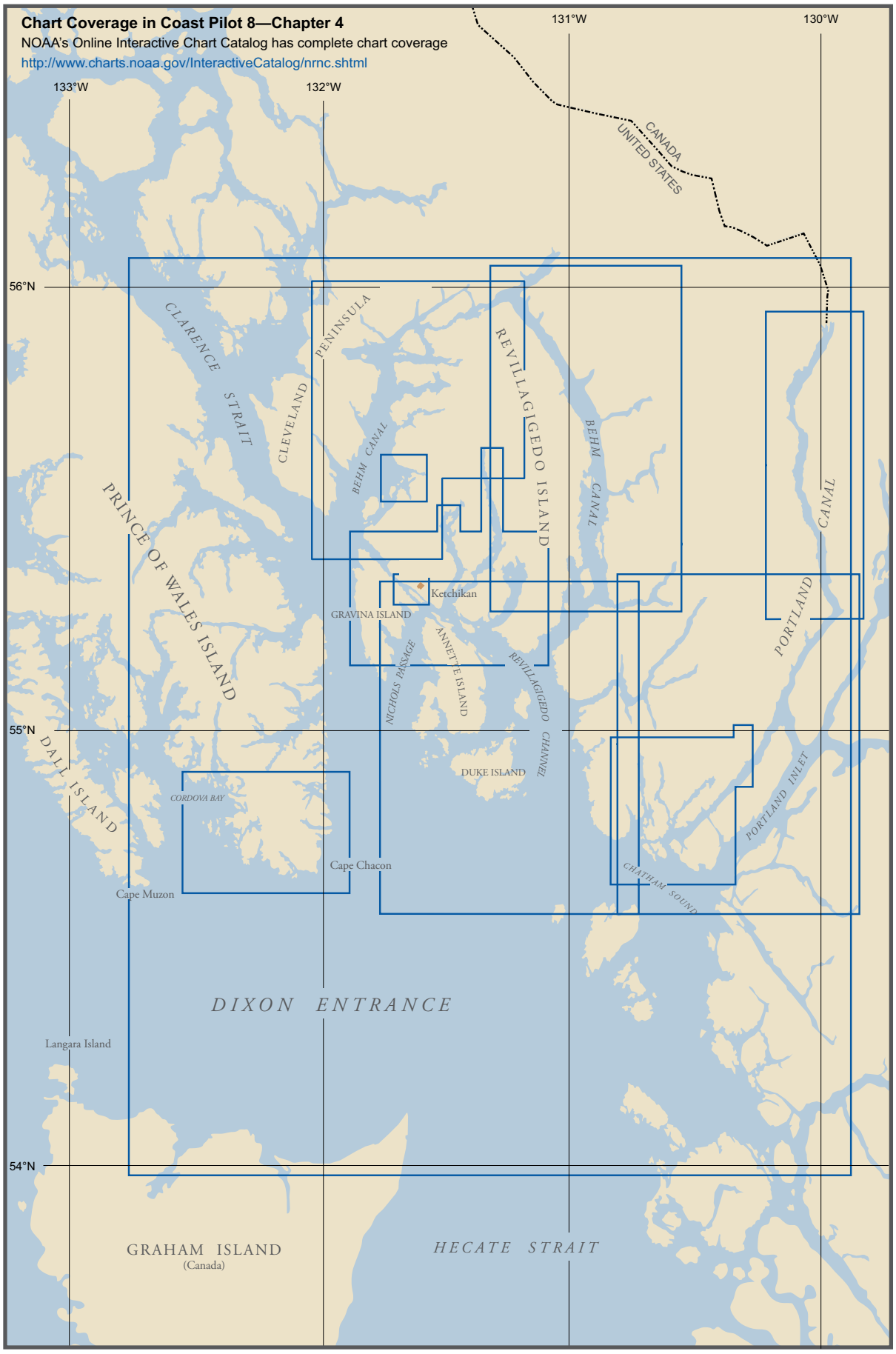
Chart Coverage in Coast Pilot 8—Chapter 4
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
131°W
130°W
133°W
132°W
CANADA
UNITED STATES
56°N
CLARENCE STRAIT
PENINSULA
CLEVELAND
BEHM CANAL
REVILLAGIGEDO ISLAND
BEHM CANAL
CANAL
PRINCE OF WALES ISLAND
Ketchikan
GRAVINA ISLAND
NICHOLS PASSAGE
ANNETTE ISLAND
REVILLAGIGEDO CHANNEL
PORTLAND
55°N
DALL ISLAND
DUKE ISLAND
CORDOVA BAY
PORTLAND INLET
Cape Chacon
CHATHAM SOUND
Cape Muzon
DIXON ENTRANCE
Langara Island
54°N
GRAHAM ISLAND
(Canada)
HECATE STRAIT

Dixon Entrance to Ketchikan

(1) This chapter describes the waters of Dixon Entrance, Pearse and Portland Canals, Revillagigedo Channel, Tongass Narrows, Carroll and George Inlets, Behm Canal, Ward Cove and the city and harbor of Ketchikan.

(2)

Weather

(3) Dixon Entrance is exposed to the rigors of the nearby Pacific. Gales blow frequently from October through April, mainly out of the southeast, up the Hecate Strait. Sometimes north gales draw down Portland Inlet across the northeast end of Chatham Sound, making the crossing from Dundas Island to Cape Fox hazardous. Strong southwest winds create a heavy beam sea on this same crossing. Swells approach Dixon Entrance mostly from the west and southwest, particularly in winter. They move through passages, break on shoals or against shorelines and are heavy at times. In Caamano Passage, the west coast of Dundas Island experiences almost continuous heavy swell. Parry Passage, as well as the west and north coasts of Langara Island, is subject to prevailing ocean swell.

(4) Uncertain currents and a number of hazards make navigation in Dixon Entrance treacherous when visibility is poor. Advection fog plagues these waters from July through September, when visibility less than 0.5 mile occurs up to 5 percent of the time, and is often cyclical over a period of several days. At Langara Island, fog is reported 4 to 9 days each month from May through September.

(5) **Dixon Entrance**, the south approach from the Pacific Ocean to the inner channels of southeastern Alaska and the north seaward approach to those of British Columbia, is entered between Queen Charlotte Islands on the south and Dall and Prince of Wales Islands on the north. It extends in a general east direction from Cape Muzon and Langara Island to Dundas Island, a distance of about 75 miles, with an average width of more than 30 miles; it then contracts to a width of about 8 miles between Cape Fox and Dundas Island and continues with this width to the mouth of Portland Inlet, a distance of 17 miles.

(6) **The International Boundary Line between the United States and Canada runs through Dixon Entrance, Tongass Passage, Pearse Canal and Portland Canal.**

(7) **Bowie Seamount** is a sharp pinnacle with a depth of 13.9 fathoms in 53°17'58"N., 135°39'02"W.

(8) **Learmonth Bank** is in the fairway of the west entrance of Dixon Entrance between 8 and 18 miles north of Langara Island and inside the 100-fathom curve. The bank is about 12 miles long, northwest and southeast, and about 5 miles wide. The least depth is about 19 fathoms over a bottom of sand, rock and gravel.

(9)

Currents

(10) In **Dixon Entrance**, the flood current runs east around Langara Island and sets along the north shore of Graham Island. In the area about midway between Rose Spit and Dundas Island it divides: one part sets north past Dundas Island and the other south into Hecate Strait.

(11) The turn of the current in the vicinity of Rose Spit coincides approximately with the times of high and low water. At times the streams run as high as 4 knots in the vicinity of Rose Spit and cause heavy overfalls that have the appearance of shallow water in depths of 10 fathoms or more. This area should be navigated with great care. Give Rose Spit a wide berth.

(12) At Cape Muzon the flood current sets around the cape northeast and the ebb southwest, with a velocity of about 2.4 knots at strength.

(13) At Nunez Rocks and Cape Chacon the currents are irregular and affected by storms. The flood generally sets east or northeast. From the cape to Nichols Bay there is apparently an eddy with a west set close to the shores. Between the cape and the rock off the cape, the current apparently always runs west, although not strong during the last half of the flood. North of Cape Chacon an eddy runs to the south, close to the shore. Off the cape a current of 2 to 3 knots has been experienced.

(14) On the ebb the general direction of the current is to the west. From Cape Chacon it runs in the direction of Nunez Rocks, probably forced to the south by the current from Nichols Bay; the latter sets east as far as the cape and then turns south. The current from the south entrance of Nichols Bay runs southeast until it meets the main current when it turns west around Nunez Point. West of Nunez Rocks the ebb current is west but is affected by currents from inlets; there are small eddies along shore.

(15) Between Cape Chacon and Zayas Island on the south and Duke Island and Cape Fox on the north, the tidal currents are much confused. In bad weather the heavy and confused sea sometimes looks like breakers.

(16) Between Dundas Island and Cape Fox the flood current sets east with an average velocity at strength of 2 knots, and the ebb current sets west with an average velocity at strength of 3 knots.

(17) 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.

(18) Additional information on currents in these waters is given in the Canadian Sailing Directions British Columbia (North), Volume II.

(19)

Routes

(20) Because of the numerous dangers and uncertain currents, navigation of Dixon Entrance at night or in thick or foggy weather is somewhat risky. In approaching from south, the light on Langara Island is a sufficient guide to the entrance. In approaching from west or northwest, Forrester Island is a good landmark. The light on Cape Muzon and the light on Cape Chacon are good guides when in their vicinity, but the unmarked Nunez Rocks, about 3.2 miles southwest from Cape Chacon, should be kept in mind. The light on Barren Island is also a good guide when going to the east part of Dixon Entrance; it is advisable to set a course southeast of the island in passing.

(21) The high rugged coastline and the isolated islands are very good radar targets.

(22)

Graham Island to Cape Muzon

(23) **Graham Island** forms the south side of Dixon Entrance for 50 miles from Langara Island to Hecate Strait. Its northwest end is mountainous with **Pivot Mountain**, 1,922 feet high, the most conspicuous. This mountain, about 2.5 miles back from the west shore, is round, somewhat detached from the others, and can be seen for about 50 miles in clear weather. **Tow Hill**, 500 feet high, is a conspicuous landmark on the northeast end of the island, rising above the low and featureless land in its vicinity. It is on the coast and is fronted by a perpendicular cliff nearly 400 feet high, composed of columnar volcanic rocks facing the sea and sloping gradually to the south.

(24) **Langara Island**, on the south side of the west end of Dixon Entrance, is a small, irregularly shaped, densely wooded island, close off **Cape Knox**, the northwesternmost point of Graham Island. Near the middle of the island is a succession of rounded hills of almost uniform height that extend in an east direction.

(25) **Langara Point Light** (54°15'24"N., 133°03'30"W.), 160 feet above the water, is shown from an octagonal tower on the northwest end of Langara Island. A white dwelling is about 135 yards east of the light.

(26) **Forrester Island**, about 14.5 miles off the Dall Island shore, is a prominent landmark for the approach to Dixon Entrance from northwest. The island is wooded and mountainous; the highest peak is near the center of the island.

(27) **Cape Muzon**, the south extremity of Dall Island, forms the northwest headland of Dixon Entrance. It is heavily wooded and rises to a rounded peak 2 miles northwest of the extremity of the cape. Off the east end of the cape is a group of small islands and rocks. A breaker is 0.3 mile off the south shore of the cape. Vessels should give the cape a berth of at least 1 mile. A bank with a reported least depth of 14 fathoms is 2 miles southwest of Cape Muzon Light.

(28) **Cape Muzon Light** (54°39'54"N., 132°41'34"W.), 80 feet above the water, is shown from a spindle with a red and white diamond-shaped daymark on the south extremity of the cape.

(29)

Local magnetic disturbance

(30) Differences of as much as 4° from normal variation have been observed at Cape Muzon.

(31)

Point Marsh to Nunez Rocks

(32) **Point Marsh** (54°43.2'N., 132°19.1'W.), about 13 miles east of Cape Muzon, is a group of rocky islets, all of which are comparatively low and wooded, lying close to the main shore of Prince of Wales Island. Between 1 and 2 miles back of the point, the ground rises evenly and several irregular knobs show along the slope. About 2.5 miles northeast of the point is a prominent, almost bare hill, with rounded top. **Point Marsh Light** (54°42'42"N., 132°17'43"W.), 74 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on a small islet about 1 mile southeast of Point Marsh.

(33) **Minnie Bay**, a small bight in the main shore back of Point Marsh, is much used by local fishermen and affords excellent anchorage for small craft. Enter the bay west of the small charted islets inside the entrance and run fairly close-to in order to avoid a reef extending 30 feet out from the west shore opposite the southernmost islet. Heavy kelp covers much of the shoreline during the summer, but the center of the bay is clear.

(34) **Brownson Bay**, about 1.5 miles northeast of Point Marsh Light, is narrow, and its entrance is somewhat obstructed by islets and rocks. It affords indifferent anchorage in about 11 fathoms, 0.2 mile south of the rock awash near the head of the bay. A private mooring buoy is 200 yards east of the rock awash. In entering, favor the west side of the bay, taking care to avoid a rock awash that is about 0.6 mile northeast of the islets off the west point at the entrance.

(35) In 1968, it was reported that the depths in Brownson Bay were considerably less than the charted depths; caution is advised.

(36) **Little Brownson Bay**, on the east side of the entrance to Brownson Bay, affords anchorage for small craft. The bay is entered from the south, but local knowledge is required; the north passage can only be used by very small boats. Williwaws sweep across the bay during southeast gales.

(37) **Surf Point**, about 4.6 miles east-southeast of Point Marsh Light and 2.5 miles west of Nunez Point, rises rapidly to a knob and then to higher ground to the north.

Brown Bear Rock is a prominent rock close to the point. A submerged rock, cleared to 6 fathoms, is about 0.4 mile south of the point, with deep water inshore. Tide rips, hazardous to small craft, are in the vicinity.

(38) An inlet, about 1.2 miles east from Surf Point, is too deep for anchorage and is open and exposed. Foul ground extends about 0.2 mile off the point on the east side of the inlet.

(39) **Bert Millar Cutoff** is the passage to Nichols Bay west of Bean Island. It forms a bight at each end, narrowing at the center to a channel about 30 yards long and 10 yards wide. A depth of about 1¾ fathoms is in the narrow part of the channel, and submerged rocks are in the bight at the north end. At times the current through the channel is very swift.

(40) **Bean Island** is wooded and has a number of rounded, steep-sided, rocky knobs. From west it shows as a rounded hill that stands well above the general level of the island. Off the southeast point of the island is a small wooded island from which submerged rocks extend.

(41) **Nunez Point**, about 2.7 miles west of Cape Chacon, is the southeast extremity of Bean Island. It has several rocky ridges, with bare bluffs 150 to 200 feet high on the seaward face.

(42) **Nichols Bay** is about 2.5 miles west of Cape Chacon. Three islands divide the entrance into two channels. From the southeast end of the south island, irregular bottom with 2- and 2½-fathom spots extend across the entrance of the south channel to a 4¾-fathom spot about 0.6 mile to the northeast of Nunez Point. During severe south gales seas pile up heavily at the entrance and are reported to break entirely across it at times. A daybeacon is on the east side of the entrance of the north channel.

(43) The bay has three anchorages, one in each of the three bights on the southwest shore. In entering the first bight keep well off the northwest end of the north island to avoid rocks. Anchor in 16 fathoms, mud bottom, 250 yards offshore. The second anchorage is to the northwest of the peninsula, in depths of 15 fathoms, 300 yards offshore. The third anchorage is about 0.7 mile to the northwest of the second anchorage and about 0.6 mile from the head of the bay, in depths of about 13 fathoms, soft mud bottom, 350 yards offshore.

(44) **Nichols Lake**, a large freshwater lake, empties into the head of the bay through a stream. Small boats anchor off the flats at the mouth of this stream.

(45)

Routes

(46) When about 1 mile from the entrance, bring the bay wide open and head for the center of the north channel. Stand in between the kelp patches. Favor the north point at the entrance, and then follow midchannel courses. The narrowest part of the channel, about 75 yards wide, is 1 mile inside the entrance, where the least depth is 7 fathoms.

(47) The south channel, used by small craft, leads to the south of the islands. Fishing craft anchor in the lee of the 20-foot rock about 270 yards off the northeast shore of Bean Island and in the channel between the islands.

(48) **Cape Chacon**, the southeast point of Prince of Wales Island, is about 23 miles east of Cape Muzon. **Cape Chacon Light** (54°41'26"N., 132°01'01"W.), 50 feet above the water, is shown from a frame with a red and white diamond-shaped daymark on the south extremity of the cape.

(49) From the northeast and southwest quadrants, the cape is easily recognized by three hills; the outer appears as a perfect cone; the second is slightly higher and somewhat rounded; the third has a flat top. The land to the northwest is high and broken.

(50) A rock, awash at extreme low water and usually showing as a breaker, is 260 yards southeast from the cape. The pass between the rock and the cape has depths of 5 fathoms and is used by small craft. For a distance of about 0.5 mile from the cape, tide rips are likely to be severe for small craft.

(51) **Nunez Rocks**, about 1.4 miles south of Nunez Point, are bare at half tide and usually show as a breaker. Shoal water extends 550 yards southeast to a ¾-fathom spot that frequently shows as a separate breaker. A ¾-fathom spot is about 400 yards northeast of the rocks. The channel between Nunez Rocks and Nunez Point is clear. The rocks when passed to the south should be given a berth of 0.8 mile.

(52)

Duke Island to Zayas Island Reef

(53) **Duke Island**, on the north side of Dixon Entrance between Clarence Strait and Revillagigedo Channel, is low and heavily wooded and shows numerous round-topped hills. **Mount Lazaro** at its south end is a broad-topped mountain and the only part of the island visible for over 25 miles. The south and southwest sides of the island should be avoided, as rocks and reefs extend about 7 miles offshore. Dangers are marked by kelp during the summer, but it is probable that this safeguard is lacking during the fall and winter. The farthest outlying dangers are Hassler Reef, West Rock, Club Rocks, Yellow Rocks, Barren Island and a rocky shoal, covered 5 fathoms, about 4 miles west of West Rock.

(54) **Judd Harbor**, on the south shore of Duke Island, is north of the east end of **Kelp Island**. It offers excellent shelter with swinging room for vessels up to 175 feet long (short scope). When entering the harbor do not rely on the compass, because there is local magnetic attraction.

(55) The best entrance is north of East Island. When abreast of the northeast point of Kelp Island, steer midchannel toward the prominent point marking the west side of the entrance to Judd Harbor. When about to round into the bay give the point to the east a fair berth because of a submerged rock 130 yards off that point. Anchor in the center of the bay in 4 fathoms, sticky mud bottom. This anchorage is used extensively by fishing

vessels during the fishing season and may be congested during that period.

(56) Anchorage on the north side of Kelp Island, while good, is not recommended for use except for those with local knowledge, because the east entrance is shallow and the west entrance has numerous reefs. Currents through this passage are very strong at times.

(57) **Kelp Island Anchorage**, a bight in the east end of Kelp Island, offers fair shelter for small boats. Anchorage is in 2 to 7 fathoms, rock and sand bottom. Piles have been driven along the south shore.

(58)

Local magnetic disturbance

(59) Extreme magnetic disturbances with differences of as much as 50° have been observed southeast of Duke Island. The magnetic compass should not be relied upon within the area outlined in magenta on the charts.

(60) **East Island**, marked by a light on its east side, is a small island, 2.5 miles south of **Duke Point**, the easternmost point of Duke Island. Round East Island with great care because of the outlying rocks to the west, the magnetic disturbance and the uncertainty of the tidal currents.

(61) **Hassler Reef** is an extensive shoal area, interrupted by rocks and breakers in several places, about 7.8 miles west of Mount Lazaro. The reef is covered by heavy kelp during the summer and has deep water close-to. Hassler Reef is exceedingly foul, and every effort should be made to avoid its extents. Very irregular bottom extends 3 miles to the south of Hassler Reef, and passage over that section is not recommended.

(62) A rocky shoal, covered 5 fathoms, is about 2.5 miles south-southwest of Hassler Reef and about 4 miles west of West Rock.

(63) **West Rock**, 12 feet high, is 6.3 miles southwest of Mount Lazaro. A rock with 2 fathoms over it and marked by kelp is about 0.6 mile south of West Rock.

(64) **Club Rocks**, two in number, bare and surrounded by reefs and kelp, are about 4.4 miles south of Mount Lazaro; the north rock is 40 feet high, and the south rock is 35 feet high.

(65) **Yellow Rocks**, two in number, yellowish in color and surrounded by kelp, are about 7.3 miles southeast of Mount Lazaro. The larger rock is 25 feet high and shows some vegetation.

(66)

Caution

(67) Vessels without local knowledge should not go near the line of Hassler Reef, West Rock and Club Rocks. These waters should be navigated with great caution, and every appearance of kelp should be avoided. Isolated rock pinnacles exist that may show no kelp. There is deep water close to Yellow Rock and Barren Island.

(68) **Barren Island** is a bare rock 30 feet high, about 8.5 miles south of Mount Lazaro. There are other small rocks and some kelp near it, but there is deep water within about 0.2 mile in all directions. **Barren Island Light** (54°44'38"N., 131°21'03"W.), 85 feet above the water, is shown from a spindle with a red and white diamond-shaped daymark on the summit of the island.

(69) **West Devil Rock** is a dangerous ledge in the northeast part of Dixon Entrance, about 15.5 miles south-southwest of Mount Lazaro. The highest part of the rock bares 11 feet, and foul ground, on which the sea breaks, extends about 0.3 mile south, southwest and north of it. A 2½-fathom shoal, on which the sea breaks almost continuously in moderate weather, is 0.6 mile 333° from the rock. A submerged rock is close southeast of the 2½-fathom shoal. A 6½-fathom and a 6-fathom shoal are 0.9 mile 015°, and 2.3 miles 141° from West Devil Rock, respectively.

(70) **East Devil Rock** bares 2 feet and is about 3.3 miles north of Zayas Island. The channel between this rock and **Zayas Island Reef** is apparently clear, but the north coast of Zayas Island should not be approached closer than 1 mile.

(71)

Celestial Reef to Holliday Island

(72) **Celestial Reef** (54°31'N., 131°28'W.), about 10 miles south-southeast of West Devil Rock, is about 1 mile long and has three heads with less than 1 fathom over them near the south end. The depth over the remainder of the shoal is about 10 fathoms. A rock, covered 1½ fathoms, is 0.7 mile northeast of the reef. Two 10-fathom shoals are about 0.5 mile north and 3 miles north-northwest of the reef, respectively. An 8-fathom shoal is about 2 miles south of the center of the reef.

(73) **Zayas Island**, in the northeast part of Dixon Entrance and about 11.5 miles southeast of Barren Island, is wooded, flat-topped and high near the south end. A rock, with 4 feet over it, is about 0.7 mile north of **Aranzazu Point**, the northwest extremity of Zayas Island. Foul ground marked by kelp extends along the north shore of the island with several 5-fathom spots about 1 mile north of the island. A light marks the southernmost point of the island.

(74) **McCullock Rock**, a pinnacle rock with 9 feet over it, is about 4 miles west of Jacinto Point, the southwest extremity of Zayas Island. A 3-fathom shoal and a 5-fathom shoal are about 0.4 mile east-southeast and about 1.3 miles north-northeast of the rock, respectively.

(75) **Dundas Islands**, in the east part of Dixon Entrance, consist of **Dundas Island**, **Baron Island**, **Dunira Island**, **Melville Island**, and numerous small islets and rocks. Dundas, the northwesternmost and largest island, has a number of conspicuous mountains, of which **Mount Henry**, towards the south end of the island, is the highest. Two conspicuous hills are in the northwest part of the island. **Slab Hill**, flat-topped with a knob, is conspicuous near the northeast end of the island.

(76) The coasts of the four large islands of the group are much indented by small creeks and bays.

(77)

Caution

(78) Recent surveys indicate less water than charted in the vicinity of Dundas Islands. Mariners are advised to navigate with caution in the vicinity of these islands as many rocks awash and submerged, and some marked by kelp, have been reported in this area.

(79) **Holliday Island Light** (54°37'24"N., 130°45'30"W.), 21 feet above the water, is shown from a white slatted daymark on a concrete base on the north end of **Holliday Island**, which is 0.3 mile off the northeast end of Dundas Island.

(80)

Cape Fox to Winter Inlet

(81) **Cape Fox**, on the north side of Dixon Entrance, forms the west side of Nakat Bay and the east point of the entrance to Revillagigedo Channel. The cape is mountainous and wooded, with wooded islets close off its south shore. The cape terminates in remarkable high white cliffs, with a conspicuous saddle-shaped mountain, **Harry Saddle**, about 2 miles back. A small-boat channel between Fox Island and the cape is narrow and crooked and should not be attempted without local knowledge. The channel has many piles and is used as a log storage area. A rock awash is about 500 yards east-northeast from the east tip of **Fox Island**, a small island about 0.2 mile off Cape Fox.

(82) Tree Point Light, described later in this chapter, is on the northeast side of the lower end of Revillagigedo Channel, about 3.7 miles northwest of Cape Fox.

(83) **Lord Islands**, about 2.5 miles southeast from Cape Fox, are in two groups, separated about 0.7 mile, and have a number of islands in each group, with a clear channel between the groups. The larger islands are wooded and 100 to 200 feet high. Several bold and bare rocks are close to the Lord Islands. Submerged rocks and kelp fringe these islands, and shoal water extends about 0.5 mile north and northwest of the north group. The recommended channel into Nakat Bay is to the west of the islands and **Thistle Rock**, favoring the Cape Fox shore.

(84) **Lord Rock**, about 10 feet high, is about 0.7 mile southwest from the south group of the Lord Islands. **Lord Rock Light** (54°43'33"N., 130°49'13"W.), 38 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the highest part of the rock.

(85) **Nakat Bay**, making north between Cape Fox and Tongass Island, is the entrance to Nakat Inlet and the west approach to Port Tongass. The bay does not afford anchorage.

(86) **Boat Rock**, 5 feet high, is close to the west shore at the entrance to Nakat Bay. **Boat Rock Light** (54°46'49"N., 130°47'58"W.), 38 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest end of the rock.

(87) **Craig Rock**, near the middle of the bay and about 0.7 mile from the west point of Tongass Island, is awash at extreme low water, with deep water all around. It breaks in a heavy sea and is not marked by kelp.

(88) **Harry Bay**, on the northwest side of Nakat Bay, is deep and exposed to the southeast. **Slim Island** is close to the west shore at the entrance. A boat passage is between the island and the mainland, but the island shore must be kept close aboard, because the west half of the passage is foul. A shoal with 6¾ fathoms over it is 0.4 mile 116° from the south end of Slim Island. **Ledge Point** on the east side of the entrance to the bay should be passed at a distance of 0.5 mile to clear the rocks off the point.

(89) **Nakat Inlet** extends in a north direction for about 8 miles. The shores are steep and heavily wooded to the water's edge. The main inlet is deep and affords no anchorage except near its head. The group of small, wooded islands near the head of the inlet provides shelter for small craft. Anchorage may be had in 8 to 13 fathoms. The inlet is clear of obstructions except near its head or close inshore.

(90)

Local magnetic disturbance

(91) Differences of as much as 5° from the normal variation have been observed in the west shore of Nakat Inlet about 1.25 miles north of Surprise Point.

(92) **Nakat Harbor** makes off from the southeast part of Nakat Inlet and is separated from it by a chain of wooded islands. An abandoned cannery dock, in ruins, is on the east shore of the harbor east of Observation Rock. In the south part of the harbor, about halfway up the arm, off a small bight having a gravel beach, anchorage and shelter for vessels of moderate size may be found in 19 fathoms. The north arm of Nakat Harbor also has anchorage but poor shelter. A reef with two pinnacles that bare 3 feet is 200 yards from the west shore about 0.3 mile north from **Simonton Point**. **Observation Rock**, in the middle of Nakat Harbor, is about 6 feet high, with submerged rocks that extend about 250 yards southeast and northwest from it. A deep channel is between the rocks and the shore, but the shore must be given a berth of over 100 yards.

(93) The best channel for entering Nakat Harbor is southeast of the southeasternmost islet of the chain separating it from Nakat Inlet.

(94) Excellent anchorage may be had in 18 fathoms, mud bottom, in the southwest arm of Nakat Harbor, about 0.6 mile southeast of **Surprise Point**. Passage to the head of this arm is obstructed by a rock baring 3 feet in the middle of the constricted part of the arm. Small vessels should favor the west shore to avoid the rock and the extensive flats along the east shore. At high water the southwest arm is connected with the small bight, about 0.7 mile north of the daybeacon on Tongass Reef, by a narrow passage that is obstructed by trees and is only navigable by small boats.

(95) **Tongass Reef**, on the northeast side of the bay, about 0.5 mile north of Tongass Island, is awash at high water.

Tongass Reef Daybeacon (54°47'13"N., 130°44'40"W.) on a skeleton tower with a red and white diamond-shaped daymark on the north side of the reef, marks the north entrance to Port Tongass. **Passage Rock** and **Track Rock**, between Tongass Reef and the north point of Tongass Island, cover at high water.

(96) **Port Tongass** is a small harbor formed by the passage between Tongass Island and the mainland. **Tongass Island** is low and, except on the northeast side, has ledges and submerged rocks that extend well out on all sides. A launch passage is immediately north of Tongass Island but is tortuous and obstructed and should be used only with local knowledge. Port Tongass is sometimes used as an anchorage, but the bottom is hard, and with wind and changing tidal currents a vessel may drag her anchor and foul.

(97) The anchorage is 200 yards from the northeast shore of the harbor, east of **Fort Point** in about 20 fathoms, hard bottom. The flood current sets northwest through the anchorage at about 1 knot. The anchorage may be entered by three channels. The southeast and southwest entrances are described under Sitklan Passage.

(98) The north entrance between Tongass Reef and the mainland is the one recommended and is the best entrance for vessels approaching from west.

(99) **Sitklan Passage**, except for its west entrance between Tongass and Kanagunut Islands, is a deep narrow passage with steep wooded shores that extend east-northeast between the mainland and the northwest shores of Kanagunut Island and **Sitklan Island** from Nakat Bay to Tongass Passage. It forms the southeast and southwest approaches to Port Tongass. The east entrance of the passage from Tongass Passage is north of **Point Mansfield**. This channel, with depths of 16 to 42 fathoms, is fairly straight and about 300 yards wide. **Dark Point**, the turning point from Sitklan Passage into Port Tongass, has a bare rock about 5 feet high close-to.

(100) The west entrance, on the south side of Tongass Island, is obstructed by rocks and kelp but is much used by small vessels with local knowledge. Strangers should use this entrance only with small craft at high water. All dangers in the passage are marked by kelp. A circular shoal with a least depth of 2¼ fathoms is about 0.6 mile northwest of **Tingberg Island** in the west entrance. When rounding **Katakwa Point**, the southeast extremity of Tongass Island, care should be exercised to favor the east shore of Port Tongass, which is steep-to and clear of dangers.

(101) **Lincoln Channel** is the narrow passage between Kanagunut and Sitklan Islands. It is very narrow at the north entrance with a controlling depth of 9 feet midchannel. In the south part of the channel, about 0.2 mile north of the island in the bight, is a rock midchannel with ¾ fathom over it. A shoal with a depth of 1 fathom is about 0.5 mile north from **Garnet Point**, the south extremity of Kanagunut Island.

(102) **Kanagunut Island**, low and heavily wooded, is fringed along its southwest shore by rocky ledges that extend 200 to 700 yards from the island.

(103) **Tongass Passage**, between Sitklan and Wales Islands, is a deep passage with steep shores that extends northwest from Dixon Entrance. It bends to the northeast off the entrance to Sitklan Passage, separates Wales Island from the mainland and forms the west entrance to Pearse Canal. Tongass Passage is entered between **Haystack Island**, a steep wooded islet, and **Island Point**, the southeast extremity of Sitklan Island. Rocks awash are about 300 yards west of Haystack Island. From **Bartlett Point**, the west extremity of Wales Island, to **Phipp Point**, on the north shore of Wales Island about 1 mile northeast of Bartlett Point, a midchannel course will lead through deep water.

(104) **Fillmore Inlet** joins Pearse Canal on the Alaska side at the southwest end of Fillmore Island and separates that island from the mainland; it extends northeast and is comparatively free to navigation, but there are numerous rocks and reefs close inshore. The narrow entrance beyond the group of islets at the head of this inlet leads into two consecutive basins, each of considerable size. The inlet has no value as an anchorage.

(105) **Willard Inlet** is a narrow inlet that extends in a northwest direction from the northwest side of Fillmore Inlet, about 1.5 miles north of **Male Point**, the southwest extremity of Fillmore Island. It is very narrow at the entrance, and the currents have great velocity, forming swirls that extend well out from the mouth. The times of high and low water inside the inlet are about 1 hour later than at other places in the vicinity, and the rise and fall about 2 feet less. This inlet can only be entered at slack water and has no value as an anchorage.

(106) **Edward Passage** separates Fillmore Island from the mainland north and connects Fillmore Inlet with Pearse Canal. The passage is narrow, foul, and only navigable by small craft with local knowledge.

(107) **Pearse Canal** is about 25 miles long from Tongass Passage to its junction with Portland Canal off Tree Point, the north extremity of Pearse Island. The British Columbia shore is formed by **Wales Island** and **Pearse Island**, and the Alaska shore by Fillmore Island and the mainland.

(108) The west entrance to Pearse Canal is to the south of a group of heavily wooded islets about 0.8 mile southwest of Male Point. **Pearse Canal Island Light** (54°47'02"N., 130°36'36"W.), 12 feet above the water, is shown from a square skeleton tower with a white square daymark on the south point of the 150-foot island in the entrance to Pearse Canal. A rock with 1¾ fathoms over it is 0.1 mile north of the light. To enter from the west, pass in midchannel between this rock and the southernmost of the islets south of Male Point. A rocky shoal, covered 3½ fathoms, is about 250 yards east-southeast of the light.

(109) 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, including Pearse Canal. Links to a user guide for this service can be found in chapter 1 of this book.

(110) **Safa Islands**, mostly wooded, are on the south side of the channel off the entrance to Wales Harbor.

(111) **Fillmore Island** forms the northwest shore of Pearse Canal and is separated from the mainland by Fillmore Inlet and Edward Passage. Several wooded islets are off its south shore. Passage behind the islets is not recommended except for small craft with local knowledge.

(112) **Regina Cove** indents the south shore of Fillmore Island about 2 miles from Male Point. Anchorage is available in the center of the bay in 14 fathoms, mud bottom. A small shoal of 1¾ fathoms, with deep water surrounding it, is near midchannel about 0.2 mile off the entrance to the cove.

(113) **Wales Harbour**, on the British Columbia side of Pearse Canal, about 1.5 miles from Tongass Passage, affords good anchorage in 14 to 18 fathoms, soft bottom; its entrance is somewhat obstructed by islets and rocks, and only vessels with local knowledge should attempt to enter it. The usual anchorage is north of the larger island near the head of the harbor. In entering, follow the southwest shore at a distance of about 200 yards until past the shoal in the entrance to the harbor.

(114) Three arms are at the head of the harbor; the middle and largest open out into a basin. An island with an islet close southeast of it nearly closes the entrances to the west and middle arms; the channel for entering them is west of the islands, but the chart is the best guide for navigating these waters.

(115) **Wales Passage**, between Pearse Island and Wales Island on the British Columbia side of Pearse Canal, is free from midchannel dangers.

(116) **Winter Inlet**, the entrance to which is about 1.3 miles northeast of the north entrance to Wales Passage, indents the northwest shore of Pearse Island. It affords secure anchorage for small craft; the holding ground is good and there is ample swinging room in the wider part. The north shore is bold, except where small sandspits make out at the mouths of streams. In entering, favor slightly the south shore until past the first spit on the north side, and then keep the north shore close aboard when passing the bight on the south side to avoid a reef that extends about 75 yards off a small wooded islet. Ice forms in the harbor during winter, making it unsafe for small-craft shelter.

(117)

Hidden Inlet

(118) **Hidden Inlet**, a narrow arm, extends north into the mainland from Pearse Canal, about 8 miles south of its junction with Portland Canal. **Hidden Point** is on the northeast side of the entrance to the inlet. The entrance is less than 150 yards wide, and the tidal currents through it set with a velocity of 8 to 10 knots, forming swirls that extend well into Pearse Canal. The main body of the inlet is about 4 miles long, varying in depth from 30 to 73 fathoms, but there is only 2½ fathoms at the entrance. It can be entered only at slack water and is of no value as an anchorage.

(119) A rock with 2 fathoms over it is about 0.4 mile south of Hidden Point. **Yelnu Islets** are two wooded prominent islets on the west side of the Pearse Canal about 0.8 mile south of Hidden Point.

(120)

Portland Canal to Car Point

(121) **Portland Canal** extends north from its junction with Pearse Canal and **Portland Inlet** at **Tree Point** for about 57 miles to the towns of Hyder, AK, and Stewart, BC. The channel, clear and deep, has no dangers except for a rock awash, about 0.2 mile off the west (Alaska) shore, 2.3 miles above **River Point** (55°34.2'N., 130°08.2'W.). It is reported that in the winter there are strong north blows in the canal and small boats often ice up.

(122) **Reef Island** is close off the west shore, abreast **Spit Point**, at the entrance to Portland Canal. **Reef Island Light** (55°04'44"N., 130°12'11"W.) 19 feet above the water, is shown from a spindle with a red and white diamond-shaped daymark on the south end of the island.

(123) **Harrison Point**, high and bold, is 2.5 miles north of Reef Island. **Dickens Point**, on the east shore, is about 4.5 miles north of Spit Point. A black rock, 8 feet high, is close south of Dickens Point, and a drying ledge extends a short distance from it.

(124) **Sandfly Bay**, on the west shore abreast Dickens Point, 14.5 miles above Hidden Inlet, has no value as an anchorage. **Stopford Point**, bold and conspicuous, is on the east shore about 3 miles above Dickens Point.

(125) **Halibut Bay**, free of hidden dangers, is on the west shore of Portland Canal, about 4 miles above Sandfly Bay. Its shores are generally bold, but on each side near the entrance are sandy beaches with shoals that extend 80 yards offshore and low grassy land running 100 yards back. Near the head of the bay extensive flats, which bare, make out from the west shore almost all the way across leaving a narrow channel close to the east side, through which 5 feet can be carried to a narrow basin 2 to 4 fathoms deep and suitable only for small craft.

(126) Halibut Bay affords anchorage for vessels in the middle of the bay in 10 fathoms, about 0.2 mile above **Astronomical Point**, the northeast point at the entrance, and abreast a rocky point at the north end of the sand beach on the west side, where the anchorage is 450 yards wide; also 700 yards farther up abreast the north end of the sand beach on the east side, in 10 fathoms, where the anchorage is 300 yards wide.

(127) **Logan Point**, on the east shore, is 4.3 miles northeast of Stopford Point.

(128) **Camp Point** on the west shore about 4.5 miles northeast of the entrance to Halibut Bay is wooded and precipitous.

(129) **Hattie Island**, in midchannel about 6 miles above Halibut Bay, is about 700 yards long and has some stunted brush growing on it. **Hattie Island Light** (55°17'15"N., 129°58'12"W.), 21 feet above the water, is shown from a pole with a slatted orange circular daymark on the west side of the island. **Belle Bay**, the bight east of Hattie Island, does not afford anchorage.

(130) **Car Point** is on the east shore about 3.5 miles northwest of Belle Bay. About midway between Car Point and Belle Bay are three conspicuous landslides.

(131)

Breezy Point to Stewart

(132) **Breezy Point** (55°21.5'N., 130°02.3'W.), about 5 miles north of Camp Point on the west shore, is conspicuous. **Bluff Point**, on the east shore, about 1.5 miles northeast of Breezy Point, terminates in a high, bold cliff.

(133) **Tombstone Bay**, on the west side of Portland Canal about 7.5 miles above Hattie Island, affords a temporary anchorage for small craft in 8 fathoms near the head of the north bight.

(134) **Maple Bay**, on the east (British Columbia) side of Portland Canal, 8 miles above Hattie Island, affords fair anchorage for small craft, 300 yards from the south side, in 7 to 8 fathoms. In 1977, a rock awash was reported about 150 yards offshore on the south side of the bay near the entrance.

(135) **Turn Point**, on the west side of Portland Canal, about 9.5 miles above Hattie Island, is 0.5 mile wide.

(136) **Green Islets**, two small wooded islets on the east side, about 21.5 miles above Hattie Island, are connected with the shore by a short spit that bares.

(137) **Fords Cove**, on the east shore just north of Green Islets, is a bight in the shore affording fair shelter from south winds but none from north winds. A rocky ledge, which partly bares, extends north about 75 yards from Green Islets. The south part of the cove is shoal for about 175 yards offshore. A fair anchorage with sufficient swinging room may be found in 13 fathoms, 0.2 mile from Green Islets and the same distance from the east shore. Small craft can anchor closer inshore.

(138) **Cliff Point**, on the west shore, is about 3.3 miles above Green Islets. **Verdure Point**, about 4.5 miles north of Cliff Point, is conspicuous when the maple trees bloom.

(139) **Lion Point**, on the east shore about 3 miles below the head of the canal, is low and wooded and has a grassy flat in front. The bight in the shore just south of Lion Point is filled by a flat that bares. The **Marmot River** flows through a valley that trends to the east.

(140) There is a government landing float at **Marmot Bay**, 0.5 mile northeastward of Lion Point, with a depth of 18 feet alongside at the southern end and 9 feet at the northern end.

(141) The Bear and Salmon Rivers, which flow into the head of Portland Canal, are separated by the **Reverdy Mountains**, a high ridge of bare mountains, of which **Mount Dolly**, the southernmost peak, 5,475 feet high, is conspicuous to the mariner. Throughout the year, the discoloration of the water caused by the discharge from the Bear and Salmon Rivers extends as far south as **Glacier Point** (55°49.2'N., 130°06.7'W.).

(142) **Salmon River** empties on the west shore about 2 miles below Bear River. Extensive flats make out in a fan shape from the mouth of Salmon River, the north part extends about halfway across the canal; these flats are covered at high water and are steep-to. The east edge of the flats is marked by buoys and a light. **Stewart Light** (55°54'38"N., 129°59'29"W.), 12 feet above the water, is shown from a square skeleton tower on the east side of the canal opposite **Eagle Point**, the north entrance point of Salmon River. It is reported that in the winter the mouth of the Salmon River freezes with 3 to 8 inches of ice.

(143) **Bear River** flows through an extensive wooded flat at the head of Portland Canal. The channels are subject to change during freshets. The flats at the mouth uncover for 800 yards and are steep-to; it is reported that they are slowly extending.

(144) **Hyder**, on the Alaska side of the boundary, is a community occupying the flats off the mouth of the Salmon River and extends up the valley. A 1,252-foot-long trestle with a small dock at its outer end extends southeast over the mudflats from Eagle Point, which separates Portland Canal and the entrance to Salmon River. A 150-foot-long small-craft float with a seaplane float at its outer end extends southwest from the dock; the community operates the floats. A small-boat harbor with a seaplane float and a launching ramp is just northeast of the trestle. A buoy marks the entrance to the harbor. In 1976, depths of 14 to 20 feet were reported along the northwest and southeast sides of the 150-foot small-craft float. A yacht club on the west side of the canal between Hyder and Stewart has several floats and finger piers.

(145) Limited marine supplies, gasoline, diesel fuel, aviation gasoline, water, provisions and minor small-craft repairs can be obtained in Stewart.

(146) Hyder, and Stewart, BC, about 2 miles to the north, are connected by a shore road that leads about 370 miles farther north to a junction with the Yukon Province Highway 1 (ALCAN Highway). Seaplane service to Ketchikan is available, as well as telephone and radiotelephone communications with other cities in Alaska and British Columbia.

(147) **Stewart** is a settlement on the British Columbia side at the head of Portland Canal. Mining is the principal industry.

(148) Anchorage may be had in 25 to 30 fathoms near the head of the canal, about 550 yards off the east shore and about 450 yards south of the flat fronting the mouth of Bear River, with the light marking the edge of the flat east of Eagle Point, bearing 229°. The holding ground is good, soft mud, but the anchorage is unprotected, being exposed to north and south winds that draw through the

canal. Vessels should use caution in this area because the flat uncovers only at low water and is very steep-to.

(149) Numerous piles, the remains of the approaches to two former wharves, are on the mudflats at the head of the canal.

(150) The waters of Portland Canal in the vicinity of Stewart are a **seaplane operating area**.

(151)

Currents

(152) In Pearse Canal the current has a maximum velocity of 2.8 knots, diminishing toward the head of Portland Canal.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, including the Pearse and Portland Canals. Links to a user guide for this service can be found in chapter 1 of this book.

(153) Stewart has a small hospital with a resident doctor and nurse in attendance; X-ray facilities are available.

(154)

Supplies

(155) Provisions in limited quantities can be obtained. Gasoline, diesel fuel, stove oil and aviation gasoline can be procured by tank truck by prior arrangement with two local oil companies; water is also available.

(156)

Communications

(157) Radiotelephone and telephone services are available. A vessel makes regular calls, and an airline and ferries maintain regular service to and from Prince Rupert, with connections to other coastal points.

(158)

Revillagigedo Channel and Tongass Narrows

(159) **Revillagigedo Channel** and **Tongass Narrows** are connecting bodies of water that have a combined length of about 53 miles from their junction with Dixon Entrance at Tree Point Light to their junction with Clarence Strait at Guard Islands Light. On their south side they connect with Clarence Strait through Felice Strait and Nichols Passage. **Revillagigedo Island**, separated from the mainland by Behm Canal, forms the greater part of the north shore of the passages.

(160) Revillagigedo Channel extends in a general northwest direction from Dixon Entrance for about 40 miles to Tongass Narrows, the latter being a continuation of the channel, for 13 miles to Guard Islands. The dangers are shown on the charts. From its entrance to Bold Island, Revillagigedo Channel is broad and comparatively free of dangers; the rocks nearest the tracks of vessels show out of water and are readily distinguishable. Above Bold Island, the channel is narrow in places, but the principal dangers are marked by buoys and lights. No difficulty should be experienced in passing through in clear weather.

(161)

Tides and currents

(162) East of Duke Island the average velocity of the tidal current at strength of flood or ebb is about 0.5 knot. A set across the channel is sometimes experienced in the vicinity of Twin Islands. Observations taken in midchannel between Bold Island and Reef Point indicate that the current at that location sets northwest most of the time with a velocity up to 1 knot. The current in the channel is usually too weak to be predicted.

(163) The tidal current in Tongass Narrows is weak; however, currents of 2.5 and 3.0 knots have been reported in the vicinity of Idaho Rock. There is evidence of a weak northwest nontidal drift. Currents of an appreciable velocity are due to winds. 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.

(164)

Weather

(165) Because of its orientation, Revillagigedo Channel is susceptible to the strong southeast winds that blow from October through April. At the south entrance to the channel, advection fog is a problem, particularly from July through September. Throughout most of the channel and in Tongass Narrows, visibility is worst during the winter. At Ketchikan visibility drops below 1 mile on up to 8 days each winter month, and 3 to 6 days of fog occur from July through September. The waters around Mary Island are consistently the most foggy. April, May and June are the most fog-free months in the channel.

(166)

Boat Harbor to Vixen Bay

(167) **Boat Harbor**, about 2.7 miles northwest of **Cape Fox** (54°46.2'N., 130°50.0'W.), is a small cove forming a poor shelter for boats. It is badly exposed to southwest. Two small wooded islets are at the entrance, and the best passage for small boats is between these islets. Near the middle of the north entrance is a rock that bares 5 feet.

(168) **Tree Point Light** (54°48'10"N., 130°56'02"W.), 86 feet above the water, is shown from a 66-foot white square tower on a building on Tree Point, 4 miles northwest of Cape Fox.

(169) **Tree Point**, low and timbered, has a rocky and steep-to shore. The shoreline from Cape Fox to Tree Point is very irregular and studded with many wooded islets and bare rocks. Because of the irregular bottom and inshore dangers this section of the coast should be given a berth of not less than 0.5 mile. The small bight at Tree Point affords no shelter from south seas. **Humpy Point** is 1 mile north of Tree Point.

(170) **Foggy Point**, about 7.4 miles north of Tree Point, is a low, rocky, wooded peninsula marked by a light.

(171) The coast from Tree Point to Foggy Point is clear of dangers except close inshore. A rock awash is about 0.6 mile north of Foggy Point. Other kelp-marked rocks are southeast of this rock.

(172)

Local magnetic disturbance

(173) Extreme magnetic disturbances exist southeast of Duke Island. The magnetic compass should not be relied upon within the area outlined in magenta on the charts.

(174) **De Long Islands** are a group of several low, wooded islets 2 to 3 miles north-northwest of Foggy Point. The bottom between them and the mainland is exceedingly foul. Foul ground extends 0.8 mile south-southeast of these islands.

(175) **Kirk Point**, about 4.2 miles north-northwest of Foggy Point, is a low, wooded peninsula. A kelp-marked reef, bare at low water, is about 550 yards west of the point. Heavy tide rips have been experienced during a southwest blow in the vicinity of Kirk Point.

(176) **Foggy Bay** is a wide indentation in the shore between Foggy Point and Kirk Point. It is almost divided into two parts by the De Long Islands and the foul ground that extends inshore from them. The northwest part of the bay is foul and seldom used.

(177) The south part of the bay is used considerably by fishing boats and affords safe anchorage for small craft in its southeast and east ends. Large vessels can obtain temporary shelter from south storms in the southeast part of the bay, but the water is deep and the bottom lumpy. Great caution must be exercised in entering in order to clear the dangers that extend 0.6 mile north from Foggy Point and to give sufficient clearance to the submerged rocks and reefs that extend 0.8 mile southeast from the De Long Islands. As practically all the dangers are covered at high tide, it is recommended that this bay be entered at low tide when the reefs are visible. Water may be obtained from a pipeline at the head of the bight in the southeast corner of the bay.

(178) A small craft mooring is 1.7 miles nearly due south of the entrance to Very Inlet, marked by unconfirmed charted pilings. No irregular bottom or rocks exist along the approach, but the inlet only affords 4 fathoms and shoals rapidly around the pilings to ½ fathom. Use of the inlet without local knowledge is inadvisable.

(179) Potential anchorage for small craft may be had in the southeast head of Foggy Bay to the east of a cluster of small wooded islands, about 1.8 miles south-southeast of the entrance to Very Inlet. Use the northern entrance as the southern opening bares at low tide. The northern entrance is narrow and carries 1½ fathoms at its deepest point, but the inlet offers a protected mooring for small craft with 6 fathoms at its northern end and 2½ fathoms at its southern end. Unconfirmed pilings are charted within the inlet. Use of the inlet without local knowledge is inadvisable.

(180) An unnamed inlet 0.9 mile southeast of the entrance to Very Inlet offers excellent anchorage for small craft behind a large wooded island close to shore. Use the northern entrance as the southern opening bares at low tide. The narrow approach carries 3 fathoms in the center of the channel, but care should be taken as it shoals rapidly on either side. The channel opens into a fair anchorage with room for multiple small craft with a mud bottom at about 5 fathoms.

(181) **Very Inlet**, a narrow arm that extends northeast, has its entrance on the east side of Foggy Bay 2.2 miles north of Foggy Point. About 1.5 miles inside the entrance, a branch extends in a southeast direction. This branch is very narrow for about 1 mile and then expands into a basin that has considerable foul ground and a number of small islets. The ebb current flows over the rapids in the narrowest part of the branch for about 2 hours after low water. The passage has been made by a small vessel drawing 8 feet, but it should only be attempted at high-water slack. In entering, pass east of the ledge just within the opening.

(182) At the head of Very Inlet is a small basin much used by fishing boats. A branch, which can only be entered safely at high-water slack, extends in a southeast direction from the head of Very Inlet. The entrance is very narrow and, in the narrows, bares at low water.

(183) The entrance to Very Inlet is between a reef awash at high water and a low wooded island. It is usually discernible during the ebb by a strong current running out of the inlet. Favor the island shore in entering and keep in midchannel as far as the entrance to the first arm. Then pass midway between a large, wooded, round islet and a small, grass-covered one, west of it. Just before entering the narrows, favor the north shore slightly, then keep in midchannel. Tide rips have been experienced about 0.5 mile southwest from the entrance to Very Inlet.

(184) **House Rock**, a small bare rock, is 0.3 mile 330° from Kirk Point.

(185) **Black Rock Light** (55°01'25"N., 131°03'35"W.), 55 feet above the water, is shown from a cylindrical house, on a pyramidal skeleton tower with a red and white diamond-shaped daymark on the highest part of the rock, which is surrounded by kelp.

(186) **Snail Rock**, grass-topped and 28 feet high, is about 0.6 mile north-northeast of Black Rock.

(187) Between Black and Snail Rocks are numerous rocks, submerged and awash, and the area should be avoided. A kelp patch having a least depth of 1½ fathoms is 0.5 mile 106° from Snail Rock.

(188) **White Reef** is an extensive white, shell-covered reef, mostly covered at high water, about 2 to 3 miles north-northeast of Black Rock in the entrance to Boca de Quadra. A rock, 5 feet high, is near the north end of the reef.

(189) **Kah Shakes Cove**, a bight about 2 miles southeast of the entrance to Boca de Quadra, is a good anchorage for small craft. A submerged rock is 175 yards from the east shore east of the center of the cove. Care must be exercised in entering the bight leading to Kah Shakes Cove, as the bottom is irregular and shoals suddenly to 1

fathom about 210 yards west of the entrance. Numerous islets and rocks are on the southern side of the entrance. Local knowledge is essential for entering and anchoring in the cove. About 12 feet can be carried through the entrance channel between the rocky islets. The cove has excellent holding ground in sticky mud.

(190) **Bullhead (Bull Head) Cove**, about 0.8 mile north of Kah Shakes Cove, affords anchorage with good holding ground in sand and mud. The inner part of the cove is almost all bare. The northern entrance, while fully submerged, is extremely shallow and should not be attempted. The southwestern entrance is fair, being 150 yards across and carrying 10 fathoms. Local knowledge is recommended for use.

(191) Vessels too large to enter either Kah Shakes Cove or Bullhead Cove can find fair protection in the bight between the coves. The outer part of this bight is rough in heavy south weather; vessels should anchor as near the head as their drafts permit. The bottom is sandy.

(192) **Kah Shakes Point** is on the south side of the entrance to Boca de Quadra. Northwest of the point are submerged rocks within 120 yards of the shoreline. Kah Shakes Point is the termination of a low, broad, wooded peninsula that extends northeast for about 1.5 miles, where the ground rises abruptly to the west point of a distinctive ridge running parallel to Boca de Quadra. The ridge has five distinct small peaks when viewed from the south along the coast; from other directions it shows from one to four tops. **South Quadra Mountain** is the highest point on the ridge.

(193) **Ray Anchorage**, a bight in the east side of Duke Island, affords shelter from south winds, but the bottom is hard and the anchorage is open northeast. Anchor about midway between the rocky patch in the entrance to Morse Cove and the point about 0.6 mile east, with the rocks bearing 277° in 10 to 22 fathoms, rocky and hard sandy bottom. Deeper water is nearer the rocks.

(194) **Morse Cove**, entered at the southwest end of Ray Anchorage, is a landlocked harbor with varying depths and mud bottom. The entrance is very narrow and has a rock that bares 10 feet in the narrowest part, on the southeast side of midchannel. The channel on the northwest side of the rock is about 75 feet wide. Small craft with local knowledge can enter, preferably at low water. The entrance channel from Ray Anchorage is on the southeast side of the rocky patch in its entrance. Rocks awash are between the rocky patch and the west shore.

(195) **Reef Harbor** is the indentation between **Duck Islands**, the reefs on the east, and the shore of Duke Island, south of **Grave Point**, the north extremity of the island. It has depths of 24 to 26 fathoms, mud bottom, but the swinging room is scant for the scope of chain required by this depth. Small craft may secure some protection from south weather by anchoring as close as size permits in the lee of **Flag Point**. Very small craft may use the wide part of the passage between the two largest of the Duck Island group, but this anchorage is not secure in south weather.

(196) **Little Rock** and **Whale Rock** are the extremities of a chain of rocks about 1 mile long, 2 miles northeast of Grave Point.

(197) **Cat Island**, **Fripo Island** and **Lane Island**, between Duke Island and Mary Island, are low and densely wooded. The islands are surrounded by ledges that extend from 100 to 200 yards offshore. Small craft sometimes anchor off the middle of the west side of Cat Island, but there is little shelter. **Bird Island**, about 1.5 miles west-northwest of Whale Rock, is about 20 feet high and bare.

(198) **Danger Passage**, between Cat and Mary Islands, is about 350 yards wide between the 3-fathom curves and suitable only for small craft. It is reported that the shoals in the passage are marked by kelp in the summer and fall.

(199) **Mary Island Light** (55°05'57"N., 131°10'57"W.), 76 feet above the water, is shown from a white square tower on a white building on the northeast side of **Mary Island**. The island is comparatively low and densely wooded near the shores.

(200) **Mary Island Anchorage** is a bight in the north end of Mary Island between **Point Winslow** and **Giant Point**. It is a contracted anchorage with fair shelter from southeast and southwest winds, but more room and better protection can be had in Custom House Cove. (See Felice Strait.) Ledges covered with kelp extend about 150 yards north of Point Winslow and Giant Point, and the entire south side of the anchorage is shoal for 150 yards beyond the projection of the shore. The approach is clear. Anchor in 12 to 15 fathoms, hard sandy bottom.

(201) **Twin Islands**, two in number and low and wooded, are 1.8 miles north of Mary Island. The northwest and larger island is marked by a light on its northeast side. Deep water is close-to in all directions, except for a submerged rock that is 250 yards north of the larger island.

(202)

Pilotage, Southeastern Alaska

(203) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, Alaska, indexed as such, chapter 3, for details.)

(204) Vessels requiring a pilot for Alaska inside waters can meet the pilot boat at about 2 miles northeast of Twin Islands Light TI (55°08'35”N., 131°13'02”W.); this is a seasonal pilot station (pickup point), open only during the period of May 1 through September 30.

(205) **Boca de Quadra** has its entrance on the east side of Revillagigedo Channel between Kah Shakes Point and **Quadra Point**, about 6 miles east of Mary Island Light. It extends northeast to the flat that extends 0.8 mile from its head. The sides are steep-to and densely wooded, and there are no outlying dangers.

(206)

Tides and currents

(207) Tidal currents have an estimated maximum velocity of about 1.5 knots at the entrance to Boca de Quadra, diminishing toward the head. 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.

(208) The preferred entrance is between Slate Islands and White Reef, following midchannel courses, passing on either side of Kite Island, but preferably north of it.

(209) **Orca Point** is on the east side of the inlet about 6 miles from the entrance.

(210) **Weasel Cove** indents the north shore about 7 miles from Kah Shakes Point and affords anchorage in 17 to 19 fathoms, mud bottom, about 0.5 mile above the east point at the entrance. The entrance and anchorage are clear, but vessels must keep clear of the flat that extends 700 yards from its head.

(211) **Badger Bay**, separated from Weasel Cove by a promontory, has 14 to 30 fathoms throughout its length, and there is a small flat at its head.

(212) **Kestrel Island**, a small rocky islet close to the east shore, is about 1.5 miles southeast of Orca Point. **Kite Island**, low and wooded, is in the middle of the inlet about 2.5 miles southeast of Orca Point.

(213) **Vixen Bay**, entered southwest of Kite Island, affords anchorage at the head about 2 miles above the entrance. In entering, the main channel is west of **Gannet Island**. **Raven Island** is close to the east shore, 1.3 miles from Gannet Island. Rocks, visible and submerged at various stages of the tide, are south of and near Raven Island.

(214) The anchorage is between the rocks off Raven Island and Gosling Island, which is at the head of the bay. A ledge extends 175 yards northwest from the north end of Gosling Island. Local knowledge is essential in anchoring near the head of the bay.

(215) Anchorage for deep-draft vessels can be found about 0.3 mile south to southwest of Kite Island in 20 to 30 fathoms, hard bottom.

(216)

Mink Bay to Bactrain Point

(217) **Mink Bay** (55°05.5'N., 130°43.4'W.) enters the south side of Boca de Quadra about 2 miles east of Kite Island and has depths of 16 to 60 fathoms to near its head. **Cygnet Island**, low and wooded, is on the west side of the entrance. The narrow passage on the west side of the island is frequently used by small craft. A submerged rock is near midpassage about 100 yards south of the island. **Grouse Rock**, which bares, is about 0.2 mile south from Cygnet Island; deeper water surrounds the rock. A mooring buoy is about 200 yards south of Cygnet Island. Anchorage may be found between Grouse Rock and Cygnet Island in 5¾ to 7 fathoms, off the old cannery site. It is reported that the ruins of the old cannery dock are no longer visible at the south end of the anchorage.

(218) **Humpback Creek** enters from east about 0.8 mile from the head of Mink Bay and carries a flat halfway across the channel. A privately maintained mooring buoy is close north of the flat on the east side of the bay. Above the flat is a secure anchorage, 0.3 mile wide, in 10 to 15 fathoms. A flat extends 700 yards from the head of the bay. Local knowledge is necessary to use this anchorage.

(219) **Hugh Smith Lake** empties through **Sockeye Creek** into the inlet about 0.3 mile north of the entrance to Mink Bay. A cabin is on the north bank at the head of Sockeye Creek. A trail leads from the inlet along Sockeye Creek to Hugh Smith Lake.

(220) **Marten Arm**, entered about 1.5 miles north of the entrance to Mink Bay, has depths of 23 to 107 fathoms until near the flat that extends 0.7 mile from the head. The arm is clear but has no anchorage. Above **Bactrian Point**, the main northeast arm of Boca de Quadra is too deep for anchorage.

(221)

Slate Islands

(222) **Slate Islands**, on the northwest side of the entrance to Boca de Quadra, are a group of four low, wooded islands with numerous intervening rocks. The three north islands are almost connected at low water. **Slate Islands Light** (55°05'17"N., 131°03'10"W.), 33 feet above the water, is shown from a spindle with a red and white diamond-shaped daymark on the south end of the southernmost island of the group.

(223) The coast from Slate Islands extends north for about 6 miles to Point Sykes. The shore is fringed by a number of islets and rocks. A cove, about 1.2 miles south of Point Sykes, offers some protection to small craft in moderate weather but is not sufficiently sheltered for use in heavy weather. The best anchorage is in the lee of the point on the south side of the cove in 8 to 10 fathoms, rock and sand bottom.

(224)

The Sisters to Pulizzi Island

(225) **Lucky Cove** (55°12.7'N., 131°15.9'W.) is a small indentation in the southwest shore of Revillagigedo Island midway between Point Alava and Cone Island.

(226) **Hog Rocks**, the easternmost of a chain of islands, rocks and reefs that extend southeast about 4 miles from the shore of Annette Island, are two principal groups of rocks about 1 mile apart, showing about 6 feet at high water. **Hog Rocks Light** (55°10'41"N., 131°16'59"W.), 23 feet above the water, is shown from a truncated concrete pyramid with a red and white diamond-shaped daymark on the southeast rock of the group. A ledge with 7½ feet near its end extends 0.3 mile southeast from the light. Good water is between the two groups of rocks and between the inner group and **Walker Island**. By avoiding the rocks shown on the chart, small craft can pass between Walker Island and **Lewis Island** or between Lewis Island and Ham Island.

(227) **Ham Island**, 2 miles west of Hog Rocks Light, is low and densely wooded. A deep channel is along the

entire northeast side of the island at an average distance from shore of 225 yards.

(228) **Cascade Inlet** is a deep and narrow body of water between Ham and Annette Islands. A narrow, crooked boat passage connects the inlet at its head with Revillagigedo Channel; small craft can find fair anchorage in midchannel in the broadest part of this passage close to the west end of Ham Island.

(229) **Hassler Harbor**, a bight on the north side of Annette Island, south of Bold Island, affords excellent shelter with good holding ground for small craft in southeast gales. A small grass-topped rock, 10 feet high, is 0.2 mile west of **Pow Island**, which is in the bight.

(230) **Bold Island**, about 5.5 miles northwest of Hog Rocks Light, is in midchannel off the northeast shore of Annette Island, between **Reef Point** and **Harbor Point**. It is wooded and has several knolls somewhat above the general level of the island. The south shore of Bold Island is steep-to and has no off-lying rocks. Shelter for small craft may be found in the cove on the northeast side of the island. Small boats sometimes moor to the dolphin near the head of this cove.

(231) **Angle Point Light** (55°14'19"N., 131°25'37"W.), 24 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest side of Bold Island.

(232) The passage north of Bold Island is seldom used by large vessels. **Mastic Rock**, marked by a daybeacon, bares 2 feet and is near the east end of this passage.

(233) The passage north of Round Island is much used by local fishermen. Numerous shoals are in this area, and passage should not be attempted without local knowledge.

(234) **Round Island**, about 150 feet high and wooded, is about 0.5 mile northeast of the east end of Bold Island, with two wooded islets between.

(235) **Thorne Arm** has its entrance east of Bold Island and west of Cone Island. Its general direction is north-northeast, curving gradually to north. The arm is free from outlying dangers. **Cone Island**, dome-shaped and wooded, is off **Cone Point**. **Washington Monument Rock**, 0.5 mile southwest of Cone Island, is covered 2 fathoms and surrounded by much deeper water. A number of small wooded islands are off the west shore of Thorne Arm near the head. At the head of Thorne Arm in the cove east of **Mop Point** is a somewhat constricted anchorage in 18 to 20 fathoms, hard bottom. Anchorage can also be selected in the bight on the west side at the head between **Snipe Island** and Mop Point in 25 to 30 fathoms, soft bottom. Small craft may find shelter in the small cove northwest of Snipe Island, between it and the adjoining small island. A midchannel course leads safely through the arm and to the anchorages. Private mooring buoys are 2.2 and 2.5 miles northeast of Snipe Island.

(236) **Moth Bay** is a narrow indentation on the west side of Thorne Arm just inside the entrance. In the middle of the entrance to the bay is a small wooded islet, and about 325 yards northwest from its northernmost extremity is a smaller islet with a rock about 50 yards to the south-southwest. The preferred channel leads east of the islets. Vessels up to 100 feet long can anchor in 20 to 24 fathoms, rocky bottom, about 0.4 mile above the smaller islet. Swinging room is limited, and in southeast weather vessels subject to yawing will find this anchorage uncomfortable. Small craft can find anchorage near the head of the bay in 12 fathoms, soft bottom.

(237) **Coho Cove**, about 1.2 miles west of Moth Bay and opposite the east end of Bold Island, affords fair anchorage for small craft, although the depths are great. The best channel for entering is on the east side of the islet in the entrance.

(238) **Spire Island** is small, wooded, and about 150 feet high; there is a small islet to the east close-to. **Spire Island Reef Light SI** (55°16'05"N., 131°29'59"W.), 30 feet above the water, is shown from a square, truncated concrete pyramid with a green square daymark near the northeast end of the reef that extends about 500 yards northeast of Spire Island. The reef is covered 0.1 fathom at its north end. A 1.7-fathom rock is 0.3 mile west-northwest of the light. Foul ground, with a dangerous rock awash at its end, extends west about 500 yards from the west end of the island.

(239) **Carroll Inlet** has its entrance about 1.5 miles north of Spire Island Reef Light between **Mountain Point** and **Carroll Point**. The inlet extends north about 23 miles. **California Head** separates it from George Inlet.

(240) **Mountain Point Light** (55°17'37"N., 131°32'55"W.), 29 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest tangent of Mountain Point.

(241) **Mountain Point** is an unincorporated settlement on the point. A launching ramp is on the point about 500 yards east of the light. **Herring Cove** is an unincorporated settlement on the shores of **Herring Bay**, which indents the west shore of George Inlet about 2 miles north of Mountain Point. In the small cove 0.5 mile south of Herring Bay, locally known as **Hole-in-the-Wall**, the city of Ketchikan maintains 493 feet of small-craft floats for vessels up to 40 feet. In 2002, 5 to 10 feet was reported alongside the floats. Marine supplies are not available in the cove; however, gasoline, diesel fuel, provisions and repairs can be obtained in Ketchikan.

(242) The cove does not afford adequate protection during severe weather, and boats should exercise caution when mooring overnight or for extended periods.

(243) **Cutter Rocks**, two in number, close together and uncovering 11 feet, are on the west side of the entrance to Carroll Inlet about 0.6 mile east-southeast from Mountain Point; they are marked by a light. A clear passage is between Cutter Rocks and Mountain Point.

(244) **California Cove**, on the west side of Carroll Inlet and immediately east of California Head, is a small open bight exposed to the south. The cove is deep except along the west shore. Two small wooded islets and a rock awash are close to the west shore.

(245) **Gnat Cove** is on the east side of Carroll Inlet about 6.5 miles above California Head and abreast **Hume**

Island. A fair anchorage can be had off the entrance to the cove in 17 to 18 fathoms, soft bottom. Foul ground extends 250 yards from the outer of two points at the south side of the entrance to the cove. Small craft can find good moorage inside the cove by rafting up to the anchored log booms of a log storage area on the northeast side of Gnat Cove. Care should be taken, however, to avoid the mudflats that extend from the south shore and the rock ledges that extend into the southwest bight of the cove.

(246) In the main inlet between Gnat Cove and **Island Point**, a distance of 4 miles, there are depths of about 11 to 67 fathoms, and anchorage in suitable depth can be selected with the aid of a chart. At its head the inlet narrows to 0.2 mile, with depths of 27 to 34 fathoms, shoaling abruptly to the flat that extends about 0.7 mile from the head.

(247) A midchannel course carries safely to the flat at the head of the inlet and also into Gnat Cove. The only places requiring more than usual caution are the shoal opposite Spit Point about 1.2 miles below Gnat Cove and the area about 2.5 miles above Gnat Cove, abreast of **Shoal Cove**, where there is a wooded islet 95 feet high in the middle of the inlet, with a spur that extends 300 yards from its northeast side and a flat that extends 0.2 mile toward the islet from the mouth of a stream on the east side, east of the islet. The south and west sides of the islet have a clear channel.

(248) In 1976, a logging camp was operating in the small cove 1.7 miles north of Shoal Cove; rafting grounds extend from the south side of the cove. The logging camp maintains a float landing in the cove for small craft, tugs and float planes. Water and gasoline are available in an emergency. Radiotelephone communications are available at the camp. A 40-foot Coast Guard pier is at the south end of the camp.

(249) **George Inlet**, joining Carroll Inlet from west at California Head, extends north about 12 miles and has deep water throughout. A former cannery and wharf are on the west side of George Inlet, about 3.5 miles above California Head. The stub pilings of a former wharf remain close north of the present wharf; caution is advised in this area.

(250) **Mahoney Bight**, on the west shore of the inlet, 6 miles north of California Head, is good shelter for small craft except during southeast weather. Its entrance is clear of dangers, with 10 fathoms leading into the inner bight, which has depths from 4 to 11 fathoms, hard bottom.

(251) Midchannel courses lead safely through George Inlet passing west of Coon Island and Bull Island, two wooded islands off the east shore of the inlet about 8.2 and 9.7 miles, respectively, above California Head. **Coon Island** is identified by a large white quartz outcrop showing on its south shoreline.

(252) **Coon Cove**, in the east shore of the inlet opposite the south end of Coon Island, offers good anchorage in 13 fathoms, mud bottom, south of the small tree-covered islet off the north shore and is the best shelter in the inlet in southeast weather. It is entered on a midchannel course south of Coon Island.

(253) The upper part of Coon Cove is a tidal flat. The south extremity of the flat is marked by prominent pilings. Small craft may find more convenient anchorage in 7 to 9 fathoms, soft bottom, just south of the pilings.

(254) **Leask Cove**, on the west shore near the head of the inlet, affords fair anchorage in depths of 10 to 15 fathoms, sand and gravel bottom, off the north shore of the cove. A prominent offshore rock, bare at all stages of the tide, is on the east side of the entrance. A shoal with a least depth of 2 fathoms is 400 yards northeast of the west side of the entrance.

(255) **Bat Cove**, just east of Leask Cove, affords excellent shelter for small craft, with anchorage at the head in 10 to 11 fathoms, mud bottom. The prominent offshore rock mentioned in the Leask Cove reference marks the west side of the entrance to Bat Cove. Hold close to the rock when entering the cove to avoid a rock ledge, bare at low water, that extends 200 yards southwest across the entrance from **Bat Point** on the east side.

(256) **Tsa Cove**, on the east shore of the inlet northeast of Bull Island, is difficult to enter but affords good shelter and anchorage in 10 to 14 fathoms, mud bottom. Small boats with local knowledge enter between Bull Island on the southwest and Granite Island on the northeast, holding close to the Granite Island shoreline to avoid shoals that extend from the numerous rock islets off the northeast end of Bull Island.

(257) Small boats with local knowledge pass into **Salt Lagoon** at the head of the inlet, but only at or near high water slack. The entrance is very narrow, with dangerous rapids at most stages of the tide.

(258) **Tongass Narrows**, a continuation of Revillagigedo Channel, extends northwest to Guard Islands in Clarence Strait. The principal dangers are marked by buoys or lights, so that no difficulty should be experienced in passing through in clear weather.

(259) The narrows is divided at its lower end by Pennock Island; the channel northeast of the island is called **East Channel** locally, and the channel southwest of the island, **West Channel**. Both channels are good for vessels of any draft. A lighted buoy marks the edge of a shoal making out from the southwest side of West Channel. An isolated 9.3-fathom pinnacle rock in 55°17'45"N., 131°35'55"W., is about 0.5 mile south-southeast from the southernmost extremity of Pennock Island.

(260) (See **33 CFR 162.240**, chapter 2, for regulations governing navigation in Tongass Narrows.)

(261)

Ketchikan

(262) **Potter Rock**, about 0.7 mile east-southeast of the east end of Pennock Island, is small, has 2.9 fathoms over it, and is marked by a lighted bell buoy on its south side. A 7.2-fathom shoal is about 0.2 mile south-southeast from the rock.

(274)

(263) **Pennock Island**, which divides Tongass Narrows at its lower end, is generally wooded. Several rock patches are 250 to 400 yards from shore around the southeast end of the island. Other than the dangers previously mentioned, the south shore of the island is steep-to, and the channel is clear if the island side is favored in the narrowest part of the channel. A lighted buoy is about 400 yards south of the southernmost extremity of the island.

(264) **Tongass Narrows West Channel Light 4** (55°19'08"N., 131°38'35"W.), 18 feet above the water, is shown from a skeleton tower with a red triangular daymark on the west side of Pennock Island.

(265) **Radenbough Cove**, on the northeast side of and about 0.5 mile south of the north end of Pennock Island, is south and directly across the channel from Thomas Basin. Grids for vessels up to 30 feet long are available in the cove.

(266) **Whisky Cove**, on the east side of Pennock Island about 0.45 mile south of Radenbough Cove, is southwest and directly across the channel from the Coast Guard Base.

(267) **Pennock Reef**, 0.25 mile west of the north extremity of Pennock Island, is small and bares at low water; a lighted buoy marks the northwest end of the reef. A shoal covered 2.2 fathoms is about 300 yards southeast of the reef.

(268) Foul ground extends about 200 yards north and about 400 yards northwest, respectively, of the north and northwest extremities of Pennock Island.

(269) **California Rock** is about in midchannel in the passage northeast of Pennock Island and 0.5 mile northwest from its southeast end. The rock is small in extent, has 1½ fathoms over it, and is marked by a lighted buoy. A channel is on either side of the rock, but large vessels usually pass on the north side between it and Idaho Rock.

(270) **Idaho Rock**, covered 2.2 fathoms and marked by a lighted buoy, is 250 yards north-northeast of California Rock near the north side of the passage.

(271) **Saxman** is a small settlement in the bight indenting the southwest shore of Revillagigedo Island north of Idaho Rock and about 2 miles southeast of Ketchikan. The center of the settlement has a prominent group of totem poles.

(272) A privately dredged basin protected on the south side by a breakwater is about 0.3 mile southeast of Saxman; a row of breasting dolphins is on the north side of the basin. A private light marks the west end of the breakwater. In 2002, the basin had a reported depth of 10 feet. The basin is the site of a privately operated barge and rail terminal. A loading ramp with an adjustable bridge at the head of the basin is used for handling containers to and from barges. The terminal has three acres of open storage

and is accessible from Ketchikan by highway. A float is available for small craft.

(273) **Ketchikan** (55°20.5'N., 131°38.7'W.), on the southwest side of Revillagigedo Island and on the east side of Tongass Narrows, is one of the most important cities in Alaska. It is 659 miles from Seattle via the Inside Passage, 79 miles from the sea at Dixon Entrance via Nichols Passage, 89 miles from Wrangell and 220 miles from Juneau.

(275) Ketchikan has oil terminals, a cannery and cold storage plants and is the distributing point and center of the commercial, logging and fishing industries of this part of southeastern Alaska. There are also three cruise ship piers in Ketchikan.

(276) The deepest draft of commercial vessels calling at Ketchikan was 35 feet in 2003. Commodities handled at the port include petroleum and petroleum products, fish and fish products, logs and lumber products, wood pulp, chemicals, provisions and general cargo.

(277)

Prominent features

(278) The buildings of **Ketchikan Coast Guard Base** at the south end of the waterfront, the 410-foot tower, northwest of Bar Point; the aerobeacon and gray-green gravel slopes of the airport, west-northwest of Bar Point; and a high yellow hotel and green condominium, close north and northeast of Bar Point, respectively, are prominent.

(279)

Channels

(280) A federal project provides for two small-craft basins at Ketchikan: Thomas Basin at Ketchikan Creek, with a project depth of 10 feet; and Bar Point Basin off Bar Point, with a project depth of 15 feet in the northwest section and 10 feet in the southeast section.

(281) **Thomas Basin**, the small-craft harbor off Ketchikan Creek, is protected on its west side by a log boom and on the south side by a stone breakwater. The harbor is entered from the south through a 75-foot opening between the west log boom and the breakwater on the south; a light marks the entrance. In 2007, the basin had a controlling depth of 10 feet except for shoaling in the north part of the basin, near the grids and along the edges. The city-operated floats in the basin have water and metered electricity; 80-foot and 65-foot grids are available. Fuel can be obtained at the facilities just north of the Coast Guard base. The U.S. Fish and Wildlife Service maintains a float for its own use on the north side of the basin behind the federal Building.

(282) The basin is controlled by a **harbormaster**, who maintains an office at Bar Point Basin. Local regulations limit the maximum size of vessels using the basin to 80 feet in length and 9 feet in draft. A 3-knot and "no wake"**speed limit** is enforced in the basin.

(283) **Bar Point Basin**, locally called **Bar Harbor**, is a small-craft harbor off Bar Point about 1.35 miles northwest of Thomas Basin. The harbor is protected on its west side by a detached floating breakwater, on its south side by a detached floating breakwater and a detached stone breakwater and on its southeast side by another stone breakwater. The harbor has three entrances, which are marked by lights and daybeacons. The southeast entrance is between the stone breakwater and the detached stone breakwater. The southwest entrance is between the two detached floating breakwaters, and the northwest entrance is north of the northernmost detached floating breakwater. In 2007, the basin had a controlling depth of 10.0 feet with lesser depths along the edges. The city-operated floats in the basin have water and metered electricity. Fuel can be obtained at the oil facilities just north of the Coast Guard base. A surfaced launching ramp and float are at the north end of the basin.

(284) The basin is under the control of a **harbormaster**, who maintains an office at the northeast corner of the basin. Local regulations limit the maximum size of vessels using the basin to a length of 80 feet. A 3-knot and "no wake"**speed limit** is enforced in the basin.

(285) **Anchorage** off Ketchikan is limited by the cable and pipeline areas that extend northwest through Tongass Narrows. Scan the chart carefully for limits of cable and pipeline areas before attempting to anchor. The anchorage is secure for all but the heaviest winter gales; the confined channel admits no sea, and the tidal currents do not exceed 1.5 to 2 knots.

(286) (See **33 CFR 162.240**, chapter 2, for regulations governing navigation in Tongass Narrows.)

(287) The harbor area along the Ketchikan waterfront between Thomas Basin and Bar Point is an anchorage area for large passenger vessels. (See **33 CFR 110.231**, chapter 2, for limits and regulations.)

(288)

Tides and currents

(289) At Ketchikan, there is usually a direct current or eddy setting west along the face of the wharves. 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, including at Ketchikan. Links to a user guide for this service can be found in chapter 1 of this book. For this reason all large vessels make a port landing, those from the south frequently using West Channel, which is marked by a light and buoys, and making the necessary turn around the west end of Pennock Island.

(290)

Weather

(291) This port has about 244 cloudy days a year, and rain falls on the average of about 236 days annually. October is the wettest month; it holds the 24-hour rainfall record of more than 7 inches. The marine nature of the climate is evident by the fact that the minimum temperature falls below freezing on about 76 days a year. Moscow, at approximately the same latitude, records minimum temperatures below freezing on about 170 days annually. Winds are prevalent from the southeast, and gales are

infrequent in this sheltered port. Calm conditions are frequent.

(292)

Pilotage, Ketchikan

(293) Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, Alaska, indexed as such, chapter 3, for details.)

(294) Vessels en route to Ketchikan via Clarence Strait, from the south, meet the pilot boat about 1 mile northwest of **Guard Islands Light** (55°26'45"N., 131°52'52"W.); Clarence Strait from the north, about 1 mile east of **Point McCartey Light** (55°06'49"N., 131°42'26"W.).

(295) The pilot boat, a tugboat, can be contacted by calling "KETCHIKAN PILOT BOAT" on VHF-FM channels 16, 13 or 12.

(296)

Towage

(297) Tugs up to 1,800 hp operating out of Ketchikan and engaged principally in the towing of barges and log rafts are available for assistance in docking and undocking. They are equipped with VHF-FM channels 16, 13 and 12. Arrangements for tugs should be made well in advance through ships' agents.

(298)

Quarantine, customs, immigration and agricultural quarantine

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

(300) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) Contract hospital space is available in a private hospital in an emergency.

(301) Ketchikan is a **customs port of entry**.

(302)

Coast Guard

(303) Captain of the port and marine inspection functions at Ketchikan are handled by the Coast Guard Marine Safety Detachment.

(304)

Harbor Regulations

(305) Harbor regulations are enforced by the **harbormaster**, who maintains an office at Bar Point Basin. A copy of the regulations pertaining to speed and other matters may be obtained from the harbormasters office. The harbormaster can be contacted on VHF-FM channels 16 and 73 or by telephone 907-228-5632.

(306)

Wharves

(307) The Port of Ketchikan has about 3 miles of developed waterfront on the east side of Tongass Narrows. All the wharves are privately owned. The alongside depths for the facilities described are reported; for information on the latest depths contact the operator.

(308) **Petro Marine Services, Ketchikan Wharf** (55°20'02"N., 131°37'43"W.): 75 yards northwest of Ketchikan Coast Guard Base; 283-foot face; depth alongside, 40 feet reported in 2002; deck height, 22 feet; marked at each end by a private light; receipt of petroleum products; pipelines to storage tanks; 7 metered hoses for fueling small craft; owned and operated by Harbor Enterprises, d.b.a. Petro Marine Services.

(309) **Petro Marine Services** fuel float: adjacent to the southeast of main wharf; 160-foot face; depth alongside, 40 feet reported in 2002; 20 metered hoses for fueling purposes; owned and operated by Harbor Enterprises, d.b.a Petro Marine Services.

(310) **Alaska General Seafoods, Ketchikan Wharf** (55°20'10"N., 131°37'59"W.): 650 yards northwest of Coast Guard Base; 260-foot face, southeast side 120 feet long, northwest side 60 feet long; depth alongside, 45 feet reported in 2002; deck height, 23 feet; total berthing space, 440 feet; receipt of seafood, and icing fishing vessels; owned and operated by Alaska General Seafoods.

(311) **Anderes Oil Co., Ketchikan Wharf** (55°20'12"N., 131°38'02"W.): 700 yards nortthwest of Coast Guard Base; 50-foot face with 110-foot barge moored along face; depth alongside, 30 feet reported in 2002; deck height, 22 feet; pipelines to storage tanks; 17 metered hoses on barge for fueling small craft; owned and operated by Anderes Oil Co., Inc.

(312) **Trident Seafoods Ketchikan Wharf** (55°20'16"N., 131°38'12"W.): 200 yards southeast of Thomas Basin; 170-foot face; depth alongside, 30 feet reported in 2002; deck height, 22 feet; receipt of seafood, icing fishing vessels; owned and operated by Trident Seafoods Corp.

(313) **Coastal Fisheries, Ketchikan Wharf** (55°20'18"N., 131°38'17"W.): 60-foot face; depth alongside, 35 feet reported in 2002; deck height, 22 feet; receipt of seafood; owned by Goodale Properties and operated by Coastal fisheries.

(314) **City of Ketchikan, Berths 1C and 1D Wharf and Daly Float** (55°20'21"N., 131°38'39"W.): 860 feet total berthing space; depth alongside, 20 feet reported in 2002; deck height, 22 feet; mooring cruise ships, excursion vessels and commercial vessels; owned by City of Ketchikan and operated by Ketchikan and operated by the Port of Ketchikan.

(315) **City of Ketchikan, Berths 1A and 1B Wharf** (55°20'25"N., 131°38'46"W.): 1,455-foot face; depths alongside, 30 to 40 feet reported in 2002; deck height, 22 feet; mooring cruise ships, occasional receipt and shipment of general cargo; owned by City of Ketchikan and operated by the Port of Ketchikan.

(316) **City of Ketchikan, Berth 2 Wharf**: foot of Grant Street extended; 575-foot face; depths alongside, 40 feet reported in 2002; deck height, 24 feet; mooring cruise ships; owned by City of Ketchikan and operated by the Port of Ketchikan.

(317) **Waterfront Storage Co., Ketchikan Wharf** (55°20'40"N., 131°39'24"W.): 0.5 mile northwest of Thomas Basin; 260-foot face; depths alongside, 30 to 35 feet reported in 2002; deck height, 24 feet; handling

supplies for fishing vessels; owned and operated by Waterfront Storage Co.

(318) **Talbot's Building Supply Wharf** (55°20'41"N., 131°39'28"W.): 0.7 mile northwest of Thomas Basin; 356-foot face; depth alongside, 35 feet reported in 2002; deck height, 24 feet; shipment of building supplies and lumber; owned and operated by Talbot's Inc.

(319) **Silver Lining Seafoods, Ketchikan Wharf** (55°20'50"N., 131°39'53"W.): 226-foot face; depths alongside, 35 to 40 feet reported in 2002; deck height, 24 feet; receipt of seafood, icing fishing vessels; owned and operated by Silver Lining Seafoods.

(320) **E.C. Phillips & Son, Ketchikan Wharf** (55°20'50"N., 131°40'02"W.): 500 yards east of Bar Point; 232-foot face; 272 feet east and west side; depths alongside, 30 to 40 feet reported in 2002; deck height, 24 feet; receipt of seafood; west side also used to ice fishing vessels; owned and operated by E.C. Philips and Son, Inc.

(321) **State of Alaska, Ketchikan Ferry Terminal, Berth 1** (55°21'14"N., 131°41'42"W.): 275 yards southeast of Sunny Point; 150-foot face; depth alongside, 35 feet reported alongside in 2002; passengers and vehicles; owned and operated by the State of Alaska.

(322) **Petro Alaska, Ketchikan Marine Fuel Wharf and Float** (55°21'31"N., 131°42'02"W.): 160 yards northwest of Charcoal Point; 140-foot face; depths alongside, 15 to 20 feet reported in 2002; receipt of petroleum products and fueling vessels; owned and operated by Petro Alaska, Inc.

(323)

Supplies

(324) Provisions and marine and fishing supplies are available in Ketchikan. The three oil company terminals near the southeast end of the waterfront have fueling floats for small craft in addition to wharf space for fueling larger vessels. Gasoline, diesel fuel, diesel oil, distillates and lubricating oil and greases can be obtained at these terminals. Only diesel oil is available in Ketchikan for large vessels. Most of the wharves can provide water; ice for fishing vessels can be obtained at the cold storage company wharves.

(325)

Repairs

(326) The Ketchikan Shipyard Facility is located in the Tongass Narrows adjacent to and northwest of the Ketchikan Ferry Terminal. The facility has a floating drydock, over 1,000 feet of deep water moorage, a fabrication shop, pierside utilities and ship support services. The floating drydock has a clear breadth between fenders of 107 feet, a depth over blocks of 19 feet, fully immersed, and a capacity of 9,600 tons. The facility is the largest shipyard in Alaska and serves primarily larger vessels. Several machine shops and repair firms along the waterfront can provide hull, engine, electrical and electronic repairs. The largest shaft that can be produced by local machine shops is 30 inches by 16 feet. Divers for underwater repairs and salvage work are available in Ketchikan. Engine spare parts are stocked by several of the local repair firms. Spare parts not available locally can be ordered by air freight.

(327)

Small-craft facilities

(328) The city of Ketchikan maintains several small-craft facilities in addition to Thomas Basin and Bar Point Basin, which were previously described in this chapter.

(329) **Ryus Float**: 525 yards northwest of the entrance to Thomas Basin and immediately north of Ketchikan City Dock No. 1; 136 feet of berthing space; 25 to 30 feet reported alongside in 2002; limited to craft up to 80 feet long; 4-hour limit alongside for loading and unloading, and no vessels are permitted to tie-up when a cruise vessel is docked at Berth 2 Wharf.

(330) **Hansen Float**: 290-foot concrete float on west end of Berth 2 Wharf, limited to craft up to 100 feet with a reported depth alongside of 35 feet in 2002.

(331) **City Floats**: 875 yards northwest of the entrance to Thomas Basin; 1,151 feet of berthing space with depths of 20 to 80 feet reported alongside in 2002; limited to craft up to 90 feet long or as otherwise posted; water and metered electricity available.

(332) Small-craft grids are available in Thomas Basin and Bar Harbor; city-operated boat launching ramps are at the north end of Bar Point Basin, 12.7 miles north of the town at Knudson Cove, 5 miles southeast of the town at Mountain Point and 6.9 miles east of the town at Hole-in-the Wall.

(333)

Communications

(334) Ketchikan has regular passenger, express and freight service to Puget Sound ports, British Columbia and other Alaska ports and towns by water and air. The Alaska State Ferry System has daily ferry service during the summer to Prince Rupert, BC, Sitka, Wrangell, Petersburg, Juneau, Haines and Skagway and weekly service to Seattle. This schedule is less frequent during the winter. The Inter-Island Ferry Authority offers daily round trips to Hollis year round. For more information, visit *interislandferry.com*. In addition to the scheduled airlines, other air services operate from Ketchikan on a charter basis.

(335) A highway parallels the Revillagigedo shore of Tongass Narrows. It extends from Herring Bay to Settler's Cove, about 3.3 miles northeast of Knudson Cove, in Clover Passage.

(336) Telephone and radiotelephone communications are available with the other States and parts of Alaska.

(337) **East Clump** is a wooded point on the south shore of Tongass Narrows opposite Bar Point. **East Clump Light 7** (55°20'41"N., 131°41'20"W.), 15 feet above the water, is shown from a square frame structure with a square green daymark on the east extremity of the islet.

(338) Ketchikan International Airport is on the south side of the narrows opposite Charcoal Point. A hexagon-shaped seaplane float is moored about 140 yards north of the terminal building.

(339)

Lewis Reef to Point Higgins

(340) From East Clump northwest for a distance of 2.5 miles to Lewis Reef, shoals extend 50 to 200 yards from the south shore of Tongass Narrows, but the channel is well marked by buoys.

(341) **Lewis Reef** extends from the south shore at **Lewis Point** about one-third the distance across Tongass Narrows and is bare at half tide. **Lewis Reef Light 11**(55°22'28"N., 131°44'19"W.), 15 feet above the water, is shown from a concrete pyramid with a square green daymark on the southeast edge of the reef.

(342) **Peninsula Point**, about 0.4 mile north of Lewis Reef Light 11, is the outer end of a neck of land built out from the north shore. The point is hard-topped and serves as a seaplane launching ramp. A reef, marked at the north end by a buoy, extends about 200 yards north-northwest from the point; a ½-fathom depth is about 350 yards southeast of the point.

(343)

Measured nautical mile

(344) **A 135°–315° measured nautical mile**, about 0.8 mile northwest of Lewis Reef Light 11, is along the Gravina Island shore opposite Ward Cove.

(345) **Ward Cove**, entered about 0.7 mile north of Peninsula Point, is on the north side of Tongass Narrows about 5 miles northwest of Ketchikan. The cove is about 0.3 mile wide at the entrance, wider inside, and has steep shores. A long log boom extends from the northeast end of an inoperative pulpmill to the ledge. **East Island** is a wooded islet off the northwest side of the entrance. A midchannel course leads safely into the cove, and there are no known dangers other than those mentioned.

(346) Anchorage may be had 0.1 mile east of East Island in 20 to 30 fathoms. The bottom of Ward Cove is strewn with logs throughout, with the highest concentration near the head. Within these areas of dense log concentration, there are numerous potentially dangerous snags. Mariners are advised against anchoring in these areas and to use caution anchoring in all other areas of the cove. Small craft often tie up to the anchored log booms in the cove.

(347) A cannery is on the southeast shore 0.7 mile from the head of the cove. The wharf has a 540-foot face with a depth of 40 feet alongside in 2002; deck height is 25 feet. Water and electricity for fishing vessels may be obtained. The cannery is owned and operated by Ward Cove Packing Co. Fuel and marine supplies are available in Ketchikan.

(348) A cruise ship dock (55°24'11"N., 131°43'46"W.) is on north shore of the cove. A pontoon style floating dock has a 500-foot berthing face with a depth of 90 feet alongside reported in 2022; deck height, 8 feet. The dock is owned and operated by Ward Cove Dock Group, LLC.

(349) To avoid disturbing a protective sand cover placed over the bottom of North Ward Cove, deep draft vessels should limit the thrust of their propulsion in waters less than 50 feet in depth; vessels should provide a safe distance from cruise ships maneuvering to and from the cruise ship dock.

(350) Ward Cove a small fishing village with seasonal logging operations, on the highway near the northwest corner of the cove.

(351) West of Ward Cove and near the north side of Tongass Narrows is a group of small islands, partially wooded, and rocks awash that are mostly surrounded by ledges. These small islands protect Refuge Cove from any swells that might be running in Tongass Narrows. The south side of the cove is clear. **Refuge Cove**, an unincorporated settlement, is at the head of the cove. A marina in the cove has floats with a total berthing capacity of 3,500 feet in length, and a reported depth of 15 to 60 feet alongside in 2002. The entrance to the cove is marked by a light and daybeacons. Water, electricity, gasoline, some marine supplies, storage and a launching ramp are available. A 50-ton mobile, vertical boat lift is available. One 300-ton marine railway and one 5-ton marine-aircraft railway are located at the inner end of Refuge Cove. Some hull and engine repairs can be made. Several private small-craft floats are at the head of the cove; depths of 10 feet are reported alongside. Water is available on the floats.

(352) **Channel Island**, about midchannel in Tongass Narrows and west of the entrance to Ward Cove, is wooded and has a good passage on either side, but that on the south side is generally used. A ledge extends 75 yards northeast from the island. **Channel Island Light 14** (55°23'41"N., 131°45'53"W.), 24 feet above the water, is shown from a skeleton tower on a concrete base with a triangular red daymark at the west end of the island.

(353) **Ohio Rock**, with 3½ fathoms over it and marked by a lighted buoy, is 0.3 mile northwest of Channel Island. **Danger Island Light** (55°24'05"N., 131°46'00"W.), 15 feet above the water, is shown from a tower with a red and white diamond-shaped daymark on the edge of a reef that extends west of **Danger Island**.

(354) **Mud Bay**, on the north side of the narrows about 1.5 miles northwest of Ward Cove, is shallow, with bare flats that extend 100 yards or more offshore.

(355) Several totem poles and a replica of an old Indian meetinghouse are on the east point of **Totem Bight**, the first bight northwest of Mud Bay.

(356) **Rosa Reef** makes off about 0.2 mile from Rock Point on the south shore 1.8 miles northwest of Channel Island and is covered at highest tides. **Rosa Reef Light 15** (55°24'48"N., 131°48'09"W.), 24 feet above the water, is shown from a caisson with a square green daymark at the east end of the reef. The bight south of Rosa Reef forms an indifferent anchorage but is seldom used. The west part of the bight is shoal for over 0.2 mile offshore.

(357) **Pond Reef** is about 0.2 mile from the north shore near the west end of Tongass Narrows. It is bare at half tide and usually surrounded by kelp during the summer and is marked by a light on the southwest side.

(358) **Vallenar Point**, the northwest extremity of Gravina Island, is low and wooded and rises in a long easy slope

to the high land of the island. A rocky patch, marked by a buoy, is 700 yards northeast of the point. Close northwest of the point are two wooded islets, and west of them are rocks awash at highest tides; there is no safe passage inside these rocks. The northernmost rock, **Vallenar Rock**, marked by a light, has deep water close to northwest. Small boats with local knowledge often use the passage between Vallenar Point and the small islands close-to. It has a least found depth of 1 fathom in the middle of the passage. It is necessary to pass between the two shoals northeast of Vallenar Point, which can usually be identified by being awash or by the surrounding kelp.

(359) **Guard Islands**, two in number, wooded, and close together, about 1.5 miles northwest of Vallenar Point, guard the west entrance to Tongass Narrows. **Guard Islands Light** (55°26'45"N., 131°52'52"W.), 74 feet above the water, is shown from a white square tower on a rectangular building on the north island of the group.

(360) About 0.3 mile southeast of Guard Islands is a large kelp patch marking a reef covered 0.6 fathom. Passage can be made on either side of the reef, but **Inside Passage**, between the reef and Vallenar Rock and 0.6 mile wide, is preferred. An 8.5-fathom patch is near the middle of Inside Passage about 0.7 mile southeast from Guard Islands Light.

(361) **Point Higgins**, low and wooded, is on the north shore opposite Vallenar Point. The radio towers of the Coast Guard radio station on the hills back of Point Higgins are useful landmarks, but they are not very prominent.

(362)

Behm Canal

(363) **Behm Canal** borders the east, north and west sides of Revillagigedo Island; its east entrance, between **Point Sykes** and **Point Alava**, is about 5.7 miles north-northeast of Mary Island Light. The west entrance of the canal between Point Higgins and Caamano Point is about 2 miles north of Guard Islands Light; the distance from the east entrance to the west entrance through Revillagigedo Channel and Tongass Narrows is about 30 miles; the length of the canal from entrance to entrance is about 100 miles. The main channel of the canal is exceptionally free from dangers, with no submerged rocks or ledges that cannot be easily avoided by a stranger in clear weather. It was reported that in the winter there are strong north blows and that small boats often ice up in Behm Canal.

(364) Naval **restricted** areas are in Behm Canal along the west side of Revillagigedo Island. (See **33 CFR 334.1275**, chapter 2, for limits and regulations.)

(365)

Currents

(366) The flood current enters Behm Canal at each end and meets somewhere in the vicinity of Burroughs Bay. In general the currents are not very strong, ordinarily from 1 to 1.4 knots. Tide rips generally occur on the ebb at the mouths of the various tributaries. During the ebb a strong west set is noticed in Behm Canal at the entrance to Naha Bay. (See the Tidal Current Tables for daily predictions in Behm Canal.) In the early summer, milky colored water extends from Burroughs Bay to the west end of Gedney Island and up into Yes Bay. This is the result of the glacial silt carried down by the rivers emptying into Burroughs Bay.

(367) The cove east of **Roe Point**, on the east shore, is a fair anchorage for small craft in 5 to 10 fathoms, soft bottom.

(368)

Alava Bay to Narrow Pass

(369) **Alava Bay**, on the west shore of Behm Canal, about 2.8 miles northeast of **Point Alava** (55°11.6'N., 131°11.1'W.), is partly open to south weather. Depths in the main part of the west bight are 16 to 28 fathoms, but fair shelter for small vessels can be found close inshore in 6 to 10 fathoms, soft bottom. Some swell but very little wind comes into the head of this arm. A privately maintained mooring buoy is in the west bight. The entrance to the west bight is constricted by a 1½-fathom shoal in midchannel. The shoal is marked by thick kelp in the summer. The east bight is clear but too deep to afford anchorage.

(370) **Narrow Pass** is west of **Rudyerd Island**, on the west side of Behm Canal 8 miles above Point Alava. The northeast and southwest shores of Rudyerd Island are very foul and should be given a wide berth. Small craft can find some shelter from southeast blows in the two narrow bights at the north end of the island. Such craft have tied to the steep west shore of the west bight. The head of the west bight is shallow and rocky; in 1957 an anchored 50-foot cruiser grounded on a falling tide 100 yards from the south shore.

(371)

Smeaton Bay to Burroughs Bay

(372) **Smeaton Bay** enters Behm Canal from east 10 miles above Point Sykes and east of the south end of Smeaton Island. On the south side of the entrance to the bay, between **Carp Island** and **Short Point**, a vessel can lie in summer in 19 fathoms, hard bottom, protected from the summer winds. Small vessels may find shelter close to Short Point in 5 to 10 fathoms. Numerous shoals and rocks are close to Carp Island; foul ground extends about 0.3 mile from the northwest side of the island. Another deep-draft anchorage may be found on the south side of the bay near the entrance to a small inlet 0.6 mile east of Short Point in 20 to 30 fathoms, hard bottom.

(373) Seven miles from the entrance, the bay divides into **Wilson Arm** and **Bakewell Arm**. A mining camp is on the south shore of Wilson Arm about 3.5 miles from the entrance. A floating pier is at the camp, and a private mooring buoy is northeast of the camp.

(374) **Princess Bay**, to the west of Smeaton Island, is open and exposed to the south. Deep water extends close to the shores, and depths in the bay are too great for anchorage.

Short Pass, between the north end of Smeaton Island and **Wasp Point**, has a depth of 11 fathoms.

(375) A private mooring buoy is about 0.8 mile north-northwest of Wasp Point. Small craft can find anchorage in the small bight in the west shore about 1 mile north of the south tip of **Sharp Point** (55°20.7'N., 131°01.4'W.) in 15 to 20 fathoms, hard bottom. This anchorage affords good protection from south and southeast winds. Anchorage for small craft can be had in the bight to west of Sharp Point, depths ranging from 5 to 20 fathoms, hard bottom. When entering, favor the west shore. Very small craft can find a land-locked anchorage in the bight on the west shore, about 1.5 miles southwest of Sharp Point in 2 fathoms, soft bottom. This bight and the entrance are foul. Enter only on a rising tide with local knowledge, and use extreme caution.

(376) **Wasp Cove** is on the west shore of Behm Canal, about 3 miles north of Smeaton Island. It affords anchorage for small craft in 5 to 7 fathoms, soft bottom, free from obstructions.

(377) **Shoalwater Pass** is a narrow body of water that separates **Winstanley Island** from the mainland. The pass is divided into two separate anchorages, the north one being the better of the two, with depths of 5 to 33 fathoms, mud bottom. The south anchorage has depths of 12 to 27 fathoms, mud bottom. Small craft can pass through the narrows between the anchorages at high water. **Candle Island** is on the west side of the south entrance to the pass. A submerged rock with 3 feet over it is near the middle of the south entrance about 0.9 mile north of Candle Island. The bar at the north entrance has a depth of 9 feet and should not be crossed at low water except by small craft. A privately maintained mooring buoy is about 0.3 mile southwest of the bar at the north entrance to the north anchorage.

(378) **Entrance Island**, which is fairly bold, may be passed on either hand in approaching the north entrance to Shoalwater Pass. Pass in midchannel between the highwater islet at the north end of Winstanley Island and **Slag Point**; then favor the mainland shore and proceed with caution until up with the wooded island on the Winstanley side of the channel. Leave this island to the west and select an anchorage south of it.

(379) **Checats Cove**, on the east side of Behm Canal, is entered about 1.7 miles north-northeast of Winstanley Island between **Edith Point** on the north and **Checats Point** on the south. The cove affords anchorage for small vessels, protected from south winds, in about 8 to 10 fathoms, mud bottom, about 100 to 200 yards north of Checats Point. Strangers should select an anchorage at low water, as the flats extend for some distance and are then plainly visible.

(380) **New Eddystone Rock** (55°30.2'N., 130°56.2'W.), 20 miles above Point Sykes, is a remarkable shaft of rock, 230 feet high, rising from a sand shoal in the middle of the canal, with deep water surrounding it. It may be passed on either hand, keeping it at a distance of 0.5 mile to avoid the sand shoal. At the east extremity of the shoal is a small pinnacle rock that uncovers about 4 feet.

(381) **New Eddystone Islands** are a group of islets and rocks, some of which cover; they extend for about 1.2 miles offshore northeast of New Eddystone Rock. Small craft with local knowledge pass among these islands, but strangers should keep to west of them.

(382) **Ella Creek**, west of New Eddystone Rock, empties into the small bight behind **Ella Point** on the west shore of Behm Canal. A mooring buoy is about 0.15 mile northwest of Ella Point.

(383) **Rudyerd Bay**, about 11 miles long, enters Behm Canal from east between **Point Eva** and **Point Louise**, about 23 miles above Point Sykes and 3.5 miles northeast of New Eddystone Rock. The bay and approaches are free from outlying dangers.

(384) The bay has several branches. The first, named **Punchbowl Cove** due to its precipitous sides, enters the bay from south and is 2.2 miles from the entrance. Temporary anchorage may be found close to the south shore near the head of Punchbowl Cove in 25 fathoms. The bottom is medium gravel and may not provide a strong hold in heavy weather. A privately maintained mooring buoy is on the south side of the cove, approximately 0.3 mile from the head.

(385) The bay branches north and south approximately 7.5 miles from the entrance. An anchorage in 20 fathoms, hard bottom, is near the head of the upper arm and opposite a prominent landslide. Small craft can find temporary anchorage near the edge of the flats at the head of the bay and the head of the upper arm. Landslides may occur in the upper arm and at the head of the bay and may cause uncharted shoreline changes or shoaling in flatter areas. Temporary anchorage may be had about 0.5 mile east of Point Louise and about 400 yards north of a small, but prominent landslide, in 18 to 20 fathoms, hard bottom. The bottom is very irregular.

(386) **Sargent Bay**, on the west shore of Behm Canal opposite Rudyerd Bay, is open and exposed to south. Depths throughout the bay are too great for anchorage. **Cactus Point** is the northeast point and **Tramp Point** the south point at the entrance. A small-boat passage is on the west side of the group of islands north of Tramp Point. The passage is clear, but favor the islands to clear the foul ground along the west shore.

(387) The channel on the west side of **Manzanita Island** (55°34.7'N., 130°55.9'W.) is clear, with a controlling depth of only 6 feet. This channel is used to a large extent by small fishing vessels. Midchannel courses are good.

(388) **Manzanita Bay**, on the west side of Behm Canal, west of **Wart Point** (55°35.3'N., 130°56.5'W.), affords good anchorage in 20 fathoms, soft bottom. The head of the bay is filled with a flat that bares, and several rocks that bare are along the edge of the flat. The anchorage is in the southeast bight of the bay. In entering, favor the east shore to avoid the rocks and flat previously mentioned. U.S. Forest Service maintains a float in the small bight on the west side of Wart Point. Depths at the outer end of

the float are reported to be 8 fathoms. U.S. Forest Service also maintains a mooring dolphin off the mouth of **Grace Creek**, 4.7 miles north of Wart Point.

(389) **Snip Islands** are off the west shore of Behm Canal, 1.3 miles north of Grace Creek. Good anchorage for small craft can be had in the passage west of the islands in about 15 fathoms, sandy bottom. The entrance is from north. The south entrance is obstructed by a bar that bares.

(390) **Walker Cove** enters Behm Canal from east about 10 miles above Rudyerd Bay entrance and abreast Snip Islands. The cove has great depths throughout except at the entrance. The shores of Walker Cove are very abrupt and in some places almost perpendicular. A summer anchorage can be made in midchannel on the inside of the bar at the entrance between **Hut Point** and **Ledge Point** in 10 to 20 fathoms. The bar has depths of 4 to 10 fathoms. Rocks and ledges off the entrance points are the only dangers in the cove. Foul grounds extend about 0.25 mile west-northwest of Ledge Point and about 0.2 mile southwest of Hut Point; caution is advised in the narrow entrance channel. U.S. Forest Service mooring buoy is near the head of a bight on the south side of the cove about 5 miles east-northeast of the entrance.

(391) **Channel Islands** are two wooded islands about 0.6 mile off the east shore of Behm Canal, about midway between Walker Cove and Chickamin River. The islands may be passed on either side, but care should be taken to avoid the reef, awash at high water, that extends about 0.2 mile southeast of the islands.

(392) **Chickamin River** enters Behm Canal from east, between **Fish Point** and **Trap Point**, about 5 miles above the entrance to Walker Cove. Large flats occupy almost the whole of the bay at the mouth of the river and extend almost to the two points at the entrance from Behm Canal. Small craft can find temporary anchorage near the edge of the flat.

(393) **Portage Cove** on the west side of the canal opposite the entrance to Chickamin River bares. Depths of 3 to 8 fathoms can be found at the entrance, but these drop off quickly to deep water.

(394) **Saks Cove** on the northeast shore of Behm Canal 10 miles above the mouth of Chickamin River affords anchorage near the north end. There are no dangers, except the small flat at the northeast corner of the cove and a reef that uncovers 4 feet about 75 yards southeast of **Fire Point**, the west point at the entrance.

(395) **Fitzgibbon Cove** is on the northeast shores of Behm Canal, about 2.6 miles north of Saks Cove and about 1.5 miles southeast of the entrance to Burroughs Bay. The entrance between **Dew Point** and **Hose Point** is clear. **Center Islets**, wooded, are near midchannel, 0.4 mile inside the entrance. **Gibbs Rock**, bare and 15 feet high, is on the east side of the cove, 0.3 mile above Center Islets. A submerged rock with 6 feet over it is 110 yards 300° from Gibbs Rock. The cove affords good anchorage about 0.2 mile above Gibbs Rock in 11 to 13 fathoms, mud bottom.

(396) **Burroughs Bay**, clear, enters Behm Canal from the northeast. **Unuk River** enters the head of the bay from north and **Klahini River** from northeast; Unuk River is said to be navigable a considerable distance for skiffs. The head of the bay and the mouths of both rivers are filled with flats. There is no secure anchorage. Temporary anchorage for moderate-sized craft can be selected on the east side just south of the flat of the Klahini River in about 30 fathoms. Small craft can anchor near the edges of the flats. The depths at the head of the bay are gradually shoaling. The U.S. Forest Service maintains a mooring buoy here.

(397)

Anchor Pass to Smugglers Cove

(398) **Anchor Pass** is a narrow strait about 6 miles west of the entrance to Burroughs Bay, which separates the northeast end of Bell Island from the mainland. Protected anchorage can be found about 0.6 mile inside the south entrance in 10 to 20 fathoms of water, mud bottom. The pass has good anchorage for small craft in the small cove just south of the restricted north entrance in 3 to 5 fathoms, soft bottom. The north entrance to Anchor Pass is shallow and rocky. The least depth of the shoalest reef, in the middle of the pass at its north end, is 1½ feet. A privately maintained mooring buoy is on the east side of the pass about 0.8 mile north-northwest of **Point Lees**, the east point at the entrance to Anchor Pass.

(399) The estimated tidal current has a velocity of 2 to 3 knots at the north end of the pass and flows north from about 2 hours after low water until 2 hours before the next low water. From 2 hours before to 2 hours after low water the current flows south with a velocity of about 1 knot.

(400) **Behm Narrows** separates **Bell Island** from Revillagigedo Island. The shores of the narrows are generally steep and heavily wooded. Midway through the narrows, at the narrowest point, the tidal currents change direction. **Snipe Point Light** (55°55'32"N., 131°36'54"W.), 18 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the southwest end of Bell Island; it marks the west entrance to Behm Narrows and the south entrance to Bell Arm. Anchorage can be had in the bight on the north side of the narrows about 1.6 miles east of Snipe Point Light and about 0.5 mile south of Bell Island Hot Springs. The bight affords anchorage in about 14 fathoms, mud bottom. Care should be taken to avoid the rocks and ledge on the north side of this bight.

(401) **Bell Island Hot Springs** is a privately owned, former resort, at the head of the cove at the southwest end of Bell Island about 1.5 miles east of Snipe Point Light.

(402) An overhead power cable with a clearance of 285 feet crosses the east end of Behm Narrows.

(403) **Bell Arm**, which separates the northwest shore of Bell Island from the mainland, extends northeast from Behm Canal and at its head is joined by Anchor Pass;

it has good anchorage in the expansion at its head in 10 to 20 fathoms, soft bottom. Snipe Point Light on **Snipe Point** marks the south entrance to Bell Arm. **Short Bay** and **Bailey Bay** are two small, narrow bays entering the northwest side of Bell Arm. Short Bay has good anchorage in 15 to 18 fathoms; a flat extends about 400 yards from its head. A private mooring buoy is near the flat. Inland from Bailey Bay is an area of hot springs. A mooring buoy is on the west side of Bailey Bay about 1 mile from the head.

(404) An overhead power cable with a clearance of 561 feet crosses the north end of Bell Arm centered at 55°59'32"N., 131°27'31".

(405) **Hassler Pass** and **Gedney Pass**, on the east side of Behm Canal and south of Snipe Point Light, separate Hassler Island from Revillagigedo Island; the passes are broad and clear. **Shrimp Bay**, at the head of Gedney Pass, is crossed 0.5 mile east of its entrance by an overhead power cable with a clearance of 280 feet. Farther in, **Klu Bay** has good anchorage in 16 fathoms, soft bottom, suitable for vessels of moderate size. A private mooring buoy is on the west side of Klu Bay.

(406) **Dress Point** is a broad point on the east side of the south entrance to Hassler Pass. An anchorage for small craft, with depths of 14 to 17 feet, is in a cove on the east side of Hassler Pass, 1.5 miles north of Dress Point.

(407) **Blind Pass**, between **Black Island** and the northwest side of **Hassler Island**, offers protection and anchorage for small craft in the basin at the southwest end of the pass. Because of rocks in this entrance, local knowledge is necessary in entering the basin. The pass is closed by a sandbar just northeast of the basin. The bar uncovers 3 feet and is studded with small boulders up to a foot in diameter. Northeast of the bar the water is deep, ranging from 10 to 50 fathoms except for a 3½-fathom spot near midchannel at the northeast part of the entrance to the pass. A privately maintained mooring buoy is in a small bight on the south side about 0.9 mile northeast of the bar.

(408) **Convenient Cove**, in the southwest end of Hassler Island between it and Gedney Island, is too deep for anchorage. The narrow passage east-southeast of the cove leading to Gedney Pass is clear for small vessels except for some rocks on the north shore and a ledge extending in a northwest to southeast direction surrounding the easternmost islet.

(409) **Yes Bay** enters Behm Canal from the northwest between **Bluff Point** and **Syble Point**. **Bluff Point Light** (55°53'03"N., 131°44'46"W.), 12 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on Bluff Point on the southwest side of the entrance to the bay. The entrance is free from dangers.

(410) A fishing resort is on the north point of a narrow passage leading to the first basin, about 2.6 miles above the entrance of Yes Bay. Caution must be exercised in navigating the east end of this passage. Water and gasoline are available. The resort maintains radiotelephone communication with Ketchikan. Charter seaplane service with Ketchikan is also available. Anchorage can be had about 0.3 mile southeast of the resort in 22 fathoms, mud bottom.

(411) The narrow passage, close south-southwest of the fishing resort, leads to the first basin where good anchorage can be had in 15 to 32 fathoms, mud bottom. A good small-boat anchorage in 8 fathoms is near the southeast end of the first basin. At the head of the first basin is a group of islands, east of which is a channel leading to the inner basin, where good anchorage can be had in 11 to 12 fathoms, mud bottom.

(412) Care is required in navigating Yes Bay, and strangers should do so at low water when the rocks are clearly visible. Enter in midchannel and then favor the north shore. In entering the first basin, pass between the charted rocks and the resort pier. If going to the inner basin, favor the north shore up to the group of islands that separate the two basins. Here the channel narrows to about 75 yards because of a submerged rock with 3 feet over it, and a rock awash at low water, both of which are on the west side of the channel. In passing through this channel, favor the east shore. Once past the islets, the innermost basin is clear.

(413) **Spacious Bay**, west-southwest of Bluff Point Light, is a broad bay in the west shore of Behm Canal about 22 miles above **Caamano Point** (55°30.0'N., 131°58.2'W.). **Square Island** is in the entrance near the south shore; the channel south of the island is not recommended for vessels larger than small craft. Near its head the bottom is irregular and there is a considerable area of tidal flats with off-lying reefs and submerged rocks. Good anchorage can be selected in the lee of Square Island, sand and mud bottom. The bights in the north shore of the bay are not recommended for anchorage.

(414) **Snail Point**, on the west side of Behm Canal about 3.8 miles south of Bluff Point Light, is readily identified by the distinct knoll, about 0.5 mile south of the point. On the west side of the point is a bight 0.5 mile long that affords good anchorage for small craft. A submerged rock with ¾ fathom over it is in the middle of the bay, and small craft should favor the east shore until clear of this rock and proceed to the head of the bay for anchorage.

(415) **Neets Bay** indents the east shore of Behm Canal about 19 miles above Caamano Point. The bay has no good anchorage. Small craft, however, can find fair shelter in the last cove (locally called Fire Cove) toward the head of the south side of the bay. Pass east of the small wooded islet and anchor east of it in 3 to 5 fathoms, sand bottom. The bottom in Neets Bay is very irregular and there are several dangers, one of which is a submerged rock with ¼ fathom over it, 300 yards southwest from the west end of **Bug Island**, which is in the middle of the entrance to the bay. Enter Neets Bay either north or south of Bug Island but south of **Clam Island**, which is about 1.4 miles east of Bug Island. A shoal extends from Clam Island almost to the north shore of the bay.

(416) **Bushy Point**, a prominent projection on the east side of Behm Canal about 2 miles south of Neets Bay,

is readily recognized from north and south by a series of dome-shaped hills immediately inshore from the point. **Bushy Point Light** (55°43'52"N., 131°43'56"W.), 18 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the west side of the point.

(417) **Bushy Point Cove**, a small bay inside of Bushy Point, is too deep for anchorage except for small craft that anchor close to the beach at the head of the bay.

(418) **Heckman Point**, on the west shore of Behm Canal opposite Bushy Point, is prominent and readily identified by some reddish brown rocks. On the northwest side of the point is a small bight that is used as a temporary anchorage for small craft.

(419) **Traitors Cove**, entered about 2.5 miles south-southeast of Bushy Point Light, indents the east shore of Behm Canal about 15 miles above Caamano Point. An island is in the middle of the entrance. Ledges extend north and south from this island, but the center of the channels on both sides are clear. About 300 yards west-southwest from the north point at the entrance is a rock that uncovers 6 feet. It presents a real danger to craft leaving or entering the cove by the north entrance.

(420) A narrow and rocky pinch point, about 3.5 miles inward from the mouth of Traitors Cove, should be avoided by strangers as the strong tidal currents and rocks make navigation dangerous. The upper part of the cove can be entered only by small craft at slack water, which is very short in duration; on the flood small craft should keep away from the narrow entrance to the upper cove as there is danger of being swept through by the force of the current. There is very little time of slack water on spring tides; the current changes direction very suddenly. **Marguerite Bay**, the bight on the south shore of Traitors Cove about 2 miles above the entrance, affords the only anchorage in the cove. Rocks are on both sides of the bight near its entrance, and a depth of 11 feet is found in midchannel at the entrance.

(421) **Port Stewart** is an indentation in the west side of Behm Canal, 12.5 miles north of Caamano Point. Its south entrance is just north of **Point Francis**, a prominent wooded point. The north entrance point is not well defined, being low, flat country for 1 mile from the beach. Four wooded islets are across the mouth of the bay. A clear channel is between the easternmost and southernmost islets, but there are some off-lying rocks to avoid. The best entrance is north of the two larger islets. The passage between the southernmost wooded islet and the main shore is narrow, but clear, with a least depth of 5 fathoms.

(422) Anchorage can be had in 10 to 20 fathoms, rock and mud bottom, past the larger islets at the entrance to Port Stewart. Small craft with local knowledge can find sheltered anchorage in 5 to 6½ fathoms, mud bottom, in the land-locked bight in the north shore of Port Stewart, about 3.5 miles above Point Francis.

(423) The small bight on the east shore of Behm Canal, about 0.5 mile north of **Escape Point** opposite Point Francis, is too deep for anchorage, although in good weather small craft anchor in the south end of this bight near Escape Point.

(424) **Raymond Cove** and **Wadding Cove**, opposite Naha Bay, are indentations in the west shore of Behm Canal about 3 and 3.9 miles, respectively, southwest of Point Francis. They are useless as anchorages, and at low water there are extensive tidal flats of sand and gravel with some boulders.

(425) **Mike Point** is a low, rocky point separating Wadding and Raymond Coves. The point is foul and should be given a good berth. The beach here is strewn with bleached logs and other drift, and this is also true, to a lesser extent, of all the shore north to Point Francis.

(426) **Helm Bay** indents the west shore of Behm Canal about 5.5 miles above Caamano Point. The north entrance point is marked by **Trunk Island**, off **Helm Point**, a small, prominent, slightly wooded island. The south entrance point is marked by **Helm Bay Light** (55°34'50"N., 131°55'43"W.), 14 feet above the water, shown from a skeleton tower with a red and white diamond-shaped daymark on the outermost islet on the southwest side of the entrance.

(427) Behind **Forss Island**, on the west shore, 3.3 miles in from the light, is a small cove at the head of which is a privately maintained float with depths of 20 feet reported alongside in 1976. Enter the cove from the north passing between two charted off-lying rocks.

(428) There are some dangers, but midchannel courses carry safely to the head of the bay. The channel leads between **Thomas Island** on the north and two wooded islands joined by a reef to south. Pass in midchannel north of Forss Island and another wooded island beyond, above which the bay is comparatively clear. There is about 0.5 mile of tidal flats at the head of the bay that drops suddenly into deep water.

(429) Anchorage is available in midchannel in 16 fathoms, mud bottom, about 1.2 miles above Forss Island, and in 21 fathoms, gravel and mud bottom, about 2 miles above the island. The latter is the better anchorage.

(430) **Smugglers Cove**, west of Helm Bay Light, is on the west side of Behm Canal, about 5 miles north of Caamano Point. It is a fair anchorage for small craft, although local knowledge is necessary to clear the dangers. Extensive tide flats are at the head of the cove.

(431)

Indian Point to Grant Island

(432) **Indian Point** marks the north entrance to Naha Bay. The country north of the point is heavily wooded. The shore is rocky and generally steep-to.

(433) **Naha Bay**, on the east side of Behm Canal about 11.5 miles northeast of Caamano Point, is a popular sports fishing and hunting area. The bay and its approaches are clear. **Loring** is a village on the north side near the head of the bay. **Cache Island**, round and wooded, is near the middle of Naha Bay and has deep water on all sides with

the exception of a 9-fathom spot about 0.3 mile west of the island.

(434) The usual anchorage is just below the ruins of an old wharf about 300 yards from the shore of the village, in 19 fathoms, mud bottom. The shore in front of the village should not be approached closer than 100 yards. Small craft can find anchorage in the small bay north of **Dogfish Island** where shelter is had from any southwest squalls that occasionally strike with considerable force. The bight east of the village is practically dry at low water. A state-maintained L-shaped small-craft float and a seaplane float joining it at the southeast end are at the head of the cove west of the wharf in ruins. In 1976, depths of 12 feet were reported alongside both floats.

(435) **Roosevelt Lagoon** is a body of brackish water that is connected to Naha Bay through a tiderace only at extreme high water. The passage is dangerous and should not be used without local knowledge. Small barges at one time made this passage.

(436) **Moser Bay**, an indentation in Revillagigedo Island, is separated from Naha Bay by **Cedar Island**, **Moser Island** and **Stack Island**. Good anchorage for small craft is found in 7 fathoms in the small bight in the northwest part of the bay; for larger craft in 20 fathoms at the head of the bay. Two private homes with floats are on the east side of the bay. At the head of the bay is a tidal flat about 0.5 mile long. A reef makes off southeast from **Cod Point**, the north point at the entrance to **Long Arm**.

(437) **Grant Island**, on the east side of Behm Canal, is about 1.5 miles south-southwest of Naha Bay and about 8 miles northeast of Guard Island Light. The island is heavily wooded. **Grant Island Light** (55°33'16"N., 131°43'44"W.), 18 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the west side of the island.

(438)

Clover Passage to Caamano Point

(439) **Clover Passage**, a deep passage on the west side of Revillagigedo Island, is frequently used by vessels proceeding between Tongass Narrows and Naha and Moser Bays. It has several entrances from the north in deep narrow channels between Cedar and Moser Islands, Stack and Grant Islands and a deep, wider entrance between Back and Grant Islands.

(440) **Back Island**, low and heavily wooded, is about 1.2 miles west of the south end of Grant Island. A reef extends about 0.2 mile off the northwest end of the island, and broken ground extends 0.3 mile east of the island. The channel between Back Island and Betton Island to the southwest is foul with reefs of submerged rocks and rocks awash.

(441) **Hump Island** is close off the east side of Betton Island about 0.4 mile south of Back Island. A daybeacon is on the southeast end of the island.

(442) **Betton Island** is on the east side of the west entrance to Behm Canal. **Betton Head**, on the west side of the island, is a prominent feature of the locality.

(443) **Joe Island**, close southeast of the south extremity of Grant Island, is in midchannel near the north entrance with deep channels on each side.

(444) **Pup Island** is off the south extremity of Betton Island at the southwest entrance to Clover Passage. A narrow channel less than 100 yards wide with a depth of 5 fathoms is between the two islands.

(445) **Clover Island** is in midchannel in the southwest entrance to Clover Passage. Deep channels are on each side of the island. **Clover Passage Entrance Light** (55°28'43"N., 131°48'47"W.) 20 feet above the water, is shown from a from a skeleton tower with a red and white diamond-shaped daymark on an islet about 0.4 mile southwest of Clover Island. A ledge with rocks awash extends about 0.2 mile northeast of the light.

(446) **Knudson Cove** is a small bight on the southeast side of Clover Passage, about 0.6 mile east-southeast of Clover Passage Entrance Light. Small craft use it as an anchorage. A depth of 4 fathoms is at the entrance. In 1970, the 4-fathom area was reported to provide good anchorage in southeast winds up to 35 knots. A daybeacon marks the west side of the entrance to the cove. Another daybeacon near the head of the cove marks a rock awash at half tide. A floating breakwater, marked on the northwest end by a private daybeacon, is in the cove. **Clover Pass** is an unincorporated settlement on Knudson Cove.

(447) The city of Ketchikan maintains small-craft floats with about 615 feet of mooring space on the east side of Knudson Cove near the head. In 2002, depths of 12 to 35 feet were reported alongside. Local regulations limit the size of vessels using the floats to 65 feet in length. Two boat launching ramps with a float in the middle are close southwest of the approach pier. Private floats are 75 yards northeast and 150 yards west of the approach pier, respectively. Clover Pass has telephone and highway communications with Ketchikan.

(448) **Survey Point** is on the southeast side of the southwest entrance to Clover Passage. A fishing resort is 0.7 mile northeast of the point. In 1976, the reported depths alongside the floats at the resort were 3 to 5 feet. Water, gasoline and limited marine supplies are available.

(449) **Tatoosh Islands**, west of Betton Island, are a group of islands north of which are numerous off-lying rocks known as **Tatoosh Rocks**. The southernmost island has deep water close to the west shore, and a yellow cliff 130 feet high on this island is a good landmark. The northwesternmost rock of Tatoosh Rocks is 14 feet high and has an off-lying reef that bares 10 feet, 140 yards northwest. The rocks are light colored and show well in clear weather. A light marks the northernmost island.

(450) The passage between the southernmost Tatoosh Island and Betton Island is clear, but the north end of the passage is rocky, and local knowledge is necessary to navigate this area. Small craft use these waters for anchorage, but there is some danger from williwaws.

(451) **Bond Bay** and the smaller indentations between Bond Bay and Caamano Point Light are used as temporary anchorages by the smaller fishing craft during the trolling season. These anchorages are exposed to southeast and are not recommended because of the suddenness and great force with which the southeast winds strike in this area.

(452) **Bittersweet Rock** (55°31.7'N., 131°55.7'W.), about 0.5 mile east of the south extremity of the point forming the north side of Bond Bay, is a dangerous submerged rock covered 2 fathoms. Mariners are urged to exercise extreme caution in this area because other dangers or shoals may exist.

(453) **Caamano Point Light** (55°29'55"N., 131°59'02"W.), 41 feet above the water, is shown from a steel post with a red and white diamond-shaped daymark on the southernmost part of the point.

(454) **Caamano Point**, the west point at the west entrance to Behm Canal, is long and low. Its extremity is somewhat indefinite when abeam, because of the Bond Bay shore in the background and because the light is not on the actual point, but 0.5 mile west.