mooring dolphins, connected by walkways, are adjacent and on the sides of the loading platform. Privately maintained lights on mooring dolphins mark the extremities of the terminal facilities; a sound signal is at the south light. Two 30-inch oil pipelines lead from a 7-tank crude oil tank farm on shore to the platform. The platform headings are 035°-215°. Tankers can be loaded at a rate of 50,000 barrels per hour. A small airfield is maintained ashore, owned and operated by Cook Inlet Pipeline Co.

(1533) The platform is a good radar target.

(1534) **Caution:** Flood currents are reported to set vessels off the terminal while ebb currents set them on. From mid-November to early April, large pieces of ice have been reported to approach the platform during flood currents. The combination of currents and ice floes can cause a strain on mooring lines. Propulsion and machinery have special equipment and operating requirements, as do cargo operations, moorage and vessel draft. See Winter Operating Guidelines, Cook Inlet, indexed as such, earlier this chapter and contact the COTP West Alaska in Anchorage for more information.

(1535) A prominent wooded butte, **Coach Butte**, is 4 miles inland and 14 miles west of West Foreland.

(1536) A boulder-strewn shoal with depths of 7 fathoms or less extends north from the northeast point of Kalgin Island to West Foreland. The outer boulders, which are covered 8 to 11 feet, are 2.5 miles from the island. It is advisable to proceed with caution where the depths are no more than 30 feet greater than the draft. In 1996, shoaling to 1.5 fathoms was reported on this sand and gravel bottom at about 2 miles 030° to 060° from Kalgin Island Light Point.

(1537) Small vessels anchor off the middle of the north end of Kalgin Island, with good shelter from south gales drawing up the inlet. Fair holding ground is from the middle of the north shore west. The currents are as weak as will be found at any of the exposed anchorages. Caution must be observed, however, at low water when crossing the broken boulder-strewn area where depths of less than 5 fathoms make off from the north end of the island.

(1538) The highest parts of the offlying shoal between Kalgin Island and West Foreland uncover between 3 and 4 feet. The shoal has been shifting south and extends 5.5 to 10 miles from the north end of Kalgin Island. Although the shoal is rocky in places, no boulders show at lowest

tides. There are boulders in places on the bottom between the shoal and West Foreland.

(1539) **Kustatan River** has its entrance 3.5 miles west of West Foreland. It connects inland with McArthur River, which enters the inlet 12 miles north of West Foreland. Tidal flats with some boulders extend 2.5 miles south of the river.

(1540) **West Foreland** is a flat headland with a bluff at the water. The shore at West Foreland and for a distance of about 5 miles north is fringed with boulders and abandoned wellheads that extend below low water. Tide rips with a high, short, choppy sea are significant on flood currents and south to southwest winds. (Note: Opposite on the east shore is East Foreland. See East Foreland, indexed as such, later this chapter.) These points mark an important transit turn point and are a "Securite" Broadcast reporting point used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter for more.) For a distance of 8 miles north from West Foreland the bluff is at the water, and numerous boulders are on the beach. The bluff then trends inland to a conspicuous wooded ridge, 5 miles long and 300 feet high, which is 2.5 miles inland at its north end.

(1541) For a distance of 15 miles northeast from the end of the bluff, the shore of **Trading Bay** is flat, grass covered, and subject to overflow and has several sloughs. This part of the bay is fronted by a flat that extends off a greatest distance of 2.1 miles at the mouth of McArthur River and contains abandoned wellheads. This river is about 1 mile wide at its entrance at high water but has a bar which uncovers across its mouth. A marked pipeline that crosses the river upstream is sometimes exposed by river runoff; passage is not advised. A good **anchorage** from southwest weather for medium-sized vessels can be found 9.5 miles north of West Foreland and 2.5 miles south-southeast of the McArthur River in 5 fathoms, soft mud bottom, good holding. Care should be taken to stay north of the charted pipeline areas. Trading Bay has 10 charted oil well platforms that are used as navigation points by vessels transiting the Inlet. Helicopter traffic to and from the platforms is often seen.

(1542) **Nikolai Creek** is a narrow slough 19 miles north-northeast of West Foreland. A marked pipeline that crosses the river upstream is sometimes exposed by river runoff; passage is not advised. About 3 miles east of Nikolai Creek is a prominent gulch with a small stream in it. The bluffs come to the shore at the gulch and continue around North Foreland. Unprotected anchorage 1.2 mile south of the gulch (and 3 miles off both Bruce and Granite Point platforms) is in 5 fathoms, mud bottom, good holding. Care should be taken to stay between the charted pipeline areas.

(1543) **Granite Point** is a prominent gray bluff 1 mile east of the gulch. Between the point and North Foreland, 5.5 miles to the east-northeast, is **Beshta Bay**, a shallow bight with a mud and gravel bottom. One oil production platform and 4 abandoned wellheads are in the bay. A rocky shoal bares at low water and extends 1 mile from shore 1.5 miles east of Granite Point. The flood current has a velocity of 4 to 5 knots and the ebb 2 to 3 knots and the bay experiences strong winds emanating from Turnagain Arm (see Turnagain Arm, indexed as such, this chapter).

(1544) **North Foreland**, on the northwest side of Cook Inlet 25 miles above West Foreland, is a bluff about 150 feet high at the shore end of a hilly wooded ridge (forming a good radar target); thence north the bluff is lower. A large T-head pier (see chart inset), marked by private lights at the outer ends, extends about 0.25 mile southeast from North Foreland. This wharf has a 150-foot face, 700 feet of moorage with dolphins; 26 feet alongside; deck height 35 feet; owned by the Tyonek Native Corp.

(1545) **Caution:** Flood currents are reported to set on the pier and ebb currents off, and the flood current is reported to start earlier at the pier than offshore.

(1546) **Tyonek** is a native village near the mouth of **Indian Creek**, 1.5 miles northeast of North Foreland. The village has a Bureau of Indian Affairs school. Vessels call at Tyonek, and a landing strip just north of the village is suitable for light planes. Mail is received once a week from Anchorage.

(1547) **Chuitna River**, 3 miles north of North Foreland, is marked by a low break in the bluff. A depth of about 8 feet can be taken into the mouth of the river at high water, and the tides are felt about 1 mile upriver.

(1548) A prominent bluff 150 feet high is on the south side of **Threemile Creek**. Bluffs continue north for 2.5 miles from this creek, and then the tree line is from 2 to 3 miles inland from the ordinary high-water mark, the strip between being subject to overflow at extreme high tides. This feature continues to within 2 miles of Point MacKenzie.

(1549) Beginning at Threemile Creek, the shore is fronted by a broad mudflat. Its low-water edge is about 2 miles off the mouth of Beluga River, 5.5 miles off the mouth of Susitna River and 3.5 miles off the shore east nearly to Little Susitna River and then meets the shore at Point MacKenzie.

(1550) **Beluga River** is 11.5 miles north of North Foreland. Locals reported that 2 feet is available at low water across the flats at the mouth of the river, and these flats are said to shift in the winter and spring from ice movement. A fixed bridge about 4 miles above the mouth of the river has a reported vertical clearance of 25 feet.

(1551) The effect of the tide is felt in Beluga River 6 to 8 miles above the mouth, and it is said that boats can navigate as far as Beluga Lake, about 20 miles from the mouth.

(1552) **Theodore River** is 3.5 miles northeast of Beluga River. Three or four miles up, the two rivers are within 1 mile of each other and there is an easy portage between them.

(1553) **Susitna River** is on the north side of Cook Inlet 22 miles northeast of North Foreland. **Mount Susitna**, a prominent landmark along the upper part of the inlet, is

about 6 miles west of the river at a point 13 miles above the mouth.

(1554) The channels across the flats at the mouth of Susitna River have depths of 2 feet or less at low water and change during the winter and spring because of ice and freshet action. The channels above the mouth are said to change frequently in the spring and early summer.

(1555) Launches navigate Susitna River to **Yentna River**, about 20 miles above Cook Inlet, thence run occasionally up the Yentna to the forks about 65 miles from the Susitna. The tides are not felt more than 7 miles from the inlet, and above this the current is swift. Overhead power cables with a least clearance of 37 feet cross the Susitna River about 5 miles above its mouth.

(1556) **Alexander** is a small settlement on the west side of Susitna River 10 miles above the mouth. Susitna is on the east side 18 miles above the mouth and just below the mouth of the Yentna; launches run to and from Anchorage. Mail is delivered to both settlements twice monthly by airplane from Anchorage.

(1557) **Susitna Flats** lies between Susitna River and Little Susitna River and to the east of the latter. **Susitna Flats Light** (61°15'10"N., 150°29'17"W.), 19 feet above the water, is shown from a skeleton tower and is equipped with a racon.

(1558) **Little Susitna River**, 9 miles west of Point MacKenzie, is said to be navigable for landing craft and skiffs at high water for about 8 miles.

(1559) **Caution:** the depths offshore and in the approach to Little Susitna are subject to drastic and continual change.

(1560) **Cape Kasilof** (60°22.0'N., 151°22.0'W.) is on the east side of Cook Inlet opposite Kalgin Island. The high bluffs characteristic of much of the east shore are absent between 3 to 4 miles south of the cape up to Kenai to the north. Cape Kasilof is a "Securite" Broadcast reporting point used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter for more.)

(1561) Five miles southwest from Cape Kasilof and 2.2 miles from shore are **The Sisters**, three prominent rocks, the highest of which is 50 feet. They form good radar targets in calm weather on less than a half tide. The foul ground back of The Sisters extends about 10 miles south from the cape and is strewn with boulders 15 to 50 feet high and a submerged wellhead.

(1562) **Kasilof River** empties into the east side of Cook Inlet 2.5 miles northeast of Cape Kasilof. **Kasilof** is a small rural fishing community on the north side of Kasilof River, about 5 miles above the mouth. **Cohoe** is another small rural fishing community on the south side of the river mouth. Both communities are connected by the Sterling Highway with Anchorage, Homer and other points along the west side of Kenai Peninsula.

(1563) The entrance channel is marked by a light and buoys. A lighted buoy, about 2.4 miles west of the light, marks the approach to the entrance channel; the light, entrance buoys, and approach buoy are maintained seasonally. The shifting, narrow, winding channel that leads through the inner shallows to the river mouth crosses a bar reportedly covered 3 feet at low water. Submerged rocks, and, in summer, setnets, extend south from the channel. Entrance should not be attempted without local knowledge.

(1564) Kasilof River is narrow and has a strong ebb current that pushes boats over the bars in the river bends, especially in mid- to late summer when glacial melt is at its peak. Local boats drawing up to 6 feet find good shelter in the river and remain afloat at low water. Vessels drawing as much as 10 feet enter the river and go as far as 2 miles upstream.

(1565) A seafood dock with a 78-foot face and a launching ramp are on the north side of the entrance. Five more fish-buying docks plus over 100 permit mooring buoys extend up the river for about 2 miles. The river is congested with local fishing vessels during the summer. Other than the launching ramp, no public facilities or services are available.

(1566) **Karluk Reef**, 4 miles north of Cape Kasilof and 3.5 miles from the east shore, is covered 1 foot at low water. There are other shoals and submerged rocks between the reef and the shore.

(1567) **Salmo Rock**, 9.5 miles north of Cape Kasilof, 2.5 miles southwest of the entrance to the Kenai River, and 1.8 miles from shore, is one of the outer boulders off Kenai River and shows well at low water.

(1568) **Kenai**, 11 miles north of Cape Kasilof and on the north side of the Kenai River mouth, is a fishing town and a support base for offshore drilling operations in Cook Inlet; it has heavy fishing vessel traffic in summer.

(1569)

Prominent features

(1570) Three towers with red flashing lights are prominent at night south and east of town.

(1571) The entrance channel to the **Kenai River** is marked by a light and a lighted seasonal buoy.

(1572)

Caution

(1573) The area surrounding the mouth of Kenai River, for a radius of over 4 miles, is strewn with rocks, boulders, shoals, wrecks and other obstructions. The bars at the entrance to the river are nearly dry at low water, but there are depths of 8 to 10 feet in places in the river. Because of the shifting bars at the river entrance, the range may not mark the best water. Mariners are advised not to enter Kenai River without local knowledge. The river is reported to be congested with anchored fishing vessels in summer. (See **33 CFR 162.245**, chapter 2, for navigation regulations for the Kenai River.)

(1574) From June to October, about 120 private mooring buoys are placed on the sides of the river channel from about 300 yards west of Pacific Star Seafoods Wharf to 200 yards south of the Wards Cove Packing Co. Dock.

(1575)

Currents

(1576) The currents in the river mouth attain velocities of 5 knots or more. With a strong southwest wind and flood current, a significant southwest swell occurs at the river

entrance. Sets are also felt at the entrance and over the bar, and steep choppy seas are seen with currents opposing winds.

(1577)

Weather, Kenai

(1578) Prevailing winds from late spring to early fall are from the southeast and southwest, (the strongest being from late summer to early fall); northeast winds prevail in the winter. Fog occurs from December to February, with some fog in the early spring. The yearly average temperature is 35°F (1.7°C), and summers can warm to 90°F (32.2°C), while winters can fall below 0°F (-17.8°C).

(1579)

Ice

(1580) Ice is not a problem in the river entrance but does form inside in the river and can close the river to vessel traffic for short periods from December to the beginning of April.

(1581)

Pilotage, Kenai

(1582) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. (See **Pilotage, general** (indexed), chapter 3, and **Pilotage, Homer**, earlier this chapter (indexed), for the pilot pickup station and other details.)

(1583)

Customs

(1584) Kenai is handled by Anchorage officials with prior arrangements.

(1585)

Quarantine

(1586) A U.S. Public Health Service Contract Physician is located at the medical center in Kenai. (See Appendix A for additional information.) There are hospitals in Kenai and Soldotna.

(1587) A **Coast Guard** Marine Safety Detachment is in Homer.

(1588)

Wharves

(1589) Six wharves for barges and fishing vessels are along the Kenai River.

(1590) **Pacific Star Seafoods Wharf:** North side of Kenai River, about 0.9 mile above the mouth; 720-foot face; dries at low water; deck height, 25 feet; five forklifts; water and electricity; highway connections; receipt of seafood, fueling vessels; owned and operated by Pacific Star Seafoods, Inc.

(1591) **Salamatof Seafoods, Kenai Dock:** Northeast side of Kenai River, about 1.1 miles above the mouth; 310-foot face; dries at low water; deck height, 28 feet; five forklifts; water and electricity; highway connections; receipt of seafood, fueling vessels; owned and operated by Salamatof Seafoods, Inc.

(1592) **Snug Harbor Seafoods, Kenai Dock:** Northeast side of Kenai River, about 1.2 miles above the mouth; 60-foot face; 12 to 15 feet reported alongside; deck height, 30 feet; two 2-ton forklifts; water and electricity; highway connections; receipt of seafood, fueling vessels; owned and operated by Snug Harbor Seafoods, Inc.

(1593) **Ocean Beauty Seafoods, Kenai Dock:** Northeast side of Kenai River, about 1.25 miles above the mouth; 78-foot steel float; 1 foot reported alongside; three 2-ton forklifts; water and electricity; highway connections; receipt of seafood; owned and operated by Ocean Beauty Seafoods, Inc.

(1594) **Kenai City Dock:** East side of Kenai River, about 1.6 miles above the mouth; 170-foot face; 4 feet reported alongside; deck height, 30 feet; three 8-ton fixed cranes; water and electricity; highway connections; receipt of seafood, fueling vessels, handling supplies for fishing vessels; owned and operated by the city. A small-boat launching ramp is adjacent on the north side.

(1595) **Inlet Fish Piers, Kenai Piers:** West side of Kenai River, about 2.8 miles above the mouth; lower and upper piers with 50- and 45-foot faces, respectively; 3 feet reported alongside; deck height, 27 feet; a 35-ton mobile boat lift; two fixed cranes, 1- and 5-ton; six forklifts; water and electricity; highway connections; receipt of seafood, fueling vessels; owned and operated by Inlet Fish Producers, Inc.

(1596)

Supplies and repairs

(1597) Gasoline, diesel fuel, berths, water, ice, several lifts and a launching ramp are available. Most supplies are available in Kenai. Repair service is available and machine shops are in town.

(1598)

Communications

(1599) Kenai is connected, via the Kenai Spur Road, to Sterling Highway and the Alaska Highway System, and scheduled air service to Anchorage is available daily. Landline telephone, radiotelephone and cellular telephone communications are available.

(1600) A fixed highway bridge with a clearance of 14 feet crosses the river about 4.5 miles above the mouth of the Kenai River. It is reported that small craft with local knowledge navigate the river to **Soldotna**, about 14.5 miles above the mouth. The state imposes a 35-horsepower limitation above the highway bridge.

(1601) Oil rig support boats often anchor 3.5 miles south-southeast of the Nikiski piers, 0.5 mile offshore on the charted 3-fathom shoal. However, it only affords protection from northeast winds and boulders are common to the area.

(1602) **Nikiski**, 8.5 miles north-northwest of Kenai, is a mostly rural area with three deep-draft piers and 2 shallow-draft wharves. Except for the facility just northeast of the West Forelands, all facilities are used in connection with the petroleum industry.

(1603)

Prominent features

(1604) Oil tanks on shore are conspicuous, as are the facilities' lights. When they are operating, the steam from the plants at the Unocal Agricultural Products facility and the Tesoro refinery inshore are the most prominent. The T-head piers are reported to be good radar targets.

(1605)

Caution

(1606) The area surrounding the approach to Nikiski is strewn with rocks, boulders, shoals and other obstructions. A shoal area, about 7 miles long with depths of 2½ to 6 fathoms, marked by a seasonal buoy, is about 1.8 miles off the piers at Nikiski. Deeper water is between it and the piers. Setnets are numerous close to the beach from Kenai to past the East Forelands in June and July. **Note:** Vessels should keep well clear of the areas in close proximity and downwind of ammonia and Kenai LNG loading operations while material is being transferred.

(1607)

Currents

(1608) Nikiski has a PORTS site that provides water level, wind speed and direction and barometric pressure information that is updated every ten minutes. The PORTS site is accessible through a voice response system at 907-776-5436. Tidal currents at Nikiski attain a velocity of about 5 knots on the flood and about 2.6 knots on the ebb. (See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.) With a strong southwest wind and flood current, a significant southwest swell affects vessels laying at the Nikiski piers. This wind will also extend the time of flood currents on neap tides to 1 to 2 hours later than predicted.

(1609)

Ice

(1610) Ice floes are a severe problem at Nikiski during January and February; more so on the flood than the ebb, and especially at 2 hours before high water slack. The combination of currents and ice floes can cause a strain on mooring lines. Propulsion and machinery have special equipment and operating requirements, as do cargo operations, moorage and vessel draft. See Winter Operating Guidelines, Cook Inlet, indexed as such, earlier this chapter, and contact the COTP West Alaska in Anchorage for more information.

(1611)

Pilotage, Nikiski

(1612) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. (See **Pilotage, General** (indexed), chapter 3, **Pilotage, Cook Inlet**, and **Pilotage, Homer**, (indexed), the pilot pickup station and other details.)

(1613)

Customs

(1614) Nikiski is handled by Anchorage officials with prior arrangements.

(1615)

Quarantine

(1616) A U.S. Public Health Service Contract Physician is located at a medical center in Nikiski. (See Appendix A for additional information.)

(1617)

Wharves

(1618) Nikiski has three deep-draft piers and one shallow-draft wharf. For a complete description of the port facilities refer to Port Series No. 39, published and sold by the U.S. Army Corps of Engineers. (See Appendix A for address.). Ships at the piers below East Foreland moor portside-to in the winter ice. Companies operating the deep-draft piers at Nikiski have special mooring line requirements and cargo operation procedures. For further information, contact the dock operators.

(1619) **Agrium U.S., Nikiski Wharf:** a T-head pier 3 miles south of East Foreland Light; 210-foot face, 1,135 feet of berthing space with dolphins; 45 feet reported alongside; deck height, 38 feet; bulk urea loading tower with a telescopic loading spout with loading rate of 1,000 tons per hour; 2 anhydrous ammonia pipelines; hose handling derricks and a 2-ton utility hoist; water and electricity; highway connections; storage buildings in rear, total capacity 125,000; storage tanks, total capacity 85,000 tons; shipment of anhydrous ammonia and dry bulk urea; private lights mark each end of the pier; owned and operated by Agrium U.S., Inc.; monitors VHF-FM channel 7A with prior arrangements.

(1620) **Phillips Petroleum Co., Kenai LNG Dock:** a T-head pier 800 yards north of the Agruim U.S. Wharf; 100-foot face; 1,050 feet of berthing space with dolphins; 40 feet reported alongside; deck height, 40 feet; a pipeline extends to three LNG storage tanks in the rear; electricity; highway connections; shipment of liquefied natural gas; private lights mark each end of the pier; owned by Kenai LNG Corp., and operated by Phillips Petroleum Co.; monitors VHF-FM channels 10 and 16.

(1621) **Kenai Pipe Line Co., Nikiski Wharf:** a T-head pier 1,500 yards north of the Agrium U.S. Wharf; 300-foot face, 1,310 feet of berthing space with dolphins; 42 feet reported alongside; deck height, 35 feet; pipelines extend to a tank farm in the rear, capacity over 916,000 barrels; electricity; highway connections; receipt of crude oil, and shipment of petroleum products; private lights mark each end of the pier; owned and operated by Kenai Pipe Line Co., and Tesoro Alaska Co.; monitors VHF-FM channels 7A and 10.

(1622) **APC Natchiq, Nikiski Rig Tenders Dock**, a wharf 2,000 yards north of the Agrium U.S. Wharf; 600-foot face; dries at low water; deck height, 32 feet; a 40-ton mobile crane and two 15-ton forklifts; water and electricity; highway connections; 20,000-square-foot

warehouse and 7-acre terminal; handling material and equipment for offshore oil wells; owned and operated by APC Natchiq, a subsidiary of Natchiq, Inc.; monitors VHF-FM channel 10 with prior arrangements.

(1623)

Oil Spill Response Resources

(1624) Response resources are available in Nikiski, with additional resources being available from Homer and Anchorage. For further information, contact Coast Guard Captain of the Port Western Alaska, in Anchorage.

(1625)

Communications

(1626) Nikiski is connected via the North Kenai Spur Road with Sterling Highway and the Alaska Highway System, and scheduled air service to Anchorage is available daily from Kenai. Landline telephone, radiotelephone and cellular telephone communications are available.

(1627) **East Foreland**, 60 miles north of Anchor Point and about 56 miles from Anchorage, is a nearly level wooded headland with a 276-foot bluff at the water's edge.

(1628) **East Foreland Light** (60°43'10"N., 151°24'27"W.), 294 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the highest part of the bluff. The point marks an important transit turn point and is a "Securite" Broadcast reporting point used by large vessels.

(1629) **Nikiski Bay** is the bight between Arness Terminal and Boulder Point, 2.4 miles to the northeast. Boulders, bare in places at low water, fill the bight. The bight provides anchorage in depths of 3 to 5 fathoms. The smooth sloping bottom provides good holding ground. The anchorage is sheltered from east and south winds but is open to north blows. Currents reach 3 to 6 knots on both the ebb and flood and increase greatly with the distance from shore. Mariners should avoid the charted submerged pipelines areas close northwest of the anchorage.

(1630) **Middle Ground Shoal**, which uncovers 6 feet for 3.5 miles of its length, is a long ridge of hard sand with rocky bottom in places, in the middle of the inlet 9 miles north of East Foreland. A lighted buoy is northeast of the shoal.

(1631) **Caution:** A 2- to 3-knot set into Trading Bay is reported to exist on an ebb current by south bound vessels when abreast of the north end of Middle Ground Shoal.

(1632) **Route Note:** The main deep-draft channel presently proceeds up the west side of the Inlet to the east of Phillips-A Platform and west and north of Beluga Shoal, north of Fire Island Shoal and south of Susitna Flats. See Routes on the Port of Anchorage for more.

(1633)

Oil Production Platforms, Middle Ground Shoal

(1634) Oil drilling and production operations continue in Cook Inlet extending as far north as Susitna Flats. The heaviest concentration of these operations is in the vicinity of Middle Ground Shoal. In general, the oil well platforms, depending on their size, water depth, proximity of vessel routes, nature and amount of vessel traffic and the effect of background lightning, may be marked with a combination of flashing lights, sound signals and retro-reflective material.

(1635) Obstructions in these waters consist of submerged wells and oil production platforms, including appurtenances thereto, such as mooring piles, anchor and mooring buoys, pipes and stakes. Submerged wells may or may not be marked depending on their location and water depth over them. All obstruction lights and sound signals used to mark the various structures are operated as private aids to navigation. (see **33 CFR, 67.01** through **67.10**, chapter 2, for regulations.)

(1636) Mariners are cautioned that uncharted submerged pipelines and cables may exist in the vicinity of these structures or between such structures and the shore. These structures and aids are subject to heavy damage and/or destruction from ice in winter; unlocated debris and remains may exist. Mariners are advised to navigate with caution in the vicinity of these structures and in those waters where oil exploration is in progress and to use the latest and largest scale chart of the area. Mariners should avoid anchoring their vessels anywhere in the vicinity of oil well platforms or their related structures.

(1637) Information concerning the establishment, change or discontinuance of offshore oil well structures and their appurtenances are published in Notice to Mariners. During the continuing program of establishing, changing and discontinuing oil well structures, special caution should be exercised when navigating the inshore and offshore waters of the affected areas in order to avoid collision with any of the structures.

(1638) There are about 15 Oil Production Platforms that extend from East and West Forelands to above North Forelands. They form good radar targets, are well-lit and are used along with significant land features and aids to navigation to fix vessels' positions.

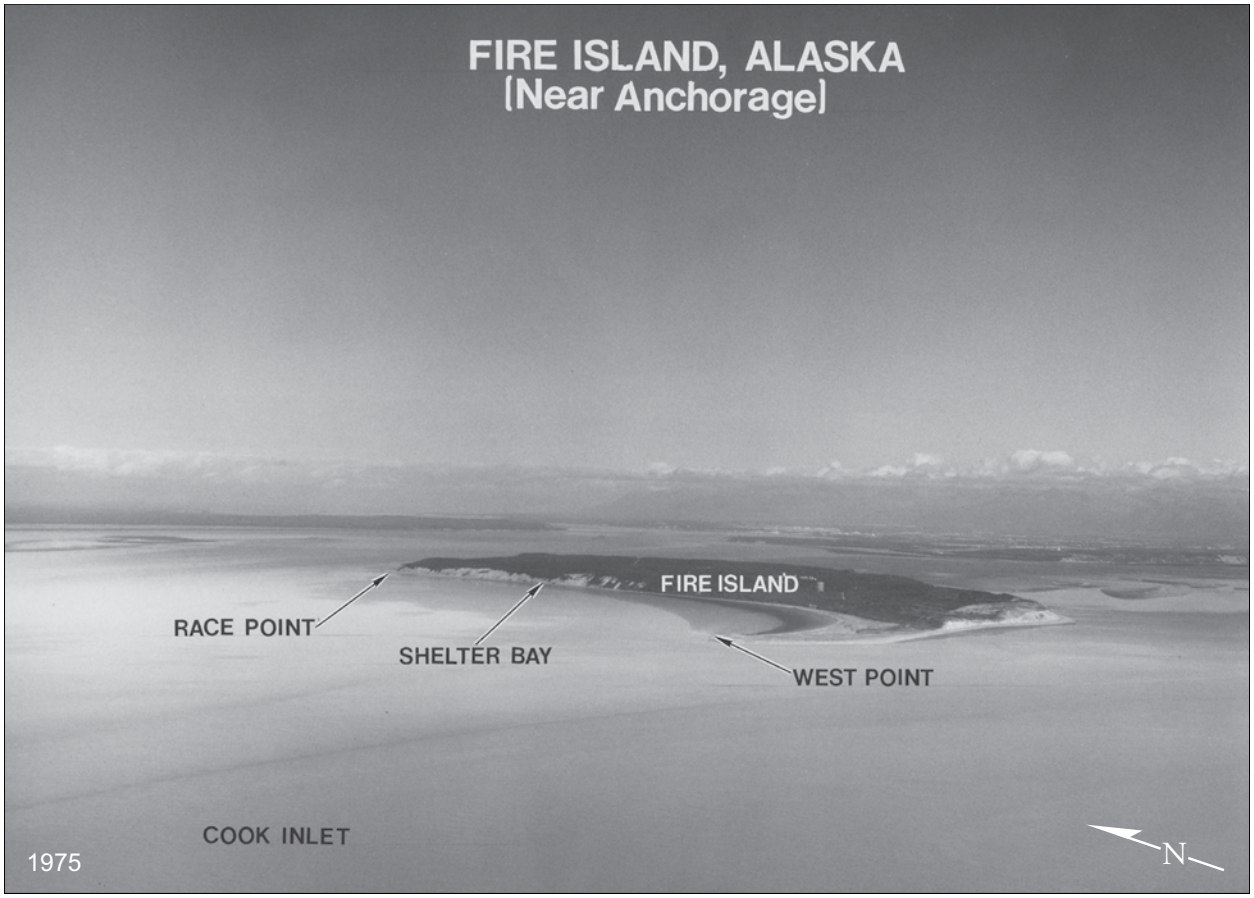
(1639) From **Boulder Point**, a prominent boulder reef with few breaks in it extends for 20 miles along the shore to Moose Point. For the greater part of this distance, the boulders, some very large, show at low water to a distance of 2 miles from shore, and there are occasional ones that show above high water.

(1640) A yellowish bluff is 4 miles east of Boulder Point. **Gray Cliff** is 10 miles northeast of Boulder Point.

(1641) Rocks awash are about 4.2 miles west and 4 miles north-northwest, respectively, from Gray Cliff. Because of the size of the boulders along this shore, it is not safe to skirt it with less than about 5 fathoms beneath the keel.

(1642) **Moose Point**, low and wooded with a grassy flat at its end, is not prominent. Between it and Point Possession, a distance of 10 miles, there are many rocks and a rocky reef. **Moose Point Shoal**, 4.5 miles long and partly bare at low water, begins opposite Moose Point and is 1.8 to 2.2 miles from shore. Moose Point and North Foreland on the opposite shore are "Securite" Broadcast reporting points used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter.)

(1657)



(1643) **Beluga Shoal**, with depths of 7 to 9 fathoms, is in the middle of Cook Inlet about midway between North Foreland and Fire Island and about 8 miles north of Moose Point. The present main channel passes west and north of Beluga Shoal and south of Susitna Flats.

(1644)

Caution

(1645) Vessels navigating the deep channels of Cook Inlet should keep well away from Susitna Flats because their outer limits have been known to change drastically. This area is subject to strong winds and waves emanating from Turnagain Arm.

(1646) About 6 miles northeast of Moose Point is a reddish bluff, on the north side of which is a deep canyon, showing from southwest.

(1647) **Point Possession**, 36 miles northeast of East Foreland, is on the south side of Cook Inlet and on the southwest side of the entrance to Turnagain Arm. The point is a low, rounding, heavily wooded headland with a bluff at the water's edge. This point is a "Securite" Broadcast reporting point used by large vessels. (See "Securite" Broadcasts, indexed as such, earlier this chapter.)

(1648) A reef extends about 1 mile off the northwest side of Point Possession. There are depths of 1¾ fathoms on its northeast edge; the north edge drops off abruptly to depths of 12 to 20 fathoms about 1 mile north. Care should be taken when rounding the point at low water not to pass too close until well clear of the reef. A current line generally indicates the edge of the reef when the tidal current is strong in either direction.

(1649) The entrance to Turnagain Arm, between Point Possession and Fire Island, is subject to drastic and continual change. Fire Island Shoal, marked by a seasonal lighted bell buoy, is about 6.3 miles north-northeast of Point Possession. A submarine pipeline extends from the mainland shore close east of Burnt Island in a 024°30' direction across the arm to the opposite shore.

(1650) **Point Campbell**, on the northeast side of the entrance to Turnagain Arm, is 2.5 miles east of Fire Island. The area between is a mudflat that bares at low water.

(1651) **Turnagain Arm** is only partially surveyed. Most of it is a large mudflat, bare at low water and intersected by winding sloughs. The channels wind from side to side and are subject to change, and strong currents and tide rips increase the difficulties. It is reported that sediment from the rivers is causing further general shoaling in the arm. The Arm is not trafficked beyond 4 miles in except for infrequent local construction barges. Passage is not recommended. The shoreside facilities at **Girdwood**, **Portage** and **Hope** are accessed by highway.

(1652)

Currents

(1653) The currents are very strong and the flood frequently comes in as a bore, with large tides, under certain weather conditions. This bore is said to be 4 to 6 feet high at

times and is very dangerous for small craft. Boats should be beached well above the level of the flats to avoid the bore when it comes in. The bore can be heard about one-half hour before it arrives, sounding like breakers on the beach; it travels slowly. Its rate of advance is about 6 knots but the velocity of the current may exceed 6 knots in places.

(1654) Turnagain Arm is noted for the violent winds that blow out of it whenever the wind is easterly. With light to moderate easterly winds in other parts of the inlet, a moderate gale will frequently blow out of the arm and a heavy sea and tide rips will be raised from its mouth across to North Foreland on the west shore of Cook Inlet. Vessels north- and south-bound in the Inlet should be alert to the potential for heavy sets caused by the combination of strong winds, waves and currents emanating from Turnagain Arm. It is reported that vessels often steer **10** to **25°** offset from their desired course past Turnagain Arm to account for this set.

(1655)

Fire Island to Anchorage

(1656) **Fire Island**, about 6 miles north-northeast of Point Possession, is wooded and has elevations of more than 250 feet in its central part. Near the southwest end of the island are high sandhills with bare summits. The shores are mostly high bluffs except at West Point and **North Point**, the northeast extremity. A gravel airstrip is on the east side of North Point. Numerous 400-foot wind turbines are scattered towards the southwest half of the island.

(1658) **West Point**, the southwest extremity of Fire Island, is marked by **West Point Light** (61°07'34"N., 150°16'56"W.), 30 feet above the water, shown from a skeleton tower with a red and white diamond-shaped daymark. Race Point, the northwest extremity of Fire Island, is marked by **Race Point Light** (61°10'03"N., 150°13'30"W.), 170 feet above the water and shown from a skeleton tower with a red and white diamond-shaped daymark.

(1659) **Shelter Bay**, on the west side of Fire Island between West Point and Race Point, is mostly mudflats, bare at low water. Except for about a 3-knot current closer to shore, the current is strong throughout the flood, but the ebb is weak and after the first 2 hours is nearly slack. With fresh southwesterly, northwesterly or northerly winds, the anchorage has rough seas and tide rips.

(1660) The area west of Fire Island and Shelter Bay is continually changing. **West Point Shoal**, about 2 miles west of Fire Island, has a depth of 1 foot. A seasonal lighted bell buoy marks the northwest side of the shoal.

(1661) **Point Woronzof**, 3.5 miles northeast of Point Campbell, is on the south side of the entrance to **Knik Arm**. A **242°** lighted range (Fire Island Range) northeast of Race Point Light and a **079°** lighted range on Point Woronzof mark the channel in Cook Inlet from Phillips-A Platform to Point Woronzof. It is reported that the 242° Fire Island Range is sometimes difficult to see when the sun is directly behind the range markers. (See Routes, following, on the Port of Anchorage for more.)

(1662) **Point MacKenzie** is on the north side of the entrance to Knik Arm about 2.2 miles north-northeast of Point Woronzof.

(1663) **Anchorage**, on the southeast side of Knik Arm, 175 miles from the entrance to Cook Inlet and 1,428 miles from Seattle, is Alaska's major seaport and largest city, with slightly over half the state's population. The main industries are government, tourism, oil production and transportation.

(1664)

Prominent features

(1665) When approaching Anchorage, conspicuous landmarks are the lights on Fire Island and Point Woronzof, the container cranes at the port, the control tower and aerobeacon at the International Airport, a number of radio and television towers and the ConocoPhillips and Bank of America buildings and Hilton Hotel downtown. The ConocoPhillips building also forms a natural range with Point Woronzof for a long-distance extension of the Point Woronzof range.

(1666)

Routes

(1667) From the entrance point to Cook Inlet, 4½ miles south of East Chugach Island Light, set courses to pass 6 miles south of the west end of Cape Elizabeth Island, 2 to 5 miles west of Point Adam and Flat Island, thence 6 to 7 miles west of Anchor Point Light, 5 to 5½ miles east of Kalgin Island Light, 4 miles east of West Foreland; thence transit through the oil production platforms as traffic, currents and ice conditions allow. After exiting this area, set a course to pass 1½ to 2 miles southeast of the Phillips-A Platform and after another 6½ miles intersect the Point Woronzof Range, thence **079°** to the intersection with Fire Island Range (back range), thence **062°** along Fire Island Range to a point 1.05 miles **304°** from Point Woronzof Rear Range Light, thence **070°** to the city of Anchorage facilities. During especially severe winter ice pack conditions, larger vessels transit inside the shoal off Nikiski, round the East Foreland, continue in the upper Inlet 5 to 7 miles off the east shore from East Foreland to Moose Point, thence transit up between Beluga and Fire Island Shoals to the intersection of the Point Woronzof Range.

(1668) **Mariners are cautioned to favor the south side Point Woronzof Range to keep off Susitna Flats, and the Fire Island Range should be limited to higher tide stages and should be used slightly favoring the southeast side to keep southeast of Knik Arm Shoal.**

(1669)

Channels

(1670) The main channel presently proceeds up the west side of the upper Inlet to the east of Phillips-A Platform and west and north of Beluga Shoal, south of Susitna Flats, north of Fire Island Shoal and Fire Island and between

Knik Arm Shoal and Woronzof Shoal. The channel is marked by lighted ranges and seasonal buoys at critical locations. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(1671)

Anchorages

(1672) A temporary anchorage for deep-draft vessels is about 1 mile west to southwest of the port, in depths of 10 to 12 fathoms, silt bottom. The usual anchorage for small vessels is closer to the shore about 1.5 miles southwest of the port, in depths of 5 to 7 fathoms. Holding bottom at both sites is fair and requires constant vigilance because of the potential for dragging and fouling. It is dangerous to remain at anchor in this area, especially when there is ice.

(1673)

Dangers

(1674) In addition to the dangers in Cook Inlet previously described, **North Point Shoal**, about 2 miles north of North Point on Fire Island, changes radically from year to year and bares several feet at low water. **Knik Arm Shoal**, marked by a seasonal lighted buoy, is about 2 miles west of Point Woronzof. **Woronzof Shoal**, a long shoal that bares, is about 0.4 to 2.6 miles southwest of Point Woronzof and is subject to drastic and continual change. The flats off Anchorage and rocky flats south of Cairn Point should be avoided. The area eastward of Point MacKenzie is also subject to drastic and continual change.

(1675)

Currents

(1676) Anchorage has a PORTS site that provides water level, wind speed and direction and barometric pressure information that is updated every ten minutes. The PORTS site is accessible through a voice response system at 866-257-6787. It is reported that vessels often steer 10° from their desired course when passing Knik Arm Shoal because of prevailing cross currents. Close off the town, the current floods northeast at a velocity of 1.5 knots and ebbs southwest at a velocity of 2.5 knots. One mile off the town, the current averages 2.9 knots. Strong currents that attain velocities of 4 knots or more, at times, in midchannel, and swirls in the area make navigation difficult. It is reported that the flood following the higher of the low waters is unpredictable, especially during the last 3 hours, in the vicinity of the Port of Anchorage wharves. An eddy gyre flows up the east side of Knik Arm during the latter half of an ebb current inside the bight, bordered on the south by the barge wharves and small-boat launching ramp. The ramp also deflects the start of the flood current until half tide and reduces its flow thereafter. Alongside maneuvering at the Port is affected by a set onto the flats with the latter half of the flood current and a set off the wharves on the first of the ebb. The currents further up Knik Arm have a moderate velocity near the west shore, strong in midchannel, and, like all of the upper inlet, are congested with ice packs in the winter.

(1677)

Weather, Anchorage Vicinity

(1678) The **Alaska Range** lies in a 650-mile-long arc from southwest, through northwest, to northeast of Anchorage, approximately 180 miles distant. Anchored at its southwest end by Ilama Lake, it includes **Mount McKinley** and terminates at its southeast end at the White River in Canada. During the winter, this range is an effective barrier to the influx of very cold air from the north side of the range. Extreme cold winter weather, associated with a high pressure system over interior Alaska, may lead to a succession of clear days in Anchorage, with temperatures dropping to -15 °F to -25 °F (-26.1° to -31.7 °C), as contrasted to the -50 °F (-45.5 °C) and even -60 °F (-51.1 °C) readings in the interior. There are some factors, however, that tend to offset the sheltering effect of this mountain barrier. Chief among these is cold air entrapment in various suburban areas during periods of light winds. This results occasionally in temperatures on the outskirts of Anchorage as much as 15 °F to 20 °F (range of 18 to 21 °C) colder than observed at the official observation sites.

(1679) The four seasons are well marked in the Anchorage area, but in length and in some major characteristics they differ considerably from the usually accepted standards in middle latitudes.

(1680) Winter is considered to be the period during which ponds, streams and lakes are frozen; this normally extends from mid-October to mid-April. The shortest day of the year has five hours and 28 minutes of possible sunshine. Periods of clear, cold weather normally alternate with cloudy, mild weather during the Anchorage winter. The clear, cold weather is frequently accompanied by significant fog because of the important low-level moisture source provided by the arms of Cook Inlet that surround the area on three sides; while considerable floating ice is prevalent, the high tides maintain some open water throughout the winter.

(1681) Visibilities of one-half mile or less occur about three percent of the time during December and January, and most of these low visibilities are associated with fog. Snow visibilities generally range from one to three miles, though heavier snowfalls will, of course, restrict visibilities to less than one mile on a few occasions.

(1682) The first measurable snow occurs, on the average, on October 15 but has been as early as September 20; latest measurable snow in the spring averages April 14 but has been as late as May 6. Snow occurs on about 15 to 20 percent of the mid-winter days, and most of the snow falls in relatively small daily amounts, with only two percent of the mid-winter days having more than four inches (101.6 mm). The heavier snows occur in conjunction with

(1704)

Facilities at Anchorage

Name	Location	Berthing Space (feet)	Depths* (feet)	Deck Height (feet)	Mechanical Handling Facilities and Storage	Purpose	Owned/ Operated by:
Northland Services, Anchorage Dock	61°13'40"N., 149°54'06"W.	400	N/A	50	Open storage (4 acres)	Receipt and shipment of containerized general cargo by barge	Swan Bay Holdings/ Northland Services, Inc.
North Star Terminal and Stevedore Co., Anderson Terminal Dock	61°13'44"N., 149°53'47"W.	526	N/A	35	• Open storage (22 acres) • Covered storage (15,000 sq feet) • Four crawler cranes	Receipt and shipment of conventional and containerized general cargo	Alaska Railroad Co./ North Star Terminal and Stevedore Co. 907–263–0169
Port of Alaska, P.O.L. Terminals 1 and 2	61°14'16"N., 149°53'26"W.	2,800	35	40	Pipelines extend to tank storage (66 tanks total)	Receipt and shipment of petroleum products	Municipality of Anchorage, Alaska
Port of Alaska, Terminal No. 1 Wharf	61°14'25"N., 149°53'19"W.	2,800	35	37	Silo storage (20,000 tons)	Receipt of bulk cement	Municipality of Anchorage, Alaska/ Alaska Basic Industries
Port of Alaska, Terminal No. 2 Wharf	61°14'29"N., 149°53'16"W.	2,800	35	37	Open storage (37 acres)	Receipt and shipment of containerized and conventional general cargo	Municipality of Anchorage, Alaska/ CSX Lines of Alaska
Port of Alaska, Terminal No. 3 Wharf	61°14'35"N., 149°53'11"W.	2,800	35	40	Open storage (17 acres)	Receipt and shipment of roll-on/roll-off general cargo	Municipality of Anchorage, Alaska/ Totem Ocean Trailer Express, Inc.
Matanuska-Susitna Borough Port Mackenzie Wharf	61°16'03"N., 149°55'01"W.	500	20	36	Open storage (5,000 acres)	Shipment of manufactured homes to Alaskan Native communities	Matanuska-Susitna/ Alask Manufacturing Contractors

* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

vigorous storm centers moving north across south-central Alaska. Normally, the depth of snowfall on the ground does not exceed 15 inches (381 mm).

(1683) Strong, gusty, north winds that occur, on average, once or twice during the winter will, under favorable snow conditions, cause drifting and packing of snow cover. Although normally an area of light winds, strong "northeast" at Anchorage occasionally result from the rapid deepening of storms in the nearby Gulf of Alaska at a time when the interior is covered by an extensive mass of quite cold air.

(1684) Spring is the period immediately following the famed Alaska "Break-up." This season is characterized by warm, pleasant days and chilly nights; the mean temperature rises rapidly; precipitation amounts are exceedingly small.

(1685) Summer comprises the period from June through early September, and is, in reality, two seasons of about equal length, the first of which is dry and second wet. At the time of the summer solstice, possible sunshine in Anchorage amounts to almost 19½ hours. About the middle of July average cloudiness increases markedly, and the remainder of the summer usually accounts for about 40 percent of the annual precipitation.

(1686) Autumn is brief in Anchorage, beginning shortly before mid-September and lasting until mid-October. The frequency of cloudy days and precipitation drops sharply in early October. Measurable amounts of snow are rare in September, but substantial snowfalls sometimes reaching 10 to 12 inches (254 to 305 mm) occasionally occur in mid-October. Some of the stronger southerly winds, a few with damaging effects, occur in the late summer or fall; these are post-frontal winds following the movement of a storm from the southern Bering Sea or Bristol Bay, northeastward across the Alaskan interior. Somewhat less frequent, but more damaging, are the southeasterly "Chugach" winds that are funneled down the creek canyons on the northwest slopes of the Chugach mountains east of the city; gusts estimated at 69 to 87 knots have caused considerable damage to roofs, power lines and trailers on a few occasions.

(1687) The growing season in Anchorage averages 124 days, with the mean daily temperature above freezing from April 8 to October 23. May 15 is the average latest date for the occurrence of a temperature as low as 32°F (0°C), while September 16 is the average first date with 32°F (0°C) in the fall. The latest date with 32°F (0°C) in the spring has been May 22 (1964), and the earliest in the fall has been August 28 (1984).

(1688)

Ice

(1689) Upper Cook Inlet rarely, if ever, freezes solid because of the enormous tidal range. Vessels can navigate Cook Inlet in the winter, but the combination of currents and ice floes can cause a strain on mooring lines. Propulsion and machinery have special equipment and operating requirements, also cargo operations, moorage and vessel draft. See Winter Operating Guidelines, Cook Inlet, indexed as such, earlier this chapter, and contact the Coast Guard COTP, Western Alaska in Anchorage for more information. The inlet is ice free from about May to mid-November. The ice floes move with the tide, and patches of open water are occasionally visible. Extra caution should be exercised in the restricted approach to Anchorage. Ice leads can break the wrong way and

potentially cause up to 30 course diversion, especially for lower-powered vessels.

(1690)

Pilotage, Anchorage

(1691) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the waters of the State of Alaska. (See **Pilotage, general** (indexed), chapter 3, and **Pilotage, Cook Inlet** and **Pilotage Homer** (indexed) for details.)

(1692)

Towage

(1693) Tugs including a 3,500-hp tractor tug, are available at Anchorage 24 hours a day. Prior arrangements for their use should be made.

(1694)

Quarantine, customs, immigration and agricultural quarantine

(1695) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(1696)

Quarantine

(1697) A U.S. Public Health Service Contract Physician is at a hospital in Anchorage. (See Appendix A for additional information.)

(1698)

Customs

(1699) Anchorage is a **customs port of entry**.

(1700)

Coast Guard

(1701) A **Sector Office** is in Anchorage. (See Appendix A for address.)

(1702)

Harbor regulations

(1703) The Port Director enforces harbor regulations and assigns berthing at all municipal piers, wharves and bulkheads. In winter, the combination of currents and ice floes can cause a strain on mooring lines. Propulsion and machinery have special equipment and operating requirements, as does cargo operations, moorage and vessel draft. See Winter Operating Guidelines, Cook Inlet, indexed as such, earlier this chapter, and contact the COTP W Alaska in Anchorage for more information.

(1705)

Wharves

(1706) Anchorage has one deep-draft wharf facility with berthage for three vessels, two petroleum terminal docks, many commercial barge wharves, two floating docks for tugs and a small-boat launching ramp (See *Facilities at Anchorage* table.) Vessels normally moor starboardside-to in the winter ice.

(1707)

Supplies and repairs

(1708) Gasoline, diesel fuel and water are available at the Port of Alaska Petroleum Terminal. Marine supplies and emergency ship machinery repairs can be obtained in town. Engine and hull repairs are available for small boats.

(1709)

Oil Spill Response Resources

(1710) Limited resources are available in Anchorage, with additional resources available from Nikiski and Homer. For further information, contact Coast Guard COTP Western Alaska, in Anchorage.

(1711)

Communications

(1712) Anchorage is served by coastwise and ocean freight; truck lines serve the port via the Alaska Highway System. The city is the railroad, highway and aerial center for western and south-central Alaska. It is the headquarters of the Alaska Railroad, the state-owned line that connects with Seward, Whitter and Fairbanks. Highways connect with places on the Kenai Peninsula, Fairbanks, Valdez and other places in Alaska. The Alaska Highway also provides a land route through Canada to the conterminous United States.

(1713) The International Airport, 4 miles southwest of Anchorage, is the hub of trans-Pacific air service; flights are offered to all parts of the world.

(1714) Landline telephone, cellular telephone and cable communications are available. The Port of Alaska guards VHF-FM channel 16; call sign, WHJ-82.

(1715) A small-craft ramp and 300-foot float are about 200 yards southwest of the mouth of Ship Creek. The ramp and float dry at low water; however, at other than low water, boats up to 30 feet can be accommodated.

(1716) **Ship Creek**, on the northeast side of the Anchorage waterfront, bares at low water, and there is no range for entering. Small boats rest on the bottom at low water, and local knowledge is recommended.

(1717) From about 7 miles above the entrance to Knik Arm to the head are extensive mudflats that bare soon after high water. The flats are cut by numerous channels and sloughs. The main channel is close to the west shore of Knik Arm, then winds east and north; it is narrow and intricate, navigable only on the tide, and then only with knowledge of conditions.

(1718) **Knik** is a village on the northwest side of Knik Arm, about 15 miles above the entrance and accessible by highway from Anchorage. The channel to Knik is close along the west Shore. **Eklutna**, also accessible by highway from Anchorage, is on the south bank at the entrance to Knik River.