



Additional chart information may be found in CATP2, Catalog of Nautical Charts.  
**SECTOR 6 — CHART INFORMATION**

## SECTOR 6

### ILES LOYAUTE TO THE SANTA CRUZ ISLANDS (INCLUDING VANUATU, THE BANKS ISLANDS, AND THE TORRES ISLANDS)

**Plan.**—This sector describes the entitled groups of islands and their off-lying reefs and dangers. The descriptive sequence is in a S-N direction, starting with Iles Loyaute and terminating with the Santa Cruz Island group, about 720 miles to the N.

#### General Remarks

**6.1** Iles Loyaute are dependencies of New Caledonia, while the Banks and Torres Islands are the dependencies of Vanuatu. The Santa Cruz islands are the territory of the Solomon Islands.

**Winds—Weather.**—The Southeast Trades dominate the region of the Iles Loyaute; E to SE winds are most dependable between November and May, and there is less from these directions and an increase in S to SW winds between June and October.

Annual rainfall is fairly heavy; the wettest part of the year is between January and April, with definitely drier conditions in the latter part of the year.

This area lies near the region of maximum frequency of tropical cyclones in the South Pacific. The season of most common occurrence of these storms is between December and March.

The Southeast Trades definitely dominate the Vanuatu area, from May to October or November; more than 80 per cent of the winds blow between E and S, and W winds are practically unknown. During the remainder of the year, although E to SE winds still predominate, directions are much more variable.

From January to March the N part of the region experiences considerable NW winds and many calms. In these same months tropical cyclones arise in or cross the Vanuatu area, usually traveling S; this type of storm is quite rare in the N but not uncommon in the S part of the group.

Rainfall is generally heavy, ranging from over 2,800mm per annum on the exposed E sides of the islands, to around 1,800 to 2,300mm in more sheltered locations. The least rainy months are June, July, and August, when the trade is most strongly dominant.

Winds are steadiest and on the average, strongest, over the Santa Cruz Island region when the Southeast Trades prevail, usually beginning in May and lasting through October, during this time about 70 per cent of all winds are less than 10 per cent showing a W component. From November to April, however, the winds are much more variable, though still predominantly E, and at this season the stronger winds blow from N directions.

North gales are occasionally experienced, due probably to formation of tropical cyclones not far S or W.

#### Iles Loyaute

**6.2** This group of islands is located about 70 miles E of New Caledonia and consists of three large islands, Mare,

Lifou, and D'Ouvea. There are also a number of small islands, islets, and rocks, the most prominent being Dudune Island (Ndundure Island), Tiga Island, North Pleiades Island, and South Pleiades Island. Iles Loyaute have not yet been completely surveyed, and from past information no reliance can be placed on the set of the currents in this locality.

Between Iles Loyaute and Efate Island, about 180 miles NNE, a WNW set at a rate of 0.75 knot has been observed. About 10 miles W of Ile Mare the currents usually set SE, while between Ile Mare and Ile Lifou the current is strong but irregular.

Between Iles Loyaute and New Caledonia, a NW set is usually encountered, the strength of which is increased considerably after several days of fresh SE winds. During N or NW winds, rates may be decreased or a countercurrent may become established. After a period of N winds, it may be several days before the normal NW set is reestablished.

**Aspect.**—The three main islands of Iles Loyaute consist of raised coral and do not exceed a height of 150m. The islands of D'Ouvea Atoll do not exceed a height of 30m. The coasts of all these islands are formed mostly of steep, craggy cliffs; in other parts wooded cliffs descend in gradual slopes to the sea. In the low-lying areas there are numerous coconut palms.

**Pilotage.**—Pilotage is compulsory for the following vessels within the waters of New Caledonia:

1. All foreign vessels regardless of their length.
2. All French vessels more than 60m in length.

French warships are exempt from pilotage, as well as pleasure craft less than 60m in length. Masters of pleasure craft less than 60m in length are advised to consider engaging the services of a pilot if unfamiliar with the area.

See the Noumea port description in [paragraph 5.18](#) for further information.

**Regulations.**—Tank vessels within the waters of New Caledonia, or in distress and within 50 miles of New Caledonia, are governed by special regulations, which may be found in Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia. See also the Noumea port description in [paragraph 5.18](#) for further information.

**Signals.**—See the Noumea port description in [paragraph 5.18](#) for further information.

**Anchorage.**—In all the anchorages around Iles Loyaute, the bottom is composed of coral covered by a thin layer of sand, making the holding power of the ground only moderate. Vessels should use a good scope of cable here, and be prepared to get underway if the weather deteriorates.

**6.3 Ile Mare** (21°30'S., 168°00'E.), the SE island of the group, has several uncharted coral patches reported to lie off the N end of the island. Baie de Tandine, on the SW side of the island, is considered to be the best anchorage off the island. A monument stands at the head of this bay. A wharf lies near the

monument. Vessels can obtain anchorage with the wharf bearing 055°, 649m offshore, in a depth of 37m.

**Baie du Nord** (Baie de Ro) (21°21'S., 167°55'E.) is located on the N side of Ile Mare. There is a conspicuous temple near the W entrance point of the bay and a white house in ruins on the E entrance point. A small sandy beach lies at the head of the bay. Anchorage can be obtained about 0.3 mile off the sandy beach, in a depth of 28m. Caution is advised, as there is a risk of fouling the anchor on the coral bottom.

Baie de l'Allier (Baie Poane) lies on the NE side of Ile Mare and is the largest and deepest bay of the island. There is an anchorage off the S shore of the bay, about 0.4 mile offshore, in depths of 35 to 37m. This anchorage is indifferent and is not recommended for a long stay, except in good weather.

**Baie de Niri** (Baie Aoui) (21°37'S., 167°55'E.) lies on the SW side of Ile Mare and offers shelter from winds between the N and E. There are some sunken reefs in the N part of the bay which do not break. However, the sea almost constantly breaks on two reefs located 0.2 to 0.3 mile W of the landing place of a small village. There is an anchorage off the village, but caution must be used because of the reefs.

**Ile Dudune** (Ile Ndundure) (21°20'S., 167°44'E.) is located about 3 miles NW of Cape Mackau, the NW extremity of Ile Mare. This low and barren island has two mounds which appear as two islands when seen from a distance. The shores of the island, as well as the passage separating the island from Ile Mare, are said to be free of dangers.

**6.4 Ile Leliogat** (21°17'S., 167°33'E.) is low and almost barren. The shores of the island appear to be free of dangers, but the weather side is steep and the sea generally breaks violently upon it. Ile Oua (Ile Ua) lies 2.5 miles NNE of Ile Leliogat and is equally low and free of dangers. It has been reported these two islands lie 3 miles SW of their charted positions.

The **Ile Tiga** (21°06'S., 167°48'E.) coastline is formed of perpendicular cliffs. The S, SE, and NW points of the island are foul to a distance of 0.2 mile or more, but the SW and E coasts are clear. A village stands at the NW end of the island.

**Ile Vauvilliers** (21°08'S., 167°35'E.), about 11 miles W of Tiga Island, is 1.5 miles long and 0.5 mile wide. Though its coasts are clear of dangers, it is advisable to leave it to the W when passing at night, as the pine trees on the SE part enable it to be seen more clearly on that side.

**Ile Lifou** (20°55'S., 167°15'E.) is the largest and most important of the Iles Loyaute group. The island lies with Cape de Flotte, its S extremity, 23 miles NW of Cape Mackau. A number of villages stand on the shores of the island. Vessels can obtain anchorage in the various bays about the island. A light is shown from Cap des Pins on the SE side of the island.

**Baie de Wahda** (21°06'S., 167°26'E.) lies between Cape de Flotte and Cap des Pins. The shore of the bay is fringed by a narrow reef. Isolated houses close to the shore can be seen from close offshore.

Baie du Chateaubriand lies about 14 miles NW of Cap des Pins. The bay is extensive, but its shores have not been examined. The bay is obstructed with coral patches, and a barrier reef lies off the shore from 0.25 to 0.3 mile. There are two wharfs in the bay. One is 40m long, with an alongside depth of 5.5m and a dolphin off its E end, and can accommo-

date vessels up to 70m long; the other quay, which is 60m long, with a depth of 4.5m alongside, has a ro-ro facility at its S end. Range beacons, a directional light, and buoys mark the channel leading to the wharfs. Temporary anchorage might be obtained during W winds close W of the S entrance point. The village of We lies at the head of the bay.

**Cap Bernardin** (20°44'S., 167°18'E.) lies 9 miles N of Baie du Chateaubriand and is reported to be free of dangers. The cape forms the NE extremity of the island. Two white houses stand near the cape. From Cape Bernardin to Cape Escarpe, the N extremity of the island, the coast is bare, precipitous, and free from off-lying dangers.

**6.5 Baie du Doking** (20°43'S., 167°11'E.) lies 4 miles SW of Cape Escarpe. Doking village is situated on the E side of the bay, about 0.8 mile S of the NE entrance point. A temple with a gray roof stands in the village, but is obscured from seaward by vegetation; a water tower situated close SE of the temple is a better mark. A vessel may obtain anchorage off the SE shore of the bay, in depths of 33 to 37m, sand and coral, with the temple bearing 046°, distance about 1 mile, or with the temple bearing 049°, distant about 1.3 miles.

Recif Jouan, about 4 miles NW of the NW extremity of Ile Lifou, consists of two separate coarse coral islets, each about 1.8m high, lying on a reef on which the sea breaks. Midway between the reef and the island there are considerable depths and no sign of any dangers.

**Baie du Sandal** (20°51'S., 167°07'E.) is entered between Aime Martin Point and Lefevre Point, 8 miles South. The shores of the bay present the same aspects, steep and wooded cliffs of moderate height, with sandy beaches. Iatio Point lies 4 miles E of Aime Martin Point and is marked by a white chapel. A reef, awash, lies 0.2 mile WSW of Iatio Point.

**Baie de Chepenehe** (20°47'S., 167°09'E.) is located between Iatio Point and Shepenehe Point. On the NE shore of the bay is a conspicuous black rock, and about 0.2 mile E of this rock is a prominent monument. The village of Shepenehe lies close SE of the monument. Anchorage can be taken, in a depth of about 25m, with the monument bearing 015°, 0.5 mile distant. It is inadvisable for a vessel without local knowledge to anchor at night or attempt to ride out a SW gale at this anchorage.

**Baie de Gaatcha** (20°54'S., 167°07'E.) lies on the S side of Baie du Sandal and affords shelter from all winds from the WSW through S to NE. A vessel bound for the anchorage should pass about 0.2 mile N of Cape Mandé and steer E until the church at the head of the bay bears 180°. Steer for the church on this bearing and anchor, in 26m, about 0.5 mile offshore. Vessels are advised to use caution to avoid the two reefs, awash, just N of the anchorage. A small vessel may anchor, in a depth of 1m, with the church bearing 120°, distant about 0.3 mile.

**6.6 Shelter Reef** (20°53'S., 167°03'E.), located 1.5 miles N of Cape Mandé, is composed of coral and has a width of about 0.3 mile. The sea does not always break on it, but it may be seen from aloft under ordinary light conditions. The current runs strong near the reef. Vessels should carefully guard against this reef, for it lies on the route of vessels passing between Lefevre Point and Baie de Chepenehe.

**D'Ouvea Atoll** (Ovea Atoll) (20°33'S., 166°25'E.) is a group of closely-connected islands and reefs, the nearest point of which is about 26 miles WNW of the NW part of Ile Lifou. The atoll comprises a large island and a number of smaller ones, forming an irregular triangle with its base (the large island) to the E. From the N and S extremities of the large island extend converging chains of islands and reefs which nearly meet at a point about 20 miles W of the middle of the large island, enclosing a vast lagoon with general depths of 9.1 to 37m, in which there are several anchorages, and entrance to which may be gained by the different passages between the reefs.

**Ile Ouvea** (20°33'S., 166°34'E.), the largest and E island of the atoll, extends for a distance of 22 miles in a NNE-SSW direction. The middle part of the island is reduced to an average breadth of 0.8 mile by Baie de Fayaoue, a deep-water bay on its E side. The E side of the island throughout its whole length is steep and clear of dangers, but the W side is low with sandy beaches, off-lying shoals, and shallow water. The SW extremity is detached from the main island.

**Mouly Island** (Muli Island) (20°42'S., 166°25'E.), the detached SW part of Ile Ouvea, has on its S side a reef 0.1 mile wide. The reef fringing the W end should be watched with care, as there are several detached heads. There is a church and a cross on the NW side of the island. The passage between Mouly Island and Ile Ouvea is shallow and is only used by small boats.

Ueneti Island (Ile Ounes), close W of the NW extremity of Ile Ouvea, is surmounted by flat-topped hills. There is a village and a church on the S side of the island. The channel between the two islands is navigable only by small boats.

The Northern Pleiades are a chain of reefs and islets forming the N side of the lagoon, extending in a W direction from Ile Ouvea. North Island lies about 0.5 mile W of Ueneti Island and is the E of the Northern Pleiades. **Whale Island** (Baleine Island) (20°25'S., 166°31'E.) is located 0.8 mile SW of North Island. There is no practicable passage between the islands, as the sea breaks between them.

**Tortoise Island** (20°25'S., 166°29'E.) lies nearly 0.5 mile SW of Whale Island. When viewed from a distance, it appears somewhat like a tortoise. Whale Passage lies between Whale Island and Tortoise Island and has a width of about 0.4 mile. There are several heads of coral covered by a depth of about 7.3m, with deeper water between. Seaward of the Whale Island side of the channel are two coral reefs to be avoided.

**Pine Island** (Pins Island) (20°27'S., 166°28'E.) is located 2 miles SW of Whale Island. The island is easily known by two clusters of pine trees near its center, and is the only island of the Northern Pleiades upon which pine trees are seen. The sea breaks on a reef on the NW side of the island. Lizard Island lies about 1 mile W of Pine Island; the passage between the two islands is known as Bull Passage (Taureau Passage). Tidal currents are strong in this passage.

**Deguala Island** (20°22'S., 166°24'E.) lies about 3 miles W of Lizard Island and is the largest island of the Northern Pleiades. Anemata Island (Anguene Island) lies about 9 miles WSW of Deguala Island, the islands and islets between these two islands can best be seen on the chart.

Anemata Passage, at the W extremity of D'Ouvea Atoll, lies SW of Anemata Island. It is about 3 miles in breadth and clear

of dangers. The S side of the passage is bound by a reef extending in a NW-SE direction for about 5 miles. This reef uncovers at LW to a large extent, shows well, and is steep-to. A strong eddy is experienced on the S side of this passage.

The Southern Pleiades consists of the islands and reefs which form the SW side of the D'Ouvea Atoll lagoon. The passages between these islands are wider and more easily navigable than those of the Northern Pleiades.

**Round Island** (20°35'S., 166°16'E.) is at the E end of the long reef forming the S side of Anemata Passage. The reef fringing the island is not more than 90m wide. Long Island, located 2 miles S of Round Island, is covered with brushwood. Round Island and Meurthe Passages are divided into two passages by Middle Island. Meurthe Passage is the wider and more easily navigable.

Styx Island lies 3 miles E of Long Island. Both islands stand on the same reef. Styx Passage lies between Styx Island and Metouaine Island. The passage is about 0.8 mile wide and free of dangers. The reef and islands SE of Styx Passage extend in a SE direction for a distance of nearly 4 miles, reaching almost to Muli Island. The narrow channel separating them from the latter is Coetlogon Passage. The passage is about 0.2 mile wide. A shoal patch, with a depth of 6m, lies in mid-channel close within the entrance. A reef, 0.1 mile in width forms the N side of the passage. It is covered with a depth of 1m and seldom breaks. The reef is marked by a buoy. A strong current sets toward the reef.

## D'Ouvea Atoll—Anchorages

**6.7** Vessels may obtain anchorage anywhere in the lagoon on the W side of Ile Ouvea. Being composed of coral and a thin layer of sand, the holding ground is mediocre. Vessels should use a long scope of chain, as the holding depends on the weight of the anchor and chain.

Muli Island Anchorage is situated off the N side of the island, about 1.5 miles E of Coetlogon Passage. This is the best anchorage the lagoon affords. The depths in the anchorage are from 9 to 11m, about 0.5 mile N of Muli Island church.

**Lekin Anchorage** (Lekine Anchorage) (20°40'S., 166°29'E.) lies 5.5 miles ENE of Coetlogon Passage, off the village of Lekin. It appears to be a good place for small vessels to anchor near shore, in a depth of 5.5m. Care should be taken to avoid a 1.2m patch about 0.5 mile NE of the SW extremity of Ile Ouvea. Boats can land on the beach.

Faiaue Anchorage is situated 3.5 miles NE of Lekin village. A church with two spires and a red roof, two radio masts, and a flagstaff are useful landmarks. Anchorage is available, in a depth of 10m, 2 miles W of the church. A shoal, which has a depth of 5.2m, lies about 1.5 miles WNW of the church. Foul ground, with depths of less than 1.8m, extends 0.5 mile off the coast abreast Faiaue.

Mouillage de Saint-Joseph is located off the village of Saint-Joseph, near the N end of the island, and affords temporary anchorage only. Vessels anchor, in a depth of 8m, with the church bearing 080°, and a hill 7 miles NW of **Cap Escarpe** (20°26'S., 166°40'E.) bearing not less than 347°. The bottom is hard, and there are several coral heads in the vicinity.

A jetty, with alongside depths of 4m, is situated about 6.5 miles S of Saint-Joseph.

Beautemps-Beaupre Atoll, which lies about 7 miles NW of D'Ouvea Atoll, encloses a lagoon which is entered on its W side. The main reef which encloses the lagoon, and on which the sea breaks furiously, is on the E or weather side. The W side of the lagoon is formed of detached reefs. There is a small sandy islet on the reef near the E extremity of the atoll.

**Beautemps-Beaupre Island** (20°25'S., 166°09'E.), the principal island, is wooded, except near its E extremity, which is bare. The island was reported to be just above water.

**Anchorage.**—Anchorage may be obtained, in a depth of 20m, good holding ground, with the E end of Ile Beautemps-Beaupre bearing 160°, 1.3 miles distant.

**Astrolabe Reefs** (19°35'S., 165°38'E.) lie about 35 miles NW of Beautemps-Beaupre Island. Shoals having depths of 11 to 16.5m extend 0.5 mile N from the S reef and 0.5 mile S from the N reef, leaving a channel between of 90m width and depths of about 40m, but with strong eddies. Vessels can anchor 0.3 mile from the N reef, in a depth of 40m. The position is protected from the sea throughout the E semicircle, and a detached reef to the SW breaks the force of the sea in that direction.

Breakers on the reef were visible at 3 miles, but the sandy islet was difficult to see from offshore. A reasonably-sheltered anchorage for small craft was found in depths of 10 to 12m, sand bottom, in the lagoon about 0.5 mile N of S corner of the reef. Coral heads are to be avoided in the area.

## Vanuatu (New Hebrides Islands)

**6.8 Vanuatu (New Hebrides Islands)** lies NE of Iles Loyaute and consists of about 40 mountainous islands, islets, and rocks. The islands are wooded and have numerous fertile valleys. Some of the islands are entirely of volcanic formation, others are of coral, and several are a combination of both. There are several active volcanoes, and earthquakes are not uncommon.

**Winds—Weather.**—On the average, the islands of Vanuatu are affected by two hurricanes a year.

**Tides—Currents.**—Vessels approaching these islands from the S should give them a wide berth as there appears to be a strong set towards them.

**Caution.**—During W winds, which occur usually during the hurricane season, patches of discolored water are frequently observed in deep water W of Vanuatu. These patches are caused by conglomerates of bright sand-colored plankton, which give a disconcerting impression of shoal water.

**Aneitioum Island** (Anatom Island) (20°12'S., 169°46'E.), the S island of Vanuatu, is 9 miles long in an E-W direction and 7 miles wide. It has two peaks and appears as two islands. Port Aneityum, on the SW side of the island, is formed by a projecting point of land, Coconut Ridge, and by a coral reef nearly 2 miles long. A conspicuous wreck is stranded on the reef 0.6 mile SSW of the S end of Inyeug Islet. The reef is awash at half tide and always breaks.

The anchorage is approached from the W, with a flat rock on the fringing reef close S of the island's SE extremity bearing 100°. Two sets of beacons lead into the port; the first, in line bearing 100°, stand on Coconut Ridge, while the second pair, in line bearing 060°, stand 0.4 mile N of the first pair, and are seen between two houses with green roofs.

**Anchorage.**—Anchorage is available, in a depth of 13m, with the second pair of beacons in line, and Coconut Ridge bearing 127°. A 10.1m patch lies about 0.2 mile NW of this depth.

**Caution.**—Caution is advised here as squalls at this anchorage are often violent. If W winds are expected, vessels are advised to moor with both anchors down, bows to the W.

Volcanic activity was reported (1996) about 50 miles SSE of Aneitioum Island.

**6.9 Immahie Reef** (20°13'S., 169°41'E.) lies 2.5 miles NW of Port Aneityum and about 0.5 mile from the nearest shore. It is nearly awash and about 1 mile in length in a N-S direction. There are shallow heads between the reef and shore. Anau-un-se is an opening in the coastal reef. Its entrance is about 42m wide and is deep in the fairway.

**Anchorage.**—Anchorage may be obtained, in depths of 11 to 12m, 90m offshore, with **Saddle Peaks** (20°11'S., 169°44'E.) bearing about 134°. This inlet is only suitable for small craft.

**Ijiphav** (20°08'S., 169°44'E.) lies about 1.5 miles NE of Anau-un-se. Anchorage may be obtained, in depths of 7 to 9m, 0.1 to 0.2 mile offshore. Landing is obstructed by a coral flat that borders the shore.

Port Patrick, entered about 2.5 miles E of Ijiphav, lies between two detached coral reefs, the entrance being 0.3 mile wide, with depths of more than 9.1m. The N edge of the reef on the W side always breaks, A detached reef lies in the middle of the harbor.

**Anchorage.**—Anchorage is available in a depth of 33m, sand, coral, and shells, with a church bearing 110°, and the N edge of the W detached reef bearing 290°. Anchorage also may be obtained, in depths of 18 to 22m, between the detached reef and the shore reef S of it. This anchorage is suitable for small vessels.

**6.10 Futuna Island** (19°32'S., 170°10'E.) is flat topped. Foul ground extends 0.2 mile from its NE extremity and 0.1 mile from its E extremity, elsewhere it is steep-to. The island has three easily-identified sandy beaches. On the E side of the island the current sets S at a rate of 1 to 2.5 knots; on the W side of the island the current sets to the N. It was reported (1973) the island lies 3.7 miles, bearing 076° from its charted position.

**Tanna Island** (19°30'S., 169°20'E.) is about 20 miles long and 9 miles wide. The island is densely wooded, except in the NW part. Mount Yasur, an active and prominent volcano, lies about 2.3 miles W of the E extremity of the island.

Heavy tide rips and discolored water occur off the NE and E extremity of the island.

**Port Resolution** (19°31'S., 169°27'E.) lies close N of the E extremity of Tanna Island. The port is no longer used as an anchorage due to silting. Sulphur Bay lies close NW of Port Resolution and is an indentation of considerable size. The bay has not been examined.

**Weasisi Bay** (19°28'S., 169°22'E.), 6 miles NW of Port Resolution, affords good anchorage during the prevailing SE winds, but ashes from the volcano make it disagreeable to stay. Large vessels anchor in 12m while small vessels anchor in 7m.

**Lenakel Anchorage** (19°33'S., 169°16'E.) is a small bight on the W side of Tanna Island. The shore N and S of the anchorage is fringed with coral reefs to a distance of 0.2 to 0.3 mile. A rock, awash, which appears yellow in good weather and breaks in a light swell, lies 0.15 mile offshore and 0.65 mile SE of Worthington Point. The anchorage has not been thoroughly examined and other dangers may exist.

Aniwa Island lies about 11.5 miles NE of the NE extremity of Tanna Island. It was reported (1973) that the island is 4 miles from its charted position on a bearing of 320°. The island is about 3.5 miles long and entirely lacking in good anchorages. There is a mission station near the N end of the island. Reefs have been reported to lie 0.2 mile off the island's W side.

**6.11 Erromango Island** (18°49'S., 169°05'E.) presents a very rough appearance and is almost entirely surrounded by sheer cliffs. The S side of the island is densely wooded, with white limestone cliffs showing in places. The mountains inland are wooded to their summits. Pilbarra Point is the SE extremity of the island and is reported to lie 2 miles S of its charted position; the E coast was reported to be 2 miles E of its charted position. It was also reported that Erromango Island and Goat Island lay about 4 miles SSE of their charted positions (1973).

**Dillon Bay** (18°47'S., 168°58'E.) indents the W coast of the island. Its position may be known by a deep gap in the hills, and by four distinct terraces formed in the seaward slope of the S point of the bay.

**Anchorage.**—Anchorage for ships over 100 tons can be taken about 0.4 mile W of the river mouth, which gives about 0.3 mile swinging room. This anchorage is not recommended in a SW wind, as it is close to the fringing reef on the N side. A strong W wind may occur at any time between November and April, and cause a heavy swell in the anchorage.

Polenia Bay, on the E coast of Erromango Island, is about 5 miles wide and recedes up to 3 miles. The SE side of the bay is formed by a peninsula, of which Traitor Head (Ouborre Point) is the extremity and affords good shelter to the bay. Anchorage has been taken off the head, in a depth of 31m, 0.5 mile offshore, with the extremity of the head bearing 162°, and Goat Island bearing 055°.

**6.12 Port Narevin** (18°45'S., 169°12'E.) lies in the SE part of Polenia Bay. The bottom slopes gently and the depths across the entrance are 9.1 to 10.9m. The entrance is about 0.5 mile wide between reefs, which extend from each side. The outer edges of the reefs are steep-to and the sea breaks on them. There is anchorage in the E side of the bay, about 0.3 mile offshore, and the same distance between the reefs, in a depth of 11m. There is a mission station situated in the port.

Cook Bay, a broad and deep indentation on the S side of Ouborre Point, is exposed to the prevailing Southeast Trades and has not been explored. The shores are low and wooded. It was reported that a depth of 6.4m existed 1.3 miles from Ouborre Point.

**Tides—Currents.**—A strong W set has been reported between Erromango and Efate Islands when the trade winds are blowing.

**Efate Island** (17°40'S., 168°23'E.) is one of the most important islands of Vanuatu, having two excellent harbors, Vila and Havannah. The island is 25 miles long and about 18 miles

wide. Vanua Tap, a high hill overlooking Vila Harbor, is a good landmark when approaching the island from the SW or W. A beacon stands on the W end of Vanua Tap.

**Tides—Currents.**—The currents in the vicinity of the island generally run with the prevailing trade wind at a rate of 0.25 to 0.75 knot, but they are not very regular and at times there may be a weak set to the E.

**6.13 South Bay** (Teouma Bay) (17°48'S., 168°22'E.), entered between Narapo Point and Tapis Point, 2 miles NW, has considerable depths up to its head. The best anchorage is in the NW corner of the bay, in a depth of 14.6m, about 0.2 mile from the beach. The coast between South Bay and Pango Point, 6 miles WNW, is broken by a number of small bays.

**Mele Bay** (Meli Bay) (17°44'S., 168°15'E.) is entered between Pango Point, which shows a light, and Devil Point (Matao Tiupeniu Point), 5 miles NW. At its N end is Mele Islet Anchorage, and on its E side, is Vila Harbor. The bay is completely open to the SW. Depths in the bay are too great for anchoring except off Mele Islet, where vessels may obtain anchorage, in depths of 27 to 37m, about 0.1 mile N of the NE extremity of the islet. An aero light is shown close NE of the islet.

### Port Vila (17°44'S., 168°19'E.)

World Port Index No. 57230

**6.14** Port Vila is a protected harbor on the E side of Mele Bay. The city is the seat of government for the Republic of Vanuatu. Facilities for all types of cargo are available, with a major export being copra.

**Winds—Weather.**—The harbor affords excellent shelter in all but W winds and hurricanes.

**Tides—Currents.**—The mean tidal rise is 0.8m, while the spring rise is 1m.

Caution is advised as tide rips occur off Devil Point (Matao Tiupeniu Point), the W entrance point of the bay.

**Depths—Limitations.**—Mele Bay is deep and clear of dangers. The approach to the outer harbor passes between shoals extending S of Malapoa Point (Arbel Point), and NW from Ifira Island. There is a least depth of 11.9m on the range line. The N portion of the harbor is deep and clear, except in the NE segment, where foul ground extends nearly 0.2 mile offshore.

Pontoon Bay, E of Ifira Island, is deep and clear of dangers, except for foul ground extending almost 0.2 mile E from it. The main berths are in the S portion of this bay and will be described below.

The channel to Paray Bay leads N and E of Iiririki Island (Reriki Island); it is obstructed by three coral reefs, and is marked by buoys. Vessels using this channel are restricted to a draft of 2.7m at HW.

Main Wharf, situated at the head of Pontoon Bay, has a length of 212m and an alongside depth of 10.7m. This berth can handle ro-ro and container vessels. Ardimann Wharf, with a length of 50m, has an alongside depth of 8m. This berth is used by small tankers and car carriers.

Several berths, including a petroleum terminal, exist along the shore of Paray Bay, offering alongside depths of 1.2 to 3m.



**Port Vila—Paray Bay from N**

**Aspect.**—A prominent triple-topped hill is a good landmark when approaching Mele Bay, as is a wooded hill on the E side of the bay. A white beacon stands on the W end of the latter hill. Pango Point is the termination of a thickly wooded strip of low land, and may be identified by the hill with the beacon on it, mentioned above. This point should not be confused with another point 3 miles ESE of it. Devil Point (Matao Tiupeniu Point) is low and wooded.

Port Vila is surrounded by steep, wooded hills. On the E and N sides of the harbor, there is a narrow flat coastal strip, while white cliffs exist in the harbor's SE corner. Ifira Island, which has a flat limestone plateau, forms the W side of Port Villa. A drying reef connects it to a flat, wooded peninsula on the mainland S of the island. An overhead cable, with a maximum vertical clearance of 12m, spans the channel between the island and the shore. Iririki Island (Reriki Island), also of limestone and wooded, lies in the E part of the harbor. A reef, partly awash, connects the S end of the island to the S shore of the harbor.

**Pilotage.**—Pilotage is compulsory for vessels over 60m in length. Pilotage should be ordered at least 48 hours in advance, confirming 2 hours prior to arrival. The boarding ground is situated 2 miles WSW of the channel entrance buoys. By day, the vessel will display the usual signals, while at night it will show a flashing red light.

**Regulations.**—At Main Wharf, berthing and unberthing will occur day or night, by request. At the other wharves, berthing is allowed by day, while departure is permitted day or night.

Speed in the harbor is limited to 5 knots.

**Signals.**—Vessels should send their ETA through Port Villa Radio (YJM) at least 72 hours in advance, confirming 2 hours prior to arrival. The pilot station and the pilot vessel may be contacted via VHF channels 16, 6, 8, 12, 13, and 14, from 0630 until 1830.

**Anchorage.**—Large vessels anchor just S of the entrance range, with a beacon on the N side of Iririki Island (Reriki Island) bearing 121°, 0.4 mile distant. This berth offers depths of 29m over a bottom of grey mud and fine sand, good holding ground. Anchorage is also available, in a depth of 20m, over coarse sand, good holding ground, with the beacon on Iririki Island (Reriki Island) bearing 091°, 0.3 mile distant. Vessels may also anchor in Pontoon Bay clear of the foul area in the bay's center, best seen on the chart.

**Directions.**—Keep an eye out for the tide rips S of Devil Point (Matao Tiupeniu Point), and the two fish rafts moored 7 miles SW and 5.3 miles NW, respectively, of Devil Point (Matao Tiupeniu Point). A set of range lights, in line bearing 078°, are shown from the shore of Port Villa, and mark the entrance channel. Beacons stand on the N and S shore of Iririki Island (Reriki Island) and just W of Main Wharf.

**Caution.**—The range markers, reported as 6m red triangles of open lattice construction attached to a square pedestal, are difficult to identify.

## Mele Bay to Port Havannah

**6.15 Devil Point** (Matao Tiupeniu Point) (17°45'S., 168°11'E.), the W entrance point of Mele Bay, is a low wooded promontory. It is the S extremity of the peninsula that separates Mele Bay from the entrance to Port Havannah. Some rocky ledges extend a short distance off the point. Strong tide rips and overfalls frequently extend several miles S of this point, even in calm weather.

Leinamaia Point (Toukoutouk Point), 2.5 miles NW of Devil (Matao Tiupeniu) Point, is a low tongue of land covered with trees. The open bay on the E side of this point is unfit for anchorage. On the NW side of the point, and 0.25 mile from its extremity, are some white houses that show well from seaward. Vessels can anchor off these houses in 22m, with the extremity of the point bearing 201° and a cliffy point bearing 063°, distant 0.5 mile. Paul Rock lies 3.5 miles N of Leinamaia Point (Toukoutouk Point) and 0.4 mile from the shore.

**6.16 Eretoka Island** (Eradaka Island) (17°38'S., 168°09'E.) lies 4.5 miles N of Leinamaia Point (Toukoutouk Point). It resembles a low-crowned hat from all points of view. The NW side of the island is fringed with a reef which extends more than 0.2 mile NW from its NE extremity. A reef extends 0.2 mile from the SW extremity of the island and terminates in depths of 3.6m about 0.3 mile offshore. Depths of less than 10.9m extend about 0.5 mile SW from the island. A light is shown near the summit.

Lelepa Island lies 2.5 miles NE of Eretoka Island (Eradaka Island) and forms the SW side of Port Havannah. The gullies and slopes of the island are wooded, but the highest parts are covered with grass. Temporary anchorage may be obtained off the NW side of the island, as the water shoals gradually; the 35m curve lies 0.3 mile from the shore. Leinamaia Point (Toukoutouk Point), in line with the 36m islet off the W point of Lelepa Island, leads clear of all dangers off the W shore. A signal station stands on the summit of the island.

**Moso Island** (Verao Island) (17°32'S., 168°16'E.) is separated from the N end of Lelepa Island by a narrow passage and forms the NW side of Port Havannah. The island is comparatively low, but has several grass covered hills. A reef extends 0.1 mile off Payne Point, the SW end of the island, and about 1.5 miles NE a sunken reef, which does not always break, extends 0.4 mile from the shore. A reef, nearly awash and usually marked by breakers, extends 0.35 mile from the NW point of the island.

**Port Havannah** (17°34'S., 168°16'E.) is enclosed between the NW coast of Efate Island and Lelepa Island and Moso Island. It is available to all classes of vessels, but the depths are so great that there are few places where convenient anchorage can be taken. Two channels, Hilliard Channel and Little Entrance, lead into Port Havannah, and a boat channel connects its inner end with the sea.

**Hilliard Channel** (17°37'S., 168°13'E.) has a navigable width of 0.5 mile, is very deep and free of dangers, with the exception of the fringing reef, which on the E side extends nearly

0.2 mile from the shore. Little Entrance, the N entrance of Port Havannah, has a least depth of 10.1m in mid-channel. The channel is 0.3 mile wide, but because of the shoals extending from each side of the entrance points, its navigable width is reduced to about 0.1 mile.

**Pilotage.**—Mariners without local knowledge are cautioned not to enter Port Havannah without a pilot. Vessels bound for the harbor may obtain pilots at Port Vila.

**Anchorage.**—From **White Sand Point** (17°35'S., 168°14'E.) to its head, almost 4 miles NE, Port Havannah narrows considerably, and the outer 2.5 miles of this stretch is occupied by anchorage berths with depths of 28 to 92m. Anchorage can be taken in Matapu Bay, in 29m, sand. The best berth is in a position with White Sand Point and **Reef Point** (17°34'S., 168°15'E.) in line bearing 252°, and a storehouse on shore bearing 108°.

**6.17 Undine Bay** (17°29'S., 168°20'E.) is formed by the N coasts of Moso Island and Efate Island, together with Pele Island, Nguna Island (Ngouna Island), and Kakula Island. The bay is open to the NW and can also be entered from the E through a channel between Kakula Island and Pele Island.

**Palao Bay** (17°32'S., 168°22'E.) indents the N shore of Efate Island at the inner end of Undine Bay. The shores of the bay are fringed with reefs and should not be approached within 0.5 mile. Anchorage is not recommended as the bottom is foul.

Nguna Island (Ngouna Island), which is volcanic with steep sides, is thickly wooded in its SW part. Tapoutoara, a bold crater located near the center of the island, makes a good landmark when approaching Efate Island and Undine Bay. There is a mission station and church near the SE point of the island.

**Anchorage.**—Anchorage may be obtained off a small stream near the mission station, in a depth of 12.8m, about 0.2 mile offshore. There is also anchorage off the NW side of the island, in a depth of 20m, but is not recommended with on-shore winds.

**6.18 Pele Island** (17°29'S., 168°25'E.) lies close SE of Nguna Island (Ngouna Island) and is also volcanic. The passage between the two islands is shallow and strewn with coral heads. Foul ground extends some distance off the W side of Pele Island, and vessels should keep at least 0.75 mile offshore. Kakula Island is low, wooded, and lies on a coral reef that projects 1 mile from the N shore of Efate Island.

Rinali Reef is a small isolated patch lying more than 0.1 mile off the edge of the fringing reef 1.25 miles E of the N end of Kakula Island. It is readily seen, as the sea always breaks on it. Mangea Reefs are two coral patches marked by breakers and lie 2.75 miles SE of Rinali Reef.

**Mao Island** (Emau Island) (17°28'S., 168°30'E.), about 3 miles E of Pele Island, is almost circular, nearly 2 miles in diameter, and thick with vegetation. Its sides rise steeply to a large crater in the middle of the island. There are several villages on the S side of the island. There is fairly good anchorage off the W side of the island, in a depth of 20.1m, with the S hill of Mao Island in line with a hut on the beach bearing 088°, and the SW extremity of the island bearing 147°.

The depths decrease rapidly as the island is approached from the W. Should the wind be to the N, anchorage can be taken on the SW side, in 16.4m, with the S extremity of the island bear-

ing 097° and the S edge of the crater bearing 047°. The tidal currents set strongly and erratically around the island.

**Scott Rocks** (17°28'S., 168°34'E.), about 3 miles E of Mao Island, are two pinnacle rocks about 45m apart, with a depth of 28m between them. The E rock has a least depth of 6.7m; the W rock has a depth of 7.3m. These rocks are steep-to all around and do not break even in a heavy sea. The current in this vicinity often runs strongly to the W, but it is irregular.

**6.19 Forari Bay** (Metensa Bay) (17°41'S., 168°33'E.) (World Port Index No. 57245) lies about 3 miles W of Maniouro Point, the E point of Efate Island, and is a good anchorage for small craft, except with winds from the N to E. Several coral heads obstruct the entrance to the bay. A rock, with a depth of 3m, lies 0.2 mile ESE of a wooded point at the head of the bay. The center of the S part of the bay has depths of 8 to 10.9m.

**Depths—Limitations.**—A T-headed pier is situated on the S shore of the bay. Vessels up to 160m in length, with maximum drafts of 8.4m call here to load manganese. A set of range lights, in line bearing 225°, marks the entrance channel. This berth is open E, and there is almost always a swell. Berthing is impossible in NE winds.

**Pilotage.**—Pilotage is available, but no details are available at present.

**Signals.**—Signals are displayed from a flagstaff on top of a cliff near the range lights. If a deterioration in the weather has been forecast, a red ball by day or a red light at night will be displayed.

**Anchorage.**—Anchorage can be taken off the entrance of the bay, in depths of 20 to 28m, sand and coral.

**6.20 Manuro Point** (17°41'S., 168°36'E.), the E extremity of Efate Island, is low, rounded, and thickly wooded. A fringing reef extends 0.2 mile off the point; its outer edge is steep-to. Tide rips extend a considerable distance from the point and give the appearance of shoals.

Meslep Point (Tabuis Point) lies 6.8 miles SSW of Manuro Point. A sunken reef 2.5 miles long lies about 0.3 mile offshore and parallel with the point. A low point 3.5 miles WSW of the point has a rocky spit extending off it for a distance of 0.4 mile. About 3 miles farther W is the mouth of the **Rentapad River** (Ningut River) (17°49'S., 168°28'E.), which boats can only pass over the reef in its entrance. Mackenzie Hill, on the W side of the river, is a conspicuous landmark.

## Islands North of Efate Island

**6.21 Mataso Island** (Two Hills Island) (17°15'S., 168°26'E.) lies about 10 miles NE of the N extremity of Nguna Island (Ngouna Island). The island has two high hills and from a distance appear as two islands. The N hill has a sharp peak and is very prominent from offshore. A rock, 1.5 high, lies about 0.1 mile off the N extremity of the island, and a rock, 1.2m high, lies 0.1 mile off the E extremity of the island. Temporary anchorage may be taken in the bight on the S side of the island, in a depth of 26m, sand and coral, about 0.2 mile offshore. The anchorage is subjected to a swell that comes around the S point of the island. Etarik Rock (Wot Rock), an in-

accessible islet, lies about 1.5 miles E of the S end of Mataso Island.

**Tides—Currents.**—Currents run strongly in the vicinity of Matso Island and Etarik Rock, causing heavy tide rips at times N of the island and NW of the rock. Tidal currents S of the island set E, curving N between the island and the rock, but are greatly influenced by the wind.

**Makura Island** (17°08'S., 168°26'E.) lies about 6 miles N of Mataso Island. The island is steep-to all around, but there is anchorage off the W end of the island, in a depth of 20.1m, 0.2 mile from shore, with the tangents of the island bearing 063° and 137°. At the anchorage, the ebb current sets N with a maximum velocity of 1.5 knots at springs. The flood current off the W end of the island produces tide rips that have the appearance of shoal water.

Emae Island (Mai Island) lies about 5 miles NW of Makura Island. The island has three conspicuous hills, which at a distance appear as separate islands. The island is thickly wooded and several villages stand on its shores. Sesaki Anchorage, on the island's N coast, offers depths of 30m, sand, with Sesaki Point bearing 090°, 0.4 mile distant. This anchorage offers protection in winds from the NNE through E to SW.

**Pula Iwa Reef** (Cook Reef) (17°03'S., 168°16'E.) is a dangerous atoll lying 2.5 miles WNW of the W extremity of Emae Island. The outer edge of the reef dries in many places, and is steep-to except on its S side, where a spit, with a depth of 18.3m, extends nearly 0.5 mile offshore. The sea breaks heavily on the weather side, but the lee side is not well marked unless the daylight is favorable for seeing the discolored water.

## The Shepherd Islands

**6.22 The Shepherd Islands** (16°56'N., 168°36'E.), NE of Emae Island, are a volcanic group consisting of seven islands and several islets and rocks lying on a bank, with depths of less than 183m, extending SE from the SE extremity of Epi Island.

**Tongariki Island** (17°00'S., 168°38'E.), the S and second largest of the Shepherd Islands, has a length of more than 2 miles in an E-W direction, and a width of 0.8 mile. The island is steep-to, its shores are formed of boulders, volcanic rocks, and a few black sand beaches, the interior is thickly wooded to the summit. The white house of a mission station, on a ridge near the middle of the island, is conspicuous from the N.

**Anchorage.**—Anchorage may be obtained, in a depth of 22m during the prevailing wind, about 0.2 mile off the NW side of the island, with the SW extremity bearing 201° and the NW extremity bearing 052°.

Amora Rocks, SSE of the S extremity of Tongariki Island, are bare, jagged, and 34m high. The rocks are steep-to and there is a channel between them and the island, but it is not recommended because of the strong tidal current.

**Buninga Island** (17°02'S., 168°35'E.), the SW island of the group, is not over 0.8 mile in diameter. It is thickly covered with vegetation and has a rather flat summit, where a native village stands. Michelsen Rock, 0.3 mile E of the NE point of the island, should be given a wide berth, as it has a depth of 1.8m and is not easily detected. Falea Island lies 2 miles NNE of Buninga Island and is thickly wooded and uninhabited.

**Ewose Island** (Iwose Island) (16°57'S., 168°35'E.) lies 1.5 miles NW of Falea Island. Shoals, on which the sea often breaks, extend 0.1 mile from the E side of the island. A rock, awash, lies midway along the W side of the island, 90m offshore. Anchorage may be obtained, in a depth of 20m, off the NW side of the island, with the SW extremity bearing 142°, in line with the summit of Falea Island, and the NW extremity bearing 024°.

**6.23 Tongoa Island** (16°54'S., 168°34'E.), 1.5 miles N of Ewose Island, is the largest and most important of the Shepherd Islands. It is populous, partly cultivated, and wooded to its summit. From a distance, the island appears to consist of a group of mountains, most of which are cone-shaped, and a few table-topped. Tavani Akoma, a conspicuous mountain, is located on the E side of the island. Selebanga Church, about 0.5 mile NW of Tavani Akoma, is a conspicuous white building and a good landmark. Boiling Point, the N extremity of the island, is fronted by a ledge of rocks, covered at LW, to a distance of 136m, beyond which the water deepens quickly.

**Anchorage.**—The best anchorage off Tongoa Island is off the coast, in a depth of 18m, 0.2 mile W of the boat houses at Aiwos (Panita), with the bluff in line with the W extremity of Tevala Islet bearing 010°, and Nambwaia Rock in line with a point close S of the anchorage bearing 173°. Anchorage may also be obtained, in a depth of 20m, about 1 mile farther N.

**Vatu Miala** (16°52'S., 168°31'E.) lies almost 2 miles NW of the NW extremity of Tongoa Island. It is a remarkable, pillar-shaped, inaccessible rock. There are a few trees on its summit. From a distance it appears as a vessel under sail.

Laika Island, nearly 2 miles N of Boiling Point, is a small island with two hills. The steep cliffs that border the N, W, and S sides gradually diminish in height toward the E side, where there are two points enclosing a shallow bay. Laika Bank is a shoal patch lying a little more than 1 mile W of the island. The bank gives the appearance of a whale, and a sulphurous smell exists in this vicinity. Somerville Bank lies nearly midway between Boiling Point and Laika Island. Mid Rock, 3m high, lies near the middle of the S side of the bank and is a good mark. The channel N of Somerville Bank is subject to strong and irregular tidal currents and is not recommended. The channel S of the bank is wide and free of dangers.

**Tevala Islet** (16°49'S., 168°33'E.) is a small and almost inaccessible island located about 0.8 mile W of Laika Island. Its sides are steep cliffs and its summit is wooded. At 135m off the N side of the island there is a rock, nearly awash, upon which the sea generally breaks. It is not advisable to use the passage between Tevala Island and Laika Bank.

## Epi Island

**6.24 Epi Island** (16°44'N., 168°17'E.) lies with Cape Cone, its SE extremity, about 3.8 miles NW of Tongoa Island. Tavani Kutali, 833m high, is the highest and most conspicuous mountain on the island; it lies near the middle of the E side of the island. The island as a whole is very mountainous and wooded. The shores of the island consists of white sandy beaches and rocky points, bordered by a narrow reef. When approaching the island from the S, allowance should be made for the S sub-tropical current which is reported to set strongly toward the island.

**Cape Cone** (16°51'S., 168°29'E.) is a bold bluff that forms the SE extremity of Epi Island. The land back of the cape is low and from a distance the cape appears almost as an island. The channel between the cape and Vatu Miala is wide and free of dangers. Tide rips off the cape sometimes gives the impression of shoal water. There is a small bay on the W side of the cape, but landing is difficult and can only be effected when the sea is smooth.

Sakao Bay lies about 6.3 miles WNW of Cape Cone. The bay affords anchorage off the village of Sakao, in a depth of 12m, with the summit of Namuka Island bearing 215° and Sakao Point, in line with the S extremity of Epi Island, bearing 114°. The flood current at the anchorage sets WNW and the ebb sets SE. Anchorage may be obtained on a black sandy bottom off almost any part of the S coast of Epi Island.

**Malingi Point** (16°49'S., 168°16'E.) lies 5.5 miles W of Namuka Island. The point is low, wooded, and fringed by a reef that extends 0.15 mile from the shore. At 0.5 mile from the point is Buguta Cove, where a narrow passage between the reefs leads to a good landing place on a white sandy beach. At the mouth of the river at the head of the cove is Bumboko Village. Voambi Cove, 2 miles W of Malingi Point, affords temporary anchorage for small vessels, in a depth of 14.6m.

**6.25 Diamond Bay** (16°46'S., 168°10'E.) lies 3.5 miles WNW of Voambi Cove. At the head of the bay there is a conspicuous white house and a stone jetty with a crane at its head. A rock, 1.5m high, lies on the fringing reef at the head of the bay. A vessel should approach the rock, bearing 057°, and anchor in depths of from 18 to 27m. This anchorage is not recommended in a strong trade wind, as the swell sets in and the berth is too near the sharp point of the reef to be safe.

Nelson Bay lies 2 miles NNW of Diamond Bay. A conspicuous white house is situated 0.2 mile S of the mouth of a river at the head of the bay. Anchorage may be obtained, in depths of 12 to 14m, with the N bank of the river in line with a hill bearing 069°, and the highest of three rocks off Vatito Point bearing 159°. Landing can be effected at the river mouth, where a passage has been cut through the reef.

**Revolieu Bay** (16°43'S., 168°09'E.) lies about 1.5 miles N of the N entrance point of Nelson Bay. A black sandy beach is found at the S end of the bay, on which a prominent black rock can be seen. Good anchorage can be taken by vessels up to 60m in length, in 20m, with the black rock bearing 083° and Monduk Point bearing 145°. Anchorage, in 11m, is available with black rock bearing 067° and Monduk Point bearing 155°.

**Foreland Anchorage** (16°41'S., 168°08'E.) lies 3 miles NNW of Revolieu Bay. Cape Foreland, close S of the anchorage, shows a light. The anchorage consists of a small bay with a sandy beach. Miranda Rock has a small mushroomed-shaped head, with a depth of 3.6m. It is not easy to see as the water around it is often discolored. The S fall of the cliffs on the N side of the gorge at the head of the bay, bearing 111°, leads S of Miranda Rock and to the recommended anchorage. The anchor should be dropped as soon as a depth of 22m is obtained, as the depths decrease rapidly and the bottom farther in becomes foul. A vessel from the S can approach with the house at the head of the bay in line with a hill bearing 071°.

DeChauliac Bank, 13 miles W of Foreland Anchorage, is a coral bank with a least depth of 81m on the E side.

**6.26 Ringdove Bay** (16°38'S., 168°09'E.) lies about 4 miles NNE of Foreland Anchorage. The bay affords good protection from all but W winds. There is a prominent house which can easily be identified about midway between the entrance points. Dick Reef, which dries about 0.3m, lies close to the S entrance point to the bay. Vessels anchor ENE or S of the reef.

Lamen Island lies 1 mile SW of Ndouana Point, the NW extremity of Epi Island. The island is inhabited and densely wooded. There is a channel between Lamen Island and Ndouana Point. In this channel the tidal currents attain a velocity of 3 to 4 knots at springs, setting S and N.

**Allier Reef** (16°34'S., 168°06'E.), about 1.8 miles NW of Lamen Island, has a least depth of 3.6m; the reef breaks in heavy weather. There is a depth of 37m about 1.8 miles NW of Allier Reef.

**6.27 Moavi Point** (16°34'S., 168°11'E.), nearly 2 miles ENE of Ndouana Point, is easily recognized by two islets on the edge of the fringing reef. There is anchorage for small vessels in good weather on the W side of the point, where there is a break in the fringing reef. Vessels can anchor out of the tidal currents, in a depth of 14.6m, with Moavi Point bearing 080°.

**Big Bay** (Drummond Bay) (16°41'S., 168°16'E.) lies about 7.5 miles SE of Moavi Point. Two small coral patches, always marked by breakers, lie close together at about 0.2 mile off Ariel Point, the E point of the bay, and sunken rocks and reefs extend 0.2 mile offshore for a distance of 0.5 mile SW of the point. The bay affords fair anchorage, but there is always a considerable swell. The Bluff (Nitaui), 2.5 miles E of Big Bay, is a bold projecting headland. A schoolhouse on The Bluff is conspicuous and a good landmark. Little Bluff lies 3.5 miles SE of The Bluff.

**Sugarloaf Point** (16°46'S., 168°22'E.) is 6 miles ESE of Little Bluff. In the bay W of the promontory, of which the point is a part, there is reported to be fair anchorage. The recommended position is about 0.3 mile off the W end of a beach of rough boulders, in a depth of 22m, with the tangent of the rounded promontory of Sugarloaf Point bearing 062°.

## Islands North of Epi Island

**6.28 Paama Island** (16°28'S., 168°14'E.) lies about 4 miles N of Epi Island. The channel between the two islands is free of dangers. The island is volcanic and densely wooded. Close off the SE extremity of the island is a group of rocks, the largest of which is The Ninepin, which has a remarkable conical shape. There is a mission station, with a conspicuous boathouse, about 1.5 miles S of the N extremity of the island.

There is excellent anchorage off the middle of the W side of the island. The locality is known by a black sandy beach at the opening of a large valley, and by "Hole in the Wall," which is a small cave, half blocked by stones, located at the S end of the beach. The best anchorage is in 7 to 24m, with "Hole in the Wall" bearing 113° and the SW extremity of the island bearing 186°.

**Lopevi Island** (16°31'S., 168°21'E.) lies about 3 miles E of Paama Island and is also volcanic. The summit, which has a small crater, is nearly always in the clouds, but it forms an imposing sight when it is visible. The shores of the island are

steep-to and appear free of dangers. The nearest place a vessel could anchor, and only in good weather, would be about 3 miles S of the island on a patch of volcanic deposit, with a least depth of 53m.

**Ambrym Island** (16°15'S., 168°09'E.) is of mountainous aspect, densely wooded, and appears to be entirely volcanic. In the middle of the island there are several prominent peaks which surround an enormous crater. The summit, Mount Marum, is usually covered with clouds. Point Sud-Est, the E extremity of the island, is a bold cliffy bluff at the end of a range of hills that extends the full length of the island.

D'Estrees Point, the S extremity of the island, is sandy and fringed with trees. A bank, on the E side of the point, extends 1.25 miles from the nearest shore. The bank is composed of sand, and was reported to have less water than charted. An area extending 1.5 miles offshore for 3.5 miles each side of the point is considered dangerous to navigation because of submarine upheavals.

**Port Vato** (16°19'S., 168°02'E.) lies about 7 miles SW of D'Estrees Point. The port is 1.5 miles wide across the entrance and indents the coast to a distance of 0.8 mile. Sanasoup Point, the W entrance point to the port, has rocky ledges lying close offshore. In ordinary weather, there is fairly good anchorage off the E shore of the port, in 14.6m.

**Craig Point** (16°16'S., 167°55'E.) is fringed with a narrow ledge of rocks above water.

**Craig Cove** (16°15'S., 167°55'E.) lies about 0.8 mile N of Craig Point. The cove affords anchorage in depths of 33 to 46m. There is a fringing reef around the shores of the cove. A bank, with a depth of 29m, lies about 0.5 mile WNW of George Point, the SE point of the cove. Dip Point forms the W extremity of Ambrym Island, and lies about 0.5 mile NNW of Craig Cove. Lamb Point, nearly 1.3 miles N of Dip Point, is a low point formed by volcanic ash. The coast in this vicinity is fringed by shoals.

**Anchorage.**—At 1.3 miles E of Lamb Point there is an indentation in the shore, in back of which there is a lagoon with no opening to the sea. During the Southeast Trades, anchorage can be taken in the indentation off the lagoon, in a depth of 37m, volcanic sand. This berth is known as Dip Point Anchorage.

**6.29 Ranon Anchorage** (16°08'S., 168°07'E.) lies on the W side of the massive N projection of Ambrym Island, about 11 miles ENE of Dip Point Anchorage. There are a number of houses with red roofs which are conspicuous from seaward off the anchorage. Two beacons on the shore, in line bearing 139°, lead to the anchorage. A vessel can anchor, in 26 to 29m, about 0.2 mile offshore, with a conspicuous red boathouse close S of the range beacons bearing 146°, and the S end of the black cliffs bearing 072.5°. Vessels are recommended to use two anchors. A light stands on a point 0.5 mile S of the anchorage.

Rodd's Anchorage is 2 miles N of Ranon Anchorage and close S of the NW end of Ambrym Island. It may be recognized by a hut on a small sandy beach, the only white sandy beach in the vicinity. A reef extends 0.1 mile off Metanwar Point, on the N side of the anchorage, and has on its outer edge a rock that dries 1.2m. The anchorage should be approached with the N end of the white sandy beach bearing 090°.

Anchorage can be obtained, in a depth of 22m, with Metanwar Point bearing 040° and a white painted tree bearing 126°.

**North Point** (16°06'S., 168°09'E.), the N extremity of Ambrym Island, is fringed by a reef which extends up to 0.25 mile offshore. There is a mission station near North Point, where anchorage may be obtained, in depths of 22 to 27m, W of a black rock, 2.4m high, lying near the outer edge of the fringing reef. The tidal current here runs at the rate of 1 to 2 knots, so a good scope of anchor chain is necessary.

## Pentecost Island

**6.30 Pentecost Island** (15°45'N., 168°12'E.) is 34 miles long in a N-S direction and about 6 miles wide. It is densely wooded and a chain of mountains that extend three-fourths of its length attains its highest peak near the middle of the island. The only part of the island that has been surveyed is the section on the W coast between its S extremity and Naroboulou Point (Lifu Point), located 23 miles N. Along the W coast of the island the tidal currents are very weak. The flood current is believed to set N and the ebb current S. Selwyn Strait is a deep, clear passage between Ambrym Island and Pentecost Island. The strait is about 5.5 miles wide.

**Tree Rock Point** (Gousounransit Point) (15°58'S., 168°16'E.) forms the SE extremity of Pentecost Island. The coast N of the point has not been surveyed, but several high off-lying rocks were seen a few miles N. For nearly 4 miles SW of the point, the coast is bold and rocky.

**Martelli Bay** (16°00'S., 168°13'E.) lies about 4 miles SW of Tree Rock Point. The bay affords temporary anchorage to small vessels with local knowledge. Devil Point, the W entrance point of Martelli Bay, is a prominent reddish cliff which forms the SE extremity of the island.

Gousounonla Point (Fan Mara Mara Point) lies on the SW part of the island, about 3 miles NW of Devil Point. There are two conspicuous houses about 1.3 miles SE of the point. A prominent church with a tin roof can also be seen from offshore.

**Homo Bay** (15°57'S., 168°11'E.) is entered between Gousounonla Point and Dupuy Point. On the N corner of the bay there are several rocky patches, which dry, close off the beach. Mushroom Rock, 9.1m high, lies close off Dupuy Point. The house of a trader on the shore of the bay is a good land-mark.

**Anchorage.**—Anchorage may be obtained by vessels with local knowledge, in a depth of 14m, N of Mushroom Rock, about 0.2 mile offshore. The mouth of a small river lies abreast the anchorage. Good landing can be made on the beach in good weather.

**6.31 Truchy Point** (15°53'S., 168°10'E.) lies 3.5 miles N of Mushroom Rock. The point is sandy and free of reefs. Anchorage may be obtained by vessels with local knowledge off the point, in depths of 12 to 14m, with good holding ground. A mountain, about 2 miles E of the point, falls steeply on its SW side and is very conspicuous.

**Casuarina Point** (15°51'S., 168°10'E.) lies 1.5 miles N of Truchy Point and is named for the trees that grow on its shores. From this point N, a reef fringes the coast and extends about 0.1 mile offshore. Flat-topped mountains run parallel to the coast and slope steeply to the sea. About 4.5 miles N of the

point there is a waterfall visible through a cleft in the mounts between the bearings of 021° and 055°.

**Anchorage.**—Anchorage can be taken by vessels with local knowledge off the waterfall, in depths of 16 to 18m, sand. On the N side of the anchorage there is a very distinctive light-colored square patch on the rocks close to the water. Small vessels with local knowledge may obtain anchorage, in a depth of about 27m, in Melsisi Bay, about 6.5 miles N of Casuarina Point.

Whale Point, nearly 8 miles N of Casuarina Point, is a bluff rounded point which rises to a fairly prominent hill with a green patch on it.

**Steep Cliff Bay** (Batnavni Bay) (15°40'S., 168°07'E.) is entered between Sadac Point and Naroboulou Point (Lifu Point). The shores of the bay are fringed with reefs. There is a rocky patch, 135m from shore and 0.1 mile N from Toadstool Rock, which is 0.8 mile NNE of Sadac Point.

**Anchorage.**—There is good anchorage for one vessel at about the middle of the bay, in a depth of 22m, about 0.3 mile offshore.

**6.32 Mamurame Bay** (15°38'S., 168°07'E.) lies close NE of Naroboulou Point. A house stands about 0.8 mile N of the point. The shores of the bay are fringed by a reef 0.1 mile wide, and there is a rock in the NE part of the bay off a mission station.

**Anchorage.**—Anchorage may be obtained by vessels with local knowledge, in a depth of 22m, with 0.2 mile swinging room.

Loltong Bay lies about 6 miles NNE of Naroboulou Point. Anchorage may be taken off a mission church, in a depth of about 18m, but the anchorage is considered poor. The anchorage lies with the church bearing 150°, distant 0.5 mile offshore. A little farther inshore the holding ground is better.

**Vunmarama Anchorage** (Lataiva Anchorage) (15°29'S., 168°10'E.) lies about 1 mile SW of Tara Point, the N extremity of Pentecost Island. The anchorage affords a precarious steep-to berth, in a depth of about 22m. A mission house stands near the coast about 0.5 mile SSE of the N entrance of the anchorage. Foul ground is said to extend for about 0.5 mile offshore, and a bank, with depths of 18.3 to 22m, lies 0.5 mile offshore about 0.6 mile SW of the N entrance point.

The E coast of Pentecost Island has not been surveyed. It is fringed by a narrow reef which renders landing impossible nearly everywhere. At about the middle of the E side, a cove appears to offer anchorage, but it has not been examined.

## Maewo Island (Aurora Island) and Aoba Island (Oba Island)

**6.33 Maewo Island** (Aurora Island) (15°10'S., 168°10'E.) is the N island of the Vanuata group. The island is about 30 miles long, N-S, and about 3 miles wide. A mission station stands on the NE side of the island. About 0.5 mile E of the SE extremity is a small islet, with trees on its summit.

**Patteson Passage** (15°25'S., 168°09'E.) leads between the N end of Pentecost Island and the S end of Maewo Island. The passage is deep, free of dangers, and is about 2 miles wide between the 200m curve on either side. During strong SE winds, heavy swells and strong currents have been experienced in the passage.

**Narovorovo Anchorage** (15°12'S., 168°09'E.) is a bight on the W side of Maewo Island, nearly abreast the low land that separates the two high sections of the island. Rocks, from 1.5 to 3m high, front the N shore of the anchorage, and Bastion Rock, 10.7m high, lies close off the S extremity of the bight. A reef, which dries, lies 0.25 mile SW of Bastion Rock. Good anchorage may be obtained, in a depth of 22m, 0.35 mile W of a small river entrance.

**Betarara Anchorage** (15°10'S., 168°08'E.) lies about 5 miles N of Narovorovo Anchorage. There is anchorage, in a depth of about 14.6m, with **Double Rock** (15°10'S., 168°08'E.), 3m high, at the head of the bay, bearing 088°, distant 0.2 mile.

**Lakerere Anchorage** (15°01'S., 168°07'E.) lies about 5 miles N of Betarara Anchorage. A double waterfall, which is about 0.5 mile inland, is distinctive on nearing the anchorage, but is only visible when bearing between 077° and 090°, between which bearing a vessel is recommended to anchor. A vessel has anchored in 14.6m, good holding ground, with the waterfall bearing 088° and the left tangent of the shore bearing 353°.

**Aoba Island** (Oba Island) (15°23'S., 167°50'E.) lies about 8 miles SW of Maewo Island. The island is 22 miles long, SW-NW, and has a width of about 7 miles. It has a high summit which from a distance appears as a whale. A small crater near the summit often emits smoke. There are a number of anchorages on the NW coast. The flood current sets to the N and generally causes a choppy sea. In the channel between Aoba Island and Maewo Island there are strong currents and races.

Lolowai Bay and **Watounrowo Bay** (Vanihe Bay) (15°17'S., 167°57'E.), two bays near the N extremity of Aoba Island, are separated from each other by a narrow peninsula which terminates in yellow cliffs. Lolowai Bay, the E of the two bays, is nearly filled by a coral flat on which there are several black rocks above water. The bay has received only a casual examination, but a vessel can anchor outside the coral flat, in a depth of 22m, between the yellow cliffs and a rock, 1.8m high, and the E side of the entrance, with the extremity of the yellow cliff in line with the W point of Watounrowo Bay. This anchorage is dangerous during heavy weather, but during good weather is one of the best around the island.

In Watounrowo Bay, there is a copra station which is conspicuous from offshore. A white beach between black rocks can also be seen. The white beach is partly protected by small patches of coral, between which boats can pass and effect a landing, usually without difficulty.

**6.34 Bice road** (Languagua Road) (15°19'S., 167°55'E.) is an open anchorage about 2 miles SW of Watounrowo Bay. There is anchorage, in a depth of 18.3m, 0.15 mile off the reef, which fringes the coast to a distance of nearly 0.1 mile offshore. Two leading beacons, in line on a bearing of 188°, leads to the anchorage. Two miles W of Bice Road there is an anchorage, in 26m, off a mission station, which is visible from seaward, and another mission 0.75 mile E has a conspicuous red roof.

**Walourigi Anchorage** (15°20'S., 167°50'E.) lies about 5 miles NW of Bice Road, in about the middle of the W coast of Aoba Island. The holding ground is poor and there is a constant surf on the beach. A narrow rocky point projects from the black beach and divides it. A trading station stands W of this rocky

point, but is not readily seen from offshore. Miranda Reef is located about 0.5 mile NE of the anchorage, and about 0.8 miles offshore.

Lorni Bluff is located about 4 miles SW of Walourigi Anchorage. A conspicuous house and store can be seen from offshore. Vessels anchor in a suitable depth, with the house bearing 167°. There is a depth of 28m, 0.2 mile from the shore, the bottom then shoals quickly to 12.8m and then gradually to the beach.

**Laone Anchorage** (15°24'S., 167°46'E.), 6 miles SW from Walourigi Anchorage, is in about 26m, 0.2 mile off a small black sandy beach.

**Ambore Anchorage** (Ndui Ndui Anchorage) (15°23'S., 167°43'E.) is situated about 8 miles SW of Walourigi Anchorage. It may be recognized by a large white "A" painted on the cliff and two copra sheds on the beach. The anchorage is not considered good due to the poor holding ground. Vessels can anchor in 35m by steering for a conspicuous conical hill bearing 165°, located about 3 miles from the SW extremity of Aoba Island. As the coast is approached, steer for the first white beach NE of this hill. The anchorage is impracticable, with the least swell from the W. A stranded wreck is conspicuous 1 mile NW of Ambore Anchorage.

**Walaha** (15°26'S., 167°41'E.) is a trading station, 3.8 miles SW of Ambore Anchorage. It is not visible from offshore, but can be located by a small double hill behind it. Indifferent anchorage can be found about 0.1 mile from the shore. Devil Rock (Big Rock), off the SW end of the island, is a high columnar rock with a little foliage on its summit. Devil Rock forms the SW extremity of Aoba Island.

The SE side of Aoba Island appears to be free of dangers, but there is no part of this coast suitable for anchorage. The E coast consist mainly of sandy beaches. The NE extremity of the island is fringed by a reef which extends 0.5 mile offshore and should be given a wide berth.

## Malekoula Island

**6.35 Malekoula Island** (Malekula Island) (16°15'S., 167°30'E.), one of the larger islands of Vanuatu, lies about 15 miles W of Ambrym Island. There are numerous peaks and mountains, of which the highest is Mount Penot, 891m high, near the center of the island. The W coast of the island has only been cursorily surveyed.

## The Malekoula Islands—South Side

**6.36 The Maskelyne Islands** (16°32'S., 167°50'E.) lie close to the SE extremity of Malekoula Island. There are anchorages among the islands and an excellent passage through them with good range marks, forming a short cut for vessels rounding the S end of Malekoula Island. The outer islands of the group are comparatively low and difficult to see at night or in thick weather. Kulivu Island, Koivu Island, and several small islets, lie on a coral reef that extends 1 mile S of Koivu Island.

**Sakau Island** (16°30'S., 167°49'E.) lies N of Kulivu Island and is separated from it by East Channel. A pier and some houses stand at Mboa Noan Point, the NW extremity of Sakau Island, off which there is an anchorage.

There are four channels between the Maskelyne Islands. Northeast Channel leads between Sakau Island and the SE end of Malekoula Island. East Channel and Southwest Channel form an excellent deep-water passage through the group and have good range markers. South Channel is not recommended, as there are no good landmarks. The other three channels are deep in their fairways, and fairly clear of dangers.

Tidal currents run in the channels at a rate of 4 knots at springs in the narrower sections. Cross currents are encountered when leaving one channel to enter another. During periods of strong S winds, overfalls are formed at the SW entrance to the Southwest Channel.

**Anchorage.**—The only good anchorage in the Maskelyne Islands group is off the sandy beach S of Mboa Noan Point, at the W end of Sakau Island. A recommended position is in a depth of 27m, sand and coral, with Cape Doucere, on the N side of the E entrance of Northeast Channel, in line with Mboa Noan Point bearing 043°, and the SW extremity of Sakau Island bearing 167°. The depths are irregular here, but a vessel will be out of the tidal current and protected from E winds. This berth is too close to shore for other than small vessels.

A vessel without local knowledge should not attempt to anchor W of the detached shoals between the W end of Sakau Island and the main island which lies to the W, unless there is good light, or LW when all the reefs are visible.

**Cape Doucere** (16°28'S., 167°50'E.) is a low, flat, mangrove-covered point, with a coral boulder 3m high, lying on the fringing reef close S of it. The point lies on the N side of Northeast Channel and is the SE point of Malekoula Island. Gaspard Point lies 0.5 mile SW of Cape Doucere. On the W side of Gaspard Point is an inlet used mainly by small craft because of the barrier of sunken rocks in the fairway. A vessel could obtain anchorage close inside its entrance in 22m, in a position off the reef which extends about 0.3 mile SW from Gaspard Point. Caution should be used to avoid the reefs and Fairway Patches.

**6.37 Cook Bay** (16°29'S., 167°48'E.), a large indentation 1.5 miles SW of Gaspard Point, is not recommended as an anchorage. Serguey Point, on the SW side of Cook Bay, is fringed by mangroves and has a small hill back of it. South Point, 2.5 miles S of Serguey Point, is a bold bluff and backed at 1 mile NW by Mount Maskelyne.

**Lembru Cay** (16°33'S., 167°41'E.), about 2.8 miles W of South Point, is a small sand cay, 1m high, which stands on a coral reef nearly 1 mile long in a N-S direction. Vito Set lies 1.5 miles NW of Lembru Cay. Limaning, an islet similar to Vito, stands on a reef about midway between Vito and the shore to the NE.

Anchorage is a small bight in the coast about midway between South Point and Limban Point. Two beacons on the NE shore of the bight, in line bearing 032°, lead to an anchorage, in a depth of 31m, off the bight. Hambi Island, about 0.8 mile off the coast near Forlong Anchorage, is densely wooded. There is fair anchorage off the N side of Hambi Island, in a depth of 12m, with Mount Maskelyne in line with the N extremity of the island bearing 102° and the W extremity of the island bearing 212°.

**Lemua Island** (16°31'S., 167°35'E.), a wooded island, lies close off the Malekoula Island shore, about 4 miles W of Ham-

bi Island. There is an anchorage W of Lemua Island, which is indicated by two pairs of beacons in line bearing 080° and 160°, respectively.

**Port Ravallac** (16°31'S., 167°35'E.) is an anchorage between Lemua Island and the coast of Malekoula Island. Shoals extend from the Malekoula shore and narrow the available space for anchoring to about 0.1 mile. A shoal lies in the fairway N of Lemua Island, and vessels should therefore approach the anchorage by rounding the SW end of the island.

The anchorage is in a depth of 10m, sandy bottom, with the N extremity of Lemua Island in line bearing 072° with Mount Baraitova and with Tamyok Point bearing 333°.

**Ure Island** (Tomman Island) (16°35'S., 167°48'E.) lies about 0.8 mile off the SE extremity of Malekoula Island. The island is surrounded by a narrow fringing reef; the sea breaks heavily on its S and SE sides. A mass of coral patches lie off the NW end of the island and obstruct the W end of the passage between the island and Malekoula shore.

**Anchorage.**—The anchorage is in the area between the NE side of the island and the Malekoula shore. The best position is in a depth of 14 to 16m, with **Ayles Islet** (16°35'S., 167°29'E.) bearing 094°, distant about 0.3 mile. There is also anchorage 0.25 mile off the N extremity of Ure Island, in a depth of 22m, with the NE extremity of the island bearing 150°, and the NW extremity bearing 233°. Vessels bound to and from the anchorage should not attempt to pass N of Ure Island.

## Malekoula Island—West Coast

**6.38 Caroline Bay** (16°34'S., 167°28'E.) lies about 1.5 miles NNW of Ure Island. There is temporary anchorage in the bay, in depths of 14.6 to 18.3m. A vessel should approach the bay with Molembi Islet bearing 037°, and anchor when the two extremities of Malekoula Island, SE, bear about 120°.

**Southwest Bay** (16°29'S., 167°25'E.) lies about 7 miles NNW of Ure Island. A red sandstone bluff is prominent 1.25 miles ENE of Benehour Point, its S entrance point. A coral reef, which seldom dries but which usually can be seen, extends 1 mile N from Benehour Point. The sea breaks on the N end of this reef. Depths less than charted may exist on the reef extending NW from Benehour Point and the inshore coral reefs in Southwest Bay.

**Anchorage.**—When approaching Southwest Bay, pass not less than 1 mile N of **Ten Stick Islet** (16°29'S., 167°25'E.). Anchorage can be obtained, in 10 to 30m, within the shelter of the bay, good holding ground. The recommended anchorage is in 14.6m, with the lagoon entrance bearing 160°, distant 0.5 mile. Occasionally, a W wind blows for periods up to 2 weeks, making the anchorage untenable and landing difficult.

**Mounvet Point** (Hook Point) (16°25'S., 167°24'E.) lies 4 miles NNW of Southwest Bay. The point is low, but on each side of it are conspicuous gray cliffs. A reef, which breaks, extends about 0.5 mile SW and W from the point. Reef Point lies 4.5 miles NNW of Mounvet Point and is low and wooded. Dixon Reefs lie 1 mile off Reef Point. Pacey Point, 7 miles N of Reef Point, is the N end of the above series of cliffs, all about the same height and prominent from the W.

**6.39 Lamboubou Harbor** (16°12'S., 167°22'E.) is an inlet of coral formation with a least width of 0.2 mile, but the reefs

which fringe the shores reduce the fairway to 90m, 0.1 mile within the entrance. The bottom consists of coral and sand, and the holding ground is fairly good. The sea breaks continuously on the edges of the reefs at the entrance. Vessels that anchor here should be ready to leave at short notice.

The coast between Lamboubou Harbor and **FirstPoint** (Worharet Point) (16°10'S., 167°15'E.), about 8 miles WNW, forms a bight which has not been surveyed. First Point is low, rocky, and steep-to. Second Point, also low, is located about 3 miles NE of First Point.

**Elephant Point** (16°08'S., 167°10'E.), about 1.8 miles NNE of Second Point, is bold, conspicuous, and resembles an elephant in outline. Rock Point lies about 2 miles NNW of Elephant Point and is the W extremity of Malekoula Island. A conspicuous dark rock lies off Rock Point.

**Espiegle bay** (Pseukel Bay) (15°59'S., 167°11'E.) is located about 7 miles NNE of Rock Point. A vessel has anchored there in a depth of 22m, with the S entrance point of the bay bearing 178°, and a white patch on the S side of the gully at the head of the bay bearing 131°. Oleman Bay (Malua Bay), 0.75 miles S of Espiegle Bay, is an excellent small anchorage, with good holding ground. Wowo Bay, close W of North Cape, the N extremity of Malekoula Island, affords temporary anchorage, in a depth of 22m, sand and coral.

### Malekoula Island—Northeast Coast

**6.40 Vao Island** (15°54'S., 167°18'E.) is located about 5 miles ESE of North Cape. Vidil Point, the SW point of the island, is formed by a sandy spit. The whiteness of the sandy bottom makes the spit appear to extend farther than it actually does. Vessels can anchor about 0.2 mile W of Vidil Point, in 14.6 to 16.5m, with Laron Point open to Vidil Point, bearing 116°. The holding ground at this berth is reported to be poor.

**Bracey Patch** (15°54'S., 167°20'E.), 0.4 mile NE of Laron Point, is composed of sand and coral and has a least depth of 2.7m. It is not easy to see unless the light is favorable, but vessels can pass between the reef and the Malekoula Island shore by keeping 0.2 mile from the edge of the shore reef. Chingontara Point lies about 1.3 miles S of Bracey Patch.

Crydon Reef lies 1.75 miles SE of Bracey Patch and is composed of sand and coral, with a depth of 1.2m. It usually breaks at LW, but at other times is hard to see. The passage between the reef and Malekoula Island is clear, but there are no defined marks that can be used in navigating it.

**Atchin Island** (15°56'S., 167°20'E.) lies about 1 mile S of Croydon Reef. The island is fringed by a reef, which extends about 0.1 mile offshore, except at the SW extremity, which is sandy and steep-to. There is fair anchorage W of the island, in 37m, with Chingontara Point bearing 000°, and the N extremity of the island 105°.

Wala Island is located 2.5 miles SE of Atchin Island. The island is fringed by a reef 0.1 to 0.2 mile wide, except the S point, which is of sand. A mission station stands on an elevation on the SE side of the island. Good anchorage may be obtained close W of the S extremity of the island, where considerable depths extend close offshore. The best berth is in a depth of 31m, with the N end of Rano Island in line with the S extremity of Wala Island, bearing about 094°, and the NE extremity of Pinalum Point in line with the LW mark of the

sand spit on the W side of Rano Island, bearing about 136°. A vessel should not anchor in less than 31m.

**6.41 Rano Island** (15°59'S., 167°23'E.) is composed of upraised coral and is densely wooded. The N and E sides of the island are fringed by a reef about 0.2 mile wide. There is no anchorage off the island. Pinalum Point lies about 1.5 miles SE of Rano Island, and is bold and cliffy. A reef extends 0.2 mile from its N side.

**Norsup Bay** (16°02'S., 167°24'E.), 3 miles SSW of Pinalum Point, is entered between Norsup Island and a point about 1.5 miles NNW. The outer part of the bay is deep, with depths of 73 to 110m abreast the island, but from the center of the bay abreast the SW tip of the island to the head of the bay, 0.75 mile SW, the bottom shoals from 46m to 11m, 0.2 mile off the head of the bay.

**Anchorage.**—Good anchorage can be found, on the axis of the bay, in suitable depths in this area. Larger ships are recommended to anchor in the center of the bay in 40m, with Tautu Point open of the S tip of Norsup Island; this provides about 0.3 mile swinging room. On the point nearest to Norsup Island there is a hospital and school; a boat jetty is in front of the school. These are all good landmarks when anchoring.

**Uripiv Island** (16°04'S., 167°26'E.), on the E side of the entrance to Port Stanley, lies 1.5 miles E of Tautu Point. The island is wooded and has a white sandy beach. A conspicuous house stands on the SW shore, and there are several villages on the island. Uri Island, is located 0.75 mile S of Uripiv Island. The two above islands are separated by a deep channel. A village stands on the E side of the island and can be seen from offshore. The W end of Uri Island is covered with mangroves and has a white sandy point from which reefs extend 0.15 mile. On the reef on the NE side is a conspicuous coral boulder 3.6m high.

**6.42 Port Stanley** (16°04'S., 167°25'E.) is a bay 5.5 miles long in a NW-SE direction, which is protected on the E side by a peninsula and Uripiv Island and Uri Island. The prevailing depths are too great for the port to be considered a good harbor, but there are several places anchorage can be obtained. Tautu Point, on which a village stands, is the W entrance point to Port Stanley. Good Bay indents the shore S of this point. The W shore of Good Bay to the head of Port Stanley is fringed with mangroves and backed by wooded hills. The S part of the port is mainly obstructed by reefs, and the eye is the only guide in navigating it.

**Anchorage.**—A recommended berth in Port Stanley is 0.15 mile off the S shore of Uri Island on a small patch of sand and coral, in a depth of 22m, with the extremities of the island bearing 063° and 319°. There is also anchorage in Good Bay, near its head, in depths of 18 to 26m.

Brigstocke Bay is a small indentation on the W side of **Taio Point** (16°07'S., 167°29'E.). The reefs are steep-to in the outer part of the bay, and small vessels may find temporary anchorage. An inner extension of the bay is shallow and obstructed by coral heads.

**Bushmans Bay** (16°09'S., 167°30'E.) is 1 mile wide and provides a convenient and safe anchorage. Vessels may take anchorage anywhere near the head of the bay, but it is not advisable to go too close in the SE part, as the water shoals rather

quickly to a reef which does not usually show. The best berth is opposite a small stream at the middle of the beach, in a depth of 18.3m, with Wreck Point bearing 099° and the W side of the entrance bearing 018°.

Crab Bay, on the W side of Wreck Point, is nearly enclosed on the W by the extensive Mary Eliza Reef, which dries 0.6 to 0.9m. The bay is mainly obstructed by reefs, but has a nice snug and quiet anchorage in the middle. The entrance to the bay is only about 0.2 mile wide. The eye is the only guide for approaching the anchorage, as there are no good marks, but there are no difficulties in good weather. Vessels anchor about 0.3 mile within the entrance in 26m, with the N extremity of Wreck Point bearing 099° and with Sandy Point, the W extremity of the same peninsula, bearing 156°. Small craft can find good shelter in the SE part of the bay.

**Sarmette Bay** (16°11'S., 167°33'E.) lies about 2 miles SSE of Wreck Point. Reefs fringe both sides of the bay, but are absent from the head of the bay. A 2.7m shoal lies about 0.4 mile SE of the NW entrance point to the bay. A rock, 2.4m high, lies close off the SE entrance point.

**Anchorage.**—Anchorage may be obtained near the middle of the bay, in depths of 11 to 18m, 0.3 mile offshore. Vessel should not anchor in less than 11m and care should be taken to avoid the detached shoal. Two lights, in line bearing 233°, are shown whenever vessels are expected. They stand on the W side of the bay.

**6.43 McNabb Bay** (16°13'S., 167°34'E.) is a bight in the coast about 1 mile wide at its entrance, and lies 1.5 miles SE of Sarmette Bay. The shore reef ends abruptly on each side within the bay, and anchorage may be obtained, in depths of 22 to 24m, near the middle, 0.2 mile offshore. The depths are considerable outside the anchorage and there is usually a heavy swell during the SE trade winds.

**Pangkumu Bay** (16°16'S., 167°39'E.) lies about 5 miles SE of McNabb Bay and affords excellent protection and smooth water during the prevailing trade wind. A mission house stands at the head of the bay and makes a good landmark when approaching the anchorage. Close E of the mission house is a steep reddish bluff. The best anchorage is N of the mission house, in depths of 12 to 14m, with a large black boulder on the reef in line with the mission house bearing 179°, and two prominent coral boulders on the reef towards Bongnaun Point in line bearing 069°.

**Tesman Bay** (16°18'S., 167°40'E.) is entered between the NW entrance point of Assen Bay and Bongnaun Point. It is an excellent anchorage with N or W winds, but during the prevailing trades there is considerable swell. Anchorage may be obtained about 0.4 mile from the head of the bay, in 12m.

**Mansa Reef** (16°18'S., 167°43'E.) consists of several dangerous patches of coral extending over a distance of 1 mile, and lies about 2.5 miles SE of Bongnaun Point. The least depth found over this danger was 1.8m, but as there are living coral heads, less water may be found. The shoal is usually distinguishable by the light green color of the water. Winsor Patch lies about 1 mile SE of Bongnaun Point, and has a depth of 7m.

Assen Bay affords fairly good anchorage, in a depth of about 7m, protected from the usual trade winds. Mount Leggatt, 2.5 miles SW of the bay, is a good landmark. The mountain has a

conspicuous dome-shaped summit and is the highest in the area.

**6.44 Aulua Bay** (16°19'S., 167°43'E.) is a slight recession in the coast and is entirely open to the NE. A drying reef extends 0.4 mile from the W shore of the bay and has near its outer end a coral boulder 1.8m high. Near the E end of the bay is a white cliff that is conspicuous and a good landmark. There is a mission station at the head of the bay.

**Anchorage.**—Good anchorage may be obtained off the mission house in a depth of 18m, with the mission bearing 190°, distant 0.3 mile, and the white cliff bearing 142°.

Sasun Bay (Banan Bay), entered between Bangon Point and a point about 1.3 miles W, provides excellent shelter from the Southeast Trades, but is exposed to winds from NW and NE. A coral shoal, with a least depth of 6.1m, lies in the middle of the bay. Anchorage in SE winds can be found about 0.6 mile WSW of Bangon Point, in a depth of about 13.7m, but there is no reliable lead into the bay and care must be taken to avoid the dangers on the E side of the bay.

**False Bay** (16°24'S., 167°47'E.) lies on the N side of Ashuk Head, the W entrance point to Port Sandwich. Coral reefs extend about 0.1 mile from the shore on each side, but the head of the bay is clear. Crested Hill, 0.5 mile back of the NW shore of the bay, shows well from all directions.

**Port Sandwich** (16°26'S., 167°47'E.) is entered between Lamap Point and Ashuk Head. The entrance is a little more than 0.5 mile wide between the reefs; access is easy in any weather. The harbor is one of the best in Vanuatu, as it affords protection from all winds and has good holding ground.

Lamap village is situated close S of Lamap Point. A light is shown about 0.2 mile SE of the N extremity of Lamap Point. A reef fringes the shore off this point and along the E shore of the port to Planter Point. The reef off Lamap Point, which dries, is marked by the sea breaking on it, even in the calmest weather.

Ashuk Head, on the W side of the entrance to the port, is a prominent bluff and wooded. The coast SSW of the head consists of coral cliffs and a sandy beach, with a few scattered mangroves.

**Gedge Patches** (16°26'S., 167°47'E.), having several coral heads covered with depths of 1.8 to 2.7m, lie on the E side of the fairway about 0.5 mile N of Planter Point. A vessel should not attempt to pass between the patches and the shore reef on the E side of the harbor. The N and W sides of Gedge Patches are marked by buoys.

**Anchorage.**—Middle Bay, on the W side of the port, affords anchorage, in a depth of 26m, with Planters Point bearing 177° and Deep Point in line with the NW edge of the reef which extends from Lamap Point bearing 065°. There are two anchorages off Planters Point, which can best be seen on the chart.

## Espiritu Santo Island

**6.45 Espiritu Santo Island** (15°20'S., 166°55'E.), known locally as Santo Island, is the largest of the Vanuatu group. The island is very mountainous on its S and W side. A group of islands lies fairly close off its SE extremity.

**Bougainville Strait** (15°49'S., 167°12'E.) separates Espiritu Santo Island from Malekoule Island. The strait is deep and free of dangers. Pasco Bank, with a least depth of 24m, lies 3.75

miles NNW of North Cape, the N extremity of Malekoule Island.

**Malo Island** (15°41'S., 167°10'E.) lies off the SE coast of Espiritu Santo, and is separated from it by a channel 1.8 miles wide. The island is composed of coral, 91 to 122m high, and is densely wooded. Malo Peak, 341m high, lies near the NW end of the island and is prominent from all directions except from the SE.

**Abnetare** (15°39'S., 167°05'E.) lies near the NW extremity of the island and is the site of a mission station. Vessels can anchor off the mission station, in 18 to 20m, about 0.2 mile from the shore reef, with the NW extremity of Malo Island bearing 063°, and Malo Peak in line with the mission station bearing 123°. There is always some swell here; the tidal currents have a velocity of about 1 knot, with the flood setting S and the ebb setting N.

The Malokilikili Islets, about 31m high, lie E and NE of **Lachaise Point** (15°43'S., 167°14'E.), on the E side of Malo Island. The passage between the islets and Malo Island is obstructed by numerous reefs and can only be used by boats.

**Anchorage.**—Anchorage, with good protection from all but N winds, may be obtained NW of North Malokilikili Islet, in a depth of 12m, sand, with the island's N point bearing 090°, 0.4 mile distant.

**6.46 Bruat Channel** (15°37'S., 167°10'E.) separates the N side of Malo Island from the S side of Aore Island. The channel is nearly 10 miles long and has a width in the fairway of 0.3 to 1.5 miles. Suchun Lagre Island lies about 3.5 miles W of Ned Point, the NE extremity of Malo Island, and is separated from the N shore of Malo Island by a boat passage.

**Anchorage.**—Good anchorage can be found about 0.4 mile E of Suchun Lagre Island, in depths of 16 to 18m, 0.4 mile offshore, and outside the strong tidal currents setting through the channel.

Ratoua Island, lying N of Suchun Lagre Island, is densely wooded and about 37m high. Between it and Aore Island is a narrow boat channel, the E end of which dries. Guichen Reef, from 0.1 to 0.3 mile SSW of the SW extremity of Ratoua Island, is a dangerous group of coral heads, with a depth of 1.8m. This reef narrows the fairway in Bruat Channel to about 0.3 mile. The tidal currents across the reef attain a velocity of 5 to 6 knots.

**Port Lautour** (15°37'S., 167°10'E.) is sheltered from all except W winds and is out of the tidal current; it lies on the W side of Ratoua Island.

**Anchorage.**—Anchorage can be taken, in a depth of about 26m, with the S extremity of Wekesa Island in line with the N extremity of Araki Island, about 11 miles W, bearing 268°. Caution should be used when anchoring as there is foul ground extending 0.2 mile from the N shore of Ratoua Island.

Turtle Island (Wekesa Island), 0.4 mile off the N side of Bruat Channel and 1.8 miles W of Ratoua Island, is small and surmounted by bushes. It is surrounded by a reef that extends W of the island in a long narrow spit for a distance of nearly 0.4 mile. Vessels should not pass N of the island unless the light is favorable, as the passage is obstructed by foul ground that extends 0.3 mile from the N shore.

**6.47 Aore Island** (15°34'S., 167°10'E.) lies between Malo Island and the SE shore of Espiritu Santo. Its NW side forms the SE side of Segond Canal. Its E shore is indented by two bays which do not afford good shelter or anchorage. A light is shown from the NE point of the island. A pilot station is situated about 1 mile E of the light.

Tutuba Island, 1.5 miles E of Aore Island, is of a formation similar to Aore Island, mainly coral. There are several villages about the island. A fringing reef encircles the island except at the SW extremity, which terminates in a steep-to sandy spit. There are moderate depths on the E side of the island and the W side is steep-to. A light is shown 2 miles S of its N end.

**Bogacio Island** (15°35'S., 167°14'E.) lies in the middle of the channel between the SW part of Tutuba Island and the E side of Aore Island. The channel on either side of the island is clear and deep. There is anchorage for one small vessel between Bogacio Island and Tutuba Island, in a depth of 31.1m.

Segond Channel, separating Aore Island from Espiritu Santo Island, is a much-used deep-water channel. On the N shore of the channel lies the port of Luganville.

### Luganville (Santo) (15°31'S., 167°10'E.)

World Port Index No. 57200

**6.48** Luganville is the administrative and commercial center of Espiritu Santo Island, and is a port of entry. The largest vessel to use the port was 230m in length. The port handles both wet and dry cargoes, importing general goods and oils and exporting fish products and copra.

**Winds—Weather.**—The prevailing wind here is from the SE, but follows a regular seasonal pattern. In winter, light airs exist, freshening rapidly to a maximum of 20 knots at about 0800. During the afternoon the winds generally die out. In the summer, the pattern is less regular, with the wind SE in the morning but frequently backing to the E in the afternoon. Occasionally, for a period of several days the wind will blow from the SW, force 3 to 5. Winds seldom blow greater than 30 knots other than during a hurricane.

**Tides—Currents.**—The tidal rise at MHHW is 1.2m, while the rise at MLLW is 0.3m.

Tidal currents within Segond Channel set W on the flood and E on the ebb, attaining rates up to 2 knots. Along the channel's N shore, currents are stronger. Off Main Wharf, the flood attains rates of 2.5 knots with fresh E winds. West of Main Wharf, this current alters to the SW, rounding the spit off the river SW of the wharf. The ebb is weaker, attaining rates of 1.5 knots with SW winds, and is further weakened by strong and persistent trade winds.

Tidal currents in the W portion of Segond Channel attain rates of 3.5 knots, with cross currents and eddies having been reported, especially during the monsoon when the rivers are full.

**Depths—Limitations.**—Segond Channel is deep and free of dangers in its NE portion, but the SW end of the channel is restricted to a width of about 0.4 mile by dangers extending from both shores. The channel at this end has a least charted depth of 12.8m.

Black Rock Point should be given a wide berth due to the 8.5m patch that was reported to lie 0.3 mile SE of the point.

The LPG terminal, situated 1.3 miles NE of Black Rock Point, will accommodate vessels up to 80m in length. Main Wharf, 2.3 miles NW of Black Rock Point, handles container, ro-ro, and tank vessels. The wharf has an alongside depth of 10.5m and will accommodate vessels up to 200m in length.

BP Terminal, 1.8 miles SW of Main Wharf, regularly berths vessels up to 200m in length.

**Aspect.**—The shores of Segond Channel are low, with trees reaching to the water's edge. Several coconut plantations may also be seen here.

A conspicuous building is situated 1.3 miles N of Black Rock Point, 1.3 miles WNW of which is situated four tanks. A flagstaff stands W of Main Wharf. Tanks and a radio mast are situated 0.1 mile N and 0.3 mile S, respectively, of BP Terminal.

**Pilotage.**—Pilotage is compulsory for vessels over 60m in length and is available 24 hours.

Vessels should send their ETA and request for pilotage through the harbormaster, or the vessel's agent, at least 24 hours in advance. The pilot office is open from 0730 to 1130 and from 1315 to 1630.

Vessels board the pilot from a white vessel 1 mile E of Black Rock Point, or 1 mile S of **Bridgestock Point** (15°36'S., 167°06'E.) by prior arrangement. By night, the pilot vessel displays a red flashing light.

**Regulations.**—Visiting yachts are required to clear customs on arrival, landing on a jetty W of the main wharf.

Vessels should send their ETA and pratique requests to the harbormaster through Port Villa Radio (YJM). The pilot office may be contacted via VHF channel 16, while the pilot vessel may be raised on VHF channel 16, 2182 kHz, or by radiotelegraphy. The vessel's call sign is "Pilot Vessel Moli Vatur."

**Signals.**—Current signals are shown from main wharf, as follows:

1. Flood current—yellow flag
2. Ebb current—red flag.

**Anchorage.**—The recommended anchorage, sheltered from SE winds, is in a depth of 25m, good holding ground, 1.5 miles SW of Main Wharf. This berth is also sheltered from the major portion of the flood current.

Anchorage is also available in Luganville Bay, 0.5 mile SW of the W entrance point of the river located W of Main Wharf and 0.4 mile offshore. This berth offers depths of 17m, sand and mud. Another berth is available, in a depth 44m, 0.2 mile further out.

Anchorage can be taken 0.5 mile NNE of **Belchif Point** (15°33'S., 167°08'E.), in a depth of 29m, yellow mud bottom.

Dart Anchorage, S of Belchif Point, and the E entrance point of the Renee River, offers anchorage, in a depth of 18m, bottom quality not stated. The berths are situated about 0.2 mile and 0.4 mile SE of Belchif Point.

A Prohibited Anchorage lies off Main Wharf; the pilot should be consulted for details.

**Directions.**—Large vessels normally approach Segond Channel from the E. Lights are shown from Ile Toutouba, Black Rock Point, and a position about 1.8 miles NE of Black Rock Point.

The W entrance to Segond Channel, S of Brigstocke Point, and the fairways from seaward to it should only be used in

daylight, fair weather, and only by vessels with local knowledge.

Reports have recommended berthing port side-to, with the starboard anchor out. The approach to Main Wharf has been reported to be difficult, as the tidal current occasionally sets NW onto the wharf.

Dangers to be avoided when approaching the berths of the port include Pate Bidal, a shoal with a depth of 0.3m lying 0.5 mile WSW of Main Wharf. Caution is advised as Pate Bidal has been reported to have extended 0.2 mile WSW. Guyon Reef, which dries, lies just N of the BP Terminal and is marked by a beacon.

## Espiritu Santo Island—South Side

**6.49 Baldwin Cove** (15°35'S., 167°01'E.) lies about 3 miles WNW of Brigstocke Point. The cove is sheltered by a number of islets and reefs. Square Hill, a conspicuous, flat topped hill, lies 1.25 miles NW of the head of the cove. Venui Island, on the E side of the cove, is separated from Espiritu Santo by a passage which is deep and clear of dangers except for a 9.1m patch about 135m offshore on the E side of the S entrance.

**Tangice Island** (15°35'S., 167°01'E.) lies on the W side of the cove, with Carlo Islet 0.1 mile off its SE point. The islet is wooded and surrounded by reefs and shoals that project 135m from it.

Baldwin Cove provides anchorage for one small vessel. The recommended position is 0.3 mile NW of Venui Island and 0.15 mile from the E shore of the cove in a depth of 18.3m, sand and coral. There are probably other anchorages in the cove, but they cannot be recommended without further exploration.

**Ulilapa Island** (15°37'S., 167°01'E.), 41m high and wooded, lies about 1 mile S of Tangice Island. Tubana Island, similar in appearance to Ulilapa Island, is smaller and lies 0.35 mile off the W end of Ulilapa Island. Both of these islands are uninhabited. There is a deep channel between these islands and Espiritu Santo.

Araki Island (Hat Island), a remarkable flat-topped island, lies 3.25 miles WSW of Tubana Island. The island shows up against the land behind it and is a distinctive object from the South. Elia Island, 2 miles NE of Araki Island, is wooded and only 0.1 mile in diameter.

**Tangoa Island** (15°35'S., 166°59'E.) lies close off the shore at Annand Point, which is a sandy spit, identified by some conspicuous huts situated about 2 miles W of Baldwin Cove. A reef, with a small, black, drying rock on its outer edge, extends 90m off the NE side of the island.

**6.50 Tangoa Anchorage** (15°35'S., 166°59'E.) lies N of Tangoa Island, on either side of Annand Point. The best anchorage is W of the point, in 22m, sand and mud, with the extremities of Tangoa Island bearing 231° and 108°. The tidal current at the anchorage sets E and W, turning about 1 to 2 hours after HW and LW.

Powell Point, located about 3 miles W of Araki Island, is steep and rocky, and has a small bare, rocky islet, about 0.3 mile off it. On the N side of the point there is a small cove with an islet close to shore, behind which is a trading station. West of Powell Point there is a bay about 2.5 miles wide at its entrance, with a beach

of large pebbles through which two streams discharge. Landing can be effected at the E end of the beach.

**South Cape** (15°40'S., 166°50'E.), about 4.5 miles SW of Powell Point, is the S part of a bold promontory that marks the W termination of the S coast of Espiritu Santo. The extensive seaward face of the promontory is clear of off-lying dangers and is steep-to except on its SW point, where a fringing reef projects 0.1 mile. Nub Hill, 260m high, lies behind South Cape and is a distinctive object from the SE.

### Espiritu Santo Island—West Side

**6.51 Cape Lisburn** (Mataabe) (15°38'S., 166°46'E.) lies 4.5 miles NW of South Cape and is composed of coral cliffs. There are a number of villages about 1 mile SE of the cape. A rock, 0.9m high, lies close W of the cape. There is anchorage for small vessels, about 0.3 mile offshore, with good shelter from E winds, in a depth of 12.8m, 0.65 mile NE of the cape. Large vessels should anchor farther out. A prominent object seen from the anchorage is Murder Rock, 3.5 miles N of Cape Lisburn.

**Remarkable Point** (15°23'S., 166°39'E.), about 17 miles NNW of Cape Lisburn, is low, but is dominated by two peaks over 610m high close back of it. An area of shoal water extends W and NW for a distance of 7 miles off Remarkable Point; depths are unknown but dangers to navigation lie 6 miles WNW and 1.25 miles NW of Remarkable Point.

**Nogogu** (Nogougou) (14°55'S., 166°34'E.) is a village situated 28.5 miles N of Remarkable Point. There is a mission station at the village where a conspicuous flagstaff can be seen. Two miles S of Nogogu there is a remarkable black cliff with a white patch. There is anchorage, in a depth of 24m, about 0.4 mile offshore, W of a conspicuous cliff close S of the village. Tetawoia Reef, N of the village, extends 1.5 miles from the shore and has a depth of 6.4m at its outer end.

Vessels can anchor off **Pwelum Point** (14°55'S., 166°33'E.), about 1 mile N of Nogogu, in a depth of 12m, 0.1 mile from the shore, with the mission church bearing 133°.

The Tasselmann Islets, consisting of a group of rocks with foul ground extending seaward from them to deep water nearly 1 mile offshore, lie close S of Ere Point, located about 6 miles NNW of Nogogu village. Vairai Bay, 14 miles N of Nogogu, is a small indentation where coastal vessels anchor.

**6.52 Cape Cumberland** (14°38'S., 166°37'E.), the N extremity of Espiritu Santo, extends from the high land in a low tongue for about 2 miles. In the vicinity of the cape, ruins of buildings of unknown origin and of considerable size are scattered over a 3 mile area. The same type of ruins can be found at a village about 5 miles from the cape. Heavy tide-rips occur N of the cape.

A depth of 24m was reported 7 miles NW of Cape Cumberland; a depth of 31m was reported to lie about 3.5 miles N of the cape. A shoal, with a depth of 11m, was reported to lie about 15.8 miles ENE of the cape.

St. Philip and St. James Bay (Big Bay) occupies most of the entire N side of Espiritu Santo. The peninsula on the W side consists of mountain ridges, varying in height up to 1,220m. The hills at the head of the bay form a plateau, about 245m high, which decreases in height toward Cape Quiros, at the N

end of the E shore of the bay. The bay is deep, but several patches of reefs and shoals extend from its shores in places.

**Wora Bay** (14°48'S., 166°44'E.), 13 miles SE of Cape Cumberland, affords temporary anchorage during offshore winds, in a depth of 73m, 0.25 mile from shore. A red patch on a hill, bearing 200°, makes a good mark when approaching the anchorage. A conspicuous green patch on the shore, 5.5 miles S of Wora, forms a good landmark.

**Ajuga Point** (15°02'S., 166°48'E.), on the W side of St. Philip and St. James Bay, is surrounded by a reef that projects nearly 1 mile seaward. Terebiu mission station, 1.75 miles S of the point, has a good anchorage. There are conspicuous white spots on the shore 2 and 3 miles SW of Terebiu.

**Talomako Anchorage** (15°09'S., 166°50'E.) is situated near the head of the bay on the W side. The recommended anchorage is in a depth of 22m, sand, with Cape de Touar, 3 miles SW of Cape Quiros, bearing 037°, and a conspicuous rock close NE of the nearby mission station, bearing 264°.

**De La Table Anchorage** (15°09'S., 166°56'E.) is at the E end of the head of the bay. Vessels anchor, in depths of 16.5 to 20.1m, good holding ground, about 0.5 mile NW of a rivulet in the SE corner of the bay. There is usually some surf on the beach.

Cape Quiros, the NE extremity of Espiritu Santo, is low and wooded. A conspicuous white patch exists on the coast, about 0.8 mile SE of the cape. A strong in-draft into the bay has been reported in the vicinity of the cape. This S set was experienced 15 miles to the N of the cape.

### Espiritu Santo Island—East Side

**6.53 Sakao Island** (Ladhi Island) (14°57'S., 167°07'E.) lies about 5 miles ESE of Cape Quiros. The island is wooded and has an abrupt bluff on its N side. The channel between the island and the shore is deep, but is subject to strong eddies.

Shoal patches, with a least depth of 22m, lie between 4.5 miles and 7 miles SE of Ladhi Island.

Thion Island (Dolphin Island) lies about 4.5 miles SSW of Sakau Island. From some angles the island appears to have a flat top, but from the SW its profile resembles a dolphin's head. A reef extends a short distance from the NW part of the island, and a bank, with a depth of 12.8m, lies 0.2 mile W of the same point. Bucephale Islet, small and wooded, lies close off the SW side of Thion Island.

**Port Olry** (15°02'S., 167°04'E.) is formed by Thion Island and an indentation of the coast to the W. The entrance to the port is N of Thion Island, and the anchorage is in the clear area, about 0.4 mile in diameter, between the island and the shore to the W. The inner section of the port is blocked by a reef having numerous coral heads through which there is a possible passage for light draft vessels. Vessels may obtain anchorage, in 26m, about 0.3 mile W of Bucephale Islet, with the SW extremity of Thion Island bearing 145°.

**6.54 Hog Harbor** (15°08'S., 167°06'E.) ([World Port Index No. 57170](#)) and Lonock Bay, which is the inner part of the harbor, lies about 6 miles S of Olry Island. Ladhu Island, also known as Elephant Island, lies off the harbor and may be passed on either side when entering the bay. Anderson Reef, the position of which is approximate, lies 2 miles NW of the W

extremity of Ladhu Island. Malviror Reef and Moror Reef lie off the E side of the harbor.

There is a sheltered anchorage, about 0.3 mile from shore at the head of Lonock Bay, in a depth of 25.6m, with Farquhar Point, on the W side of the bay, bearing about 280°.

**Reguin Bay** (Shark Bay) (15°16'S., 167°09'E.), about 7 miles S of Hog Harbor, lies inside of the W side of Ladhro (Pilot) Island. The bay affords anchorage, in a depth of 29m, irregular bottom, with two leading beacons situated at the head of the bay bearing 284°. The anchorage is sheltered by Ladhro Island. Pilotin Islet lies about 1.3 miles SE of Ladhro Island, with a passage between it and the coast.

**6.55 Turtle Bay** (15°21'S., 167°11'E.) ([World Port Index No. 57180](#)) lies about 5.5 miles S of Reguin Bay. The bay affords anchorage, in a depth of 18.3m. Henaff Point, the N entrance point to Turtle Bay, shows a beacon N and S of the point, and two buoys in line off the point. There is a wharf and a beacon on the W side of the bay; another beacon stands on the NW side of the head of the bay. A dangerous coral head lies close E of the wharf.

Tambo Passage is the deep and clear passage to Turtle Bay. A fairway through the middle of the passage has been wire dragged to a depth of 16.7m. To enter Turtle Bay by way of Tambo Passage, permission must be obtained from the local authorities, and a pilot must be boarded.

On the S side of the passage is Turtle Islet (Mailila Islet), from which reefs extend 0.25 mile to the N. Mafea Island, densely wooded, lies about 1 mile SSE of Turtle Islet. A number of tall palm trees and a beacon stand on the W coast of Mafea Island. Several islets, connected by reefs and marked by beacons and buoys, lie close to the Espiritu Santo shore and can best be seen on the chart.

**Ais Island** (Aesi Island) (15°26'S., 167°15'E.), 3 miles long in a N-S direction, low, and wooded, lies between Mafea Island on the N and Palikoulo Island to the South. Ais Island and Mafea Island are separated by Undine Passage, which is deep and clear of dangers. Ais Island and Palikoulo Island are separated by Diamond Passage, which is also deep and free of dangers. The fairways through both of these passages has been wire dragged to a depth of 16.7m. Palikoulo Island, which shows a light, is connected to the Palikoulo Peninsula by a causeway.

Anchorage may be obtained off the SW side of Ais Island, sheltered from winds between the N and E, in depths of 29 to 40m, with the center of the village bearing 070° and Palikoulo Point bearing 166°. A shoal, with a depth of 8.2m, lies about 0.1 mile NNE of the anchorage. The fairway to the anchorage is marked by buoys and can best be seen on the chart.

**Surundu Bay** (15°28'S., 167°13'E.) indents the shore of Espiritu Santo W of the S end of Ais Island. The bay has numerous reefs and coral patches, but affords good anchorage to small craft. The entrance, known as Cassiopee Passage, has a least depth of 2.1m.

**6.56 Palikoulo Bay** (15°29'S., 167°14'E.) ([World Port Index No. 57190](#)), entered between Palikoulo Point and Cape Undine, 1.25 miles NW, is sheltered except from winds between the N and E, but the depths are irregular. A 4.7m patch, best seen on the chart, lies about 0.8 miles SW of Palikoulo

Point, and is marked by a buoy. A wreck is reported to lie stranded on a reef about 1 mile SW of Palikoulo Point. The buoys charted along the shores of Palikoulo Bay were reported to no longer exist

**Depths—Limitations.**—There is a wharf, about 40m long with depths of 9.7 to 10.6m, on the E side of Palikoulo Bay. The largest vessel to berth at this wharf was a 16,000 grt tanker. The wharf was reported to be in need of repair. There is one tanker mooring buoy, with a pipeline to the shore.

**Pilotage.**—Pilotage is compulsory, except for vessels of the South Pacific Fishing Company. Arrangements should be made through the Luganville harbormaster.

**Anchorage.**—Small vessels can find good, but restricted anchorage, in about 18.3m, at the head of the bay, with the pier at Benkula village bearing about 186°, and the opening between the N extremity of the Palikoulo Peninsula and Palikoulo Island, bearing 052°.

## The Banks Islands

**6.57 The Banks Islands** (13°15'S., 167°15'E.) consist of a number of volcanic islands lying from 50 to 100 miles NE of the N point of Espiritu Santo. With the exception of Dives Bay and Port Patteson, there are no harbors in the group. Landings on the S and SE sides of the islands is usually impracticable, but on the lee side it can be effected without risk. Earthquakes are frequent, but no great damage has been recorded.

**Winds—Weather.**—The cyclones which are experienced in the S part of Vanuatu are seldom felt in the Banks Islands.

**Tides—Currents.**—The currents among the islands of this group appear to be affected by the winds, their rate being from 0.5 to 1 knot, according to the force of the wind.

**Santa Maria Island** (Gaua Island) (14°15'S., 167°30'E.) lies about 50 miles NE of the N extremity of Espiritu Santo Island. The island is nearly round, flat topped, and thickly wooded. The NW and SW points of the island are both steep cliffs. The NE and N coasts are bordered to a distance of 0.75 mile by a reef in which there are three openings, each affording anchorage to small vessels in good weather.

In the center of the island there is a large lake, with a depth of 99m. A waterfall, which is conspicuous from seaward, descends from the lake. There are some sulphur springs on the W side of the hills forming the basin of the lake.

**Caution.**—Caution must be exercised when approaching the E or NE side of the island at night, as the low land projecting in front of the mountains render the estimation of distance difficult. Mission stations are established at several places along the coast.

**6.58 Lakona Bay** (14°17'S., 167°25'E.) lies about 2 miles N of the SW extremity of Santa Maria Island. Anchorage is afforded, in a depth of 18.3m, 0.3 mile offshore and 0.5 mile SW of a conspicuous waterfall located in the N part of the bay. Anchorage may be obtained, in a depth of 26m, in a bight about 0.5 mile outside the fringing reef, off a mission station, about 1.8 miles N of the waterfall in Lakona Bay.

**Masevonu Anchorage** (14°10'S., 167°30'E.) lies on the N side of Santa Maria Island, 2.5 miles E of Low Rocky Point. Vessels anchor, in about 22m, about 0.1 mile from the reef which forms the E side of the anchorage. The locality may be

recognized by a conspicuous large house which stands about 0.5 mile E of the anchorage.

Losolava Anchorage lies about 3.5 miles E of Masevonu Anchorage. The sea breaks heavily on the reefs on either side of the entrance, which is about 0.2 mile wide. There is a small red rock about 1 mile W of the entrance, which assists in identifying it, and close W of the rock there is a small hill close to the coast.

Anchorage is afforded inside the entrance, in depths of 14 to 24m, or farther inside in a depth of 9 to 11m, within a few hundred meters of the shore. It may be necessary to lay out a kedge, as there is not much swinging room.

Do not enter unless the sun is in a favorable position, as the eye is the only guide. After passing through the entrance, it is necessary to keep close to the reef on the E side to avoid the projecting reef on the W side. Caution is necessary as uncharted coral heads may exist.

**Tarasag Bay** (14°12'S., 167°36'E.) lies on the NE side of Santa Maria Island, about 3 miles SE of Losolava Anchorage. There is a conspicuous waterfall in the Lusal River, which discharges into the bay. East Point lies 2.5 miles S of Tarasag Bay. South of East Point there is an opening in the shore reef which serves as an anchorage for small craft with local know-ledge.

**Merig Islet** (St. Claire Islet) (14°17'S., 167°48'E.), lies about 11 miles E of Santa Maria Island. There are no anchorages near the islet and landing is difficult. The islet is reported to be inhabited.

**Mera Lava Island** (Star Peak Island) (14°25'S., 168°02'E.), located 16 miles SE of Merig Islet, is the SE island of the Bank group. The island rises to a conical-shaped peak, bearing evidence of having been at one time an active volcano. The island is steep-to except off the NE point, where there is a small islet, 0.2 mile offshore. There is said to be temporary anchorage for a small vessel on the lee side of the island. Landing may be effected on the small beach at the NE point of the island.

## Vanua Lava Island

**6.59 Vanua Lava Island** (13°48'167°29'E.) is located 14 miles N of Santa Maria Island and is the largest of the Banks group. A volcanic mountain range runs nearly throughout its whole length. Near the middle of the range is Mount Suretamati, a crater 915m high, frequently emitting volumes of steam. The principal villages are situated on the NW side of the island.

**Ngeuseu Mbeuit Point** (Paut Point) (Ngousoubot Point) (13°56'S., 167°27'E.) is the S extremity of the high peninsula at the S end of Vanua Lava. East of the point the coast curves round and extends to the NNW for over 2 miles, and then resumes its E trend forming Kerembitia Bay (Mosina Bay) at the turn.

Kerembitia Bay (Mosina Bay), on the E side of the low land joining the high peninsula to the main island, is open to the SE and during the greater part of the year, is too exposed to be suitable for anchorage. Anchorage may be obtained off a village at the head of the bay, about 0.3 mile from a sandy beach.

**South Head** (13°51'S., 167°35'E.) lies 6.5 miles ENE of Kerembitia Bay (Mosina Bay). South Head should not be approached within 0.15 mile, as the sea has been observed to break on a reef which extends from the head. Kakea Islet and

Niwula Islet, located 0.9 mile SE and 1.75 miles E of South Head, are low, flat, and wooded. The reef encircling these two islets extends from 0.3 to 0.5 mile from their coasts.

Maseunar Channel (Dudley Channel), which separates Kakea Islet from South Head, is 0.9 mile wide and has a least depth of 14.6m in the fairway. The reef on the SE side of the channel has been reported to extend further NW into the channel than charted; it has been reported to be easily seen. A rock, with a depth of 7.3m or less, lies in the N entrance to Maseunar Channel (Dudley Channel), about 0.5 mile NE of South Head. The tidal current in the channel sets N on the flood and S on the ebb. An aeronautical light is shown 3 miles W of South Head.

**6.60 Ashwell Bluff** (13°48'S., 167°34'E.), located about 2 miles N of Ngus Naosieur Point (Grange Point), is 60m high and wooded. The bluff is conspicuous and appears as an island from all directions. Nusa Point, its S extremity, is the N entrance point to Port Patteson.

**Port Patteson** (13°50'S., 167°33'E.) is entered between Ngus Naosieur Point (Grange Point) and Nusa Point. The port consists of two bays, South Bay and Nawono Bay. There is safe anchorage in both bays. Nawono Bay offers good anchorage, in 14.6 to 18.3m, in the middle of the bay. Metlow Reef (Meatlu Reef), which always breaks, lies in the middle of Port Patteson.

South Bay lies between Ngus Naosieur Point (Grange Point) on the E and Ngere Gesai Point (Spout Point) on the W. The shores of the bay are fringed by a reef. The shore reef on the S side is reported to have extended seaward. A heavy SE swell is frequent in the bay.

The anchorage in South Bay is moderately good, though open to the N and NE. Vessels should anchor nearer to Ngus Naosieur Point (Grange Point) than to the S or W shore. Vessels anchor, in about 33m, with Ngus Naosieur Point (Grange Point) bearing 088° and Tovi Aar (Tawen Kwat) bearing 200°.

**Ravenga Island** (13°46'S., 167°33'E.) lies about 1.8 miles N of the N extremity of Ashwell Bluff. The island lies on a coral reef. Foul ground is reported to exist to the E of the island, and in strong E winds the sea has been seen to break to a distance of over 1 mile from shore. The island is separated from Vanua Lava by a passage having a width of 0.5 mile and depths of 9.1m. The passage has been reported to be free of dangers. Shoal patches have been reported to lie E to N of Ravenga Island, and can best be seen on the chart.

From abreast of Ravenga Island, the coast of Vanua Lava Island trends NW for 6 miles to the N extremity of the island, then it trends 6 miles SW to **Red Cliffs** (13°45'S., 167°24'E.), S of which is a conspicuous waterfall. There is a mission station 1 mile N of Red Cliffs. Anchorage may be obtained, in 18.3m, 0.3 mile from the shore at a large village situated 3.5 miles NE of Red Cliffs.

Temporary anchorage may be obtained all along the NW coast of the island, as nowhere do the depths deepen suddenly to prevent anchoring.

**Veutumboso Bay** (Avreas Bay) (13°54'S., 167°28'E.) lies on the SW side of Vanua Lava Island, 3 miles N of Ngeuseu Mbeuit Point (Paut Point). The bay affords shelter against winds from N through E to SSE. A house, situated on a hill above the black lava rocks, is conspicuous from seaward, but is hidden from the anchorage. Vessels may obtain anchorage, in

18.3 to 28m, in any part of the bay, at about 0.3 mile from the shore.

### Islands East and North of Vanua Lava Island

**6.61 Mota Island** (Sugarloaf Island) (13°49'S., 167°42'E.) lies 6 miles E of Port Patteson. The island has a conical peak, with a shoulder projecting to the W, from which direction the peak takes the form of a symmetrical cone. The cliffy coast is fringed by a narrow reef making landing difficult. The best place for a landing is near the mission station on the NW side of the island.

There is no anchorage off Mota Island. Small vessels occasionally lay a kedge anchor out on the reef, to which they ride for a short period of time.

Saddle Island (Valua Island) is located about 8 miles NNW of Mota Island. The N part of the island consists of a mountain and hills. The S side is made up by a rocky bluff, about 1.5 miles from its SW extremity, which is low. It has been reported the E end of the island lies about 1.5 miles farther E than charted, and that foul ground extends E from it for about 0.5 mile. Ra Islet lies on a reef about 0.2 mile off the SE extremity of the island. A mission station stands on the islet.

**Mele Bay** (Mili Bay) (13°39'S., 167°40'E.) is the indentation on the NW side of Saddle Island, which affords an indifferent anchorage. A vessel should approach the bay with the mouth of the river bearing about 128°, and anchor, in a depth of 37m, when the two points of land to the N come in line bearing 000°, and a mushroom-shaped rock on the reef, 0.75 mile S of the anchorage, is in line with the W extremity of Mota Lava.

**6.62 The Reef Islets** (Rowa Islets) (13°36'S., 167°32'E.) are three small, low, sandy, wooded islets located on a dangerous reef, which lies about 7 miles WNW of Saddle Island. The reef is crescent-shaped, with the concaved side to leeward. The weather side dries to a considerable extent at LW, and is always marked by breakers, but the lee side is calm and smooth and therefore dangerous. The area within a line connecting the NW extremity of the reef and the S islet, is almost filled by a shallow reef. The SW extremity on which the sea also breaks is bold to within 0.5 mile. Both extremities are easily visible.

A vessel can obtain temporary anchorage, in 9.1 to 12.8m, about 1 mile from the S islet, and 0.2 mile from the reef, with the summit of Mota Island bearing 140°.

Rowa, the N islet, is the only one inhabited. There is a mission and trading station on the islet. Sanna, the S islet and largest on the reef, lies about 1 mile S of Rowa Islet and terminates at its S end in a bank of sand.

**Ureparapara Island** (13°31'S., 167°20'E.) lies about 9 miles WNW of the Reef Islets. The island is nearly circular in shape and is free from any off-lying dangers. Dives Bay, on the NE side of the island, is an excellent harbor. A narrow belt of reef surrounds the island, except at its NE and SE side, but otherwise the coasts are steep-to. Landing may be effected on the lee side of the island near some villages. Tidal eddies have been observed off the SE and SW sides of the island.

Dives Bay, on the NE side of the island, provides anchorage near the head of the bay. The best berth seems to be in 18.3 to 22m, off a white sandy beach. The anchorage cannot be recom-

mended, because the bottom is foul and squalls descend from the mountain sides.

**Vot Tande** (Vat Ganai) (13°15'S., 167°39'E.), an islet about 22 miles NE of Ureparapara Island, is the northernmost of the Banks Islands. It is composed of two rocks, about 76m high, the top been covered with trees. A vertical rock, about 15m high, lies close off the NE side of the islet.

**Caution.**—Vot Tande (Vat Ganai) has been reported to lie 1.3 miles NE (1966) and 1 mile S (1989) of its charted position.

### The Torres Islands

**6.63 The Torres Islands** (13°17'S., 166°37'E.) consists of five islands lying from about 35 to 50 miles WNW of Banks Islands. They are of coral formation, some being flat-topped, others rising in terraces to peaked hills.

**Toga Island** (South Island) (13°26'S., 166°41'E.) lies about 37 miles W of Ureparapara Island. The island is flat-topped and bluff in most places. A reef extends at least 135m from the SE point of the island, and fringes the other points and the coast where not abruptly terminated by cliffs. The best landing place is between Breneod Point and Merret Point, the NW and N extremities of the island.

The anchorage off **Pilier Point** (13°27'S., 166°41'E.) is precarious. A heavy swell sets in during fresh trade winds. Dumanoir Channel, separating Toga Island from Loh Island, is about 2.3 miles wide and apparently deep, but has not been surveyed. A reef, the extent of which is not known, projects into the channel from the S extremity of Loh Island. Heavy overfalls are found in this channel.

**Loh Island** (Saddle Island) (13°22'S., 166°38'E.), located 2.25 miles NNW of Toga Island, has the shape of a saddle, which gives it the appearance of two islands when seen from the SW. The SW and W sides of the island are fringed by reefs for a short distance offshore. A reef extends from the S extremity of the island.

**Vi Paka Anchorage** (13°22'S., 166°38'E.), a bay on the W side of Loh Island, affords anchorage, in 33m, about 0.3 mile offshore, with Leffondre Point bearing 324°. A vessel reported finding anchorage, in 49m, 1 mile NNE of the S peak of the island.

**Log Bay** (13°21'S., 166°39'E.), on the NE side of Loh Island, recedes about 0.5 mile in a W direction. Reefs fringe the entrance points and other parts of the bay. The bay has patches of sandy beach and landing on the NW side is not difficult.

**Grande Channel** (13°18'S., 166°38'E.), separating Tegua Island from Loh Island, is 2.5 miles wide and deep in the fairway. It was reported that reefs and discolored water extend 0.4 mile off the N end of Loh Island.

**6.64 Tegua Island** (Middle Island) (13°16'S., 166°37'E.) lies on the N side of Grande Channel, 2.75 miles N of Loh Island. Scorff Bay, 1.75 miles ENE of the S extremity, is clear of dangers, except for the reefs at the head of the bay. The depths in the bay have been reported to be more irregular than those charted. Anchorage may be obtained, in a depth of 38m, with the entrance points of the bay bearing 188° and 124°.

From **Dupond Point** (13°16'S., 166°39'E.) to Loutil Point, the NE extremity of Tegua Island, there is a fringing reef. Basilisk Shoal lies off the NE side of Tegua Island, about 1.3 miles

NNE of Loutil Point, but the position is doubtful. The shoal was reported to have a depth of 11m.

**Metoma Island** (Ovale Island) (13°14'S., 166°36'E.), between Hiu and Tegua Island, is the smallest of the Torres group. D'Hestreux Passage, between Metoma Island and Tegua Island, is navigable only by boats. Cosmao Passage lies between Hiu Island and Metoma Island. On both sides of the channel, fringing reefs extend from the shore, reducing the navigable width to about 0.3 mile. Depths of 18.3 to 35m are charted in the fairway.

**Hayter Bay** (Lonakwarenga Bay) (13°16'S., 166°36'E.), on the W side of Tegua Island, affords anchorage, in 29m, about 0.5 mile from its head. The anchorage is partly protected by Ngwel Reef (Ethel Reef), lying in the SW approach to the bay. Ngwel Reef (Ethel Reef) is separated from the S entrance point of Hayter Bay by Guichen Channel, about 0.3 mile wide and deep in the fairway.

Ravallec Shoal, with a depth of 9.1m, lies about 0.5 mile NW of **Pilot Point** (13°15'S., 166°36'E.), the N entrance point to Hayter Bay. A patch, with a depth of 5.5m, and a shoal on which the sea breaks, lie about 0.2 mile SSW and about 0.4 mile SSE, respectively, of Pilot Point, each being about 0.2 mile from the N shore. Other dangers not charted may exist in this vicinity.

**6.65 Hiu Island** (North Island) (13°09'S., 166°35'E.), the largest and highest of the Torres group, is about 7 miles in length and 3 miles in width. The S part of the island is an elevated and thickly-wooded plateau rising at a distance of about 2.5 miles from the S extremity to a height of 518m, from where it slopes gradually in terraces toward the N extremity. The shore points of the island are low and prolonged under water to as much as 0.15 mile. It is recommended to give these points a good berth.

Picot Bay lies on the NW side of Hiu Island and affords tolerable anchorage. Vessels may obtain anchorage, in a depth of 29m, with a distinctive patch of white sand on the beach bearing 099°. Vessels also anchor 0.5 mile offshore, with the white patch on the N end of a hill bearing 126°.

**Girardeau Reef** (13°05'S., 166°35'E.), which generally breaks, extends nearly 1 mile off the N extremity of Hiu Island. A wide berth should be given to the reef.

### Islands and Dangers Northeast of the Torres Islands

**6.66 Tikopia Island** (Tucopia Island) (12°18'S., 168°49'E.) lies about 138 miles ENE of Hiu Island. It has been reported that the island may be approached in safety on all sides. The island appears as an old volcano, of which one of the sides has fallen into the sea. The interior of the crater consists of a deep fresh water lake. From the SW point, a reef, plainly seen, extends out about 1 mile. There are sandy beaches on the E and W sides of the island. Several huts stand on the beaches.

**Ringdove Anchorage** (12°16'S., 168°48'E.) is a bight in the fringing reef on the W side of Tikopia Island; it affords some shelter from the prevailing winds. It was reported a vessel obtained anchorage in a depth of 27m, with the N edge of a conspicuous bluff bearing 107°, the NW extremity of the island

bearing 059°, and the SW extremity bearing 201°. This position affords swinging room of about 0.1 mile clear of the shoal patches to the E. In 1985, a vessel reported anchoring with the bluff bearing 104°, 0.4 mile distant.

Small craft can anchor, in 11 to 18.3m, with the conspicuous bluff bearing about 100°, about 160m from the edge of the fringing reef.

**Anuda Island** (Cherry Island) (11°35'S., 169°51'E.) lies about 73 miles NE of Tikopia Island. This minute island is densely covered with vegetation and there is a sandy beach along its W side. A drying reef fringes the S and W sides of the island and attains a maximum width of 0.2 mile off the S side.

About 0.9 mile SE of the S end of the island lies Southeast Rock, 6.1m above water, which is joined to the island by a rocky bank, and 0.25 mile SE of the rock is an apparently isolated sunken rock on which the sea breaks heavily in rough weather. A rock which the sea breaks on lies 0.4 mile ENE of the N extremity of the island.

**Anchorage.**—Anchorage has been taken, in 26m, about 0.5 mile W of the island. The best anchorage is in depths of 9 to 11m, about 0.2 mile from the beach, abreast the landing place on the SW side of the island.

**6.67 Fatutaka Island** (Mitre Island) (11°55'S., 170°12'E.) lies 26 miles SE of Anuda Island. The island is steep and wooded, and consists of two hills and a rock, giving it the appearance of a mitre. A shoal, with a depth of 23m, lies 71 miles E of Fatutaka.

**Strathmore Shoal** (11°09'S., 170°42'E.) is about 135m in extent, with depths of 7.3 to 9.1m. In 1961, the shoal was reported to lie about 6.5 miles ESE of its charted position. A shoal, with a depth of 9.1m, was reported to lie about 35 miles N of Anuda Island. This shoal has not been examined. In 1989, a shoal with a depth of 14m was reported to lie in position 11°03'S, 169°55'E.

**Pandora Bank** (12°11'S., 172°05'E.) has a depth of 20.1m and is steep-to on its W side. A ship obtained a sounding of 26m in position 12°01'S, 172°09'E. This sounding may have been obtained on Pandora Bank, which may be much more extensive than originally supposed, or the sounding may indicate a separate bank. A bank, with depths of 20.1 to 37m, was reported extending 6 miles bearing 062° from a point in position 12°32'S, 172°03'E.

**Charlotte Bank** (11°47'S., 173°13'E.) has a depth of 27m and is reported to lie about 14.5 miles from its charted position.

**Hazel Holme Bank** (12°48'S., 174°01'E.), with a least depth of 31m, is 5 miles long in a NE-SW direction, and has a maximum width of 3.5 miles. A depth of 29m is charted 25 miles SE of Hazel Holme Bank.

**Alexa Bank** (11°36'S., 175°07'E.) has the shape of a triangle, with the apex being its W extremity and the base is its E side. The bank is 18 miles in length in an E-W direction. Depths on the bank range from 24 to 46m. Penguin Bank, located 3.5 miles NE of Alexa Bank, has a least depth of 27m.

**Morton Bank** (11°44'S., 176°18'E.) is a steep-to reef about 2 miles in extent in a N-S direction. The bank has a least depth of 16.5m, fine coral sand. It has been reported that the bank lies about 3 miles SSW of the above position.

## The Santa Cruz Islands

**6.68 The Santa Cruz Islands** (10°00'S., 165°35'E.) lie from 85 to 190 miles N of the Torres Islands, and consist of four large islands and several smaller ones. The current between the Torres Islands and the Santa Cruz Islands generally runs to the W, varying between the SW and NW, according to the direction of the wind. The rate of the current depends on the force of the wind.

The **Vanikolo Islands** (Vanikoro Islands) (11°40'S., 166°54'E.) are composed of two islands of volcanic origin, Vanikolo Island and Tevai Island. Mount Popogia, 924m high, rises almost in the center of Vanikolo Island and streams of lava are still perceptible. The barrier reef encircling these islands in some places lies up to 2.5 miles from the shore. A short reef also encircles nearly every part of the coast of each of these islands. Between the barrier reef and the shore reef, the depths vary from 18.3 to 82m, but there are numerous coral rocks which render the inner navigation very dangerous.

When a vessel is approaching from the SW, the sandy beach at **Peou** (11°41'S., 166°50'E.) forms a good landmark, as it can be seen a good distance from offshore. This beach, with a small patch about 0.5 mile to the E, is all that can be found within a stretch of 5 to 6 miles.

**6.69 Tevai Island** (11°38'S., 166°58'E.), which nearly occupies all of the large bay on the NE side of Vanikolo Island, is covered with pine trees. It is separated from Vanikolo Island by Dillon Passage, about 0.3 mile wide between shorelines. Tevai Bay, between the S side of Tevai Island and the E end of Vanikolo Island, is about 1 mile in width in the entrance N of Dillon Head. There is an anchorage for small vessels in Tevai Bay, off the village of Ocili, but it is not recommended.

**Manevai Bay** (11°39'S., 166°56'E.), W of Tevai Island, is divided into two parts, an outer anchorage and an inner anchorage. The bay may be entered from the E through Dillon Passage, or from the N through Hayes Channel, an opening in the barrier reef. The shores of Manevai Bay are bordered by reefs, which render landing difficult. Small vessels may enter the bay by Northeast Passage, which lies N of Tevai Island.

The bay affords anchorage in the open space NE of Mausoleum Bank, in 51m, mud. The best anchorage for moderate-sized vessels is in 26 to 29m, S of Mausoleum Bank.

The **Naunha Passages** (Naunonga Passages) (11°35'S., 166°54'E.) are two openings in the barrier reef off the N side of Vanikolo Island. The W passage lies 0.3 mile W of Naunha Islet and has an unexamined shoal in its fairway. The E passage has depths of 12.8 to 16.4m, but there are some patches with depths of 8.2 to 9.1m. Vessels with local knowledge generally use the E passage.

**Nimbe Bay** (11°42'S., 166°56'E.) is entered about 2 miles WSW of Astrolabe Point, the SE extremity of Vanikolo Island. In the middle of the entrance between the reefs, which extend from both entrance points, are three detached reefs with channels between them, and there are a number of coral heads near the middle of the bay.

Saboe Bay, located 3.5 miles W of Nimbe Bay, has depths of 46m and is clear except for a detached reef, marked by a buoy, on the E side of the entrance. It has been reported the bay affords good anchorage, however, it is not recommended for

large ships, because of the constricted nature of the entrance. Anchorage has been taken, in 37m, good holding ground, near the head of the bay.

**6.70 Pallu Passage** (11°43'S., 166°49'E.) is an opening in the barrier reef on the SW side of Vanikolo Island. The narrowest part of the entrance has a width of 160m. The passage is marked by a number of navigational aids. Anchorage has been taken, in 22m, with the white store in the village of Peou bearing 032°, distant 0.2 mile. The anchorage is considered satisfactory for vessels under 5,000 grt.

**Utupua Island** (11°19'S., 166°32'E.) is located about 20 miles NW of Vanikolo Island. The island is almost completely encircled by a coral reef, which extends in some places to about 2.5 miles from the shore. The NW side of the reef breaks in heavy weather, further to the SW the reef is awash. The principal villages lie on the N and W coast of the island. The island was reported to lie 2.5 miles N of its charted position.

**Basilisk Harbor** (11°16'S., 166°30'E.) is about 1 mile wide between Hayter Point, the N entrance point, and Moresby Point, the S entrance point. Ringdove Passage, an opening about 0.2 mile wide in the barrier reef through which vessels have to pass to enter Basilisk Harbor, is situated 1.75 miles WSW of Moresby Point. There is a patch, with a depth of 5.8m, on the SE side of the fairway close within the entrance, and a patch with a depth of 5.8m, near the NE extremity of the reef on the W side of the entrance.

Byron Bay, lies on the E side of the harbor, near its head, and affords anchorage in depths of 22 to 26m. There is no swinging room for a large ship because of the reefs projecting from the shores of the bay.

**Ndendo Island** (Ndende Island) (10°46'S., 165°57'E.), located 39 miles NW of Utupua Island, is the largest of the Santa Cruz Islands. The island consists of mountains, hills, and a coastline indented with many inlets and bays. The vegetation on the island is dense and the rainfall heavy. The S side of the island has not been examined.

**Graciosa Bay** (10°44'S., 165°48'E.) located at the W end of the N side of Ndendo Island, may be entered through N passage or W passage. The bay is about 3.5 miles in length and 1.5 to 2 miles in width. The bay serves as the main port for the outer islands. **Manoora Shoal** (10°46'S., 165°49'E.), a coral bank with a least depth of 16.1m, lies 0.6 mile off the head of the bay. Lata Jetty, 20m in length, lies 0.6 miles S of Luova Point (Spurgeon Point). A wharf, 15m in length, with a least depth of 3m alongside, lies 0.3 mile SW of Manoora Shoal. The wharf was reported (1989) destroyed and suitable only for small craft.

**Anchorage.**—Anchorage may be obtained on Manoora Shoal, in a depth of 14.9m, good holding ground. Good anchorage was found in a depth of 60m, about 0.3 mile SSW of Shaw Point. Anchorage may also be taken in a small bay close S of the W entrance to West Passage. This anchorage is sheltered from the prevailing winds, but is very restricted, with only 0.2 mile between reefs.

**6.71 West Passage** (10°42'S., 165°47'E.) is divided at its E end by a reef, on which lies a black rock. West Passage is not recommended for other than small craft. A light is shown from the SW extremity of Tomotu Neo.

North Passage leads into Graciosa Bay between Cape Trevanion, the N extremity of Trevanion Island, and Carteret Point. The passage is reported to be deep and free of dangers.

**Trevanion Island** (Temotu Island) (10°41'S., 165°47'E.) lies off the NW side of Ndendo Island and partly fronts Graciosa Bay. The island is rather low, covered with trees, and separated from Ndendo Island by West Passage.

**Lord Howe Island** (Tomotu Noi Island) (10°51'S., 166°02'E.), separated from the SE side of Ndendo Island by a deep channel about 0.8 mile wide, is reported to lie farther S than charted. It has been reported that good anchorage, in 14.6 to 22m, may be obtained in an inlet abreast the W end of Lord Howe Island.

**Swallow Bay** (10°41'S., 166°04'E.), entered about 2 miles W of Cape Byron, the NE extremity of Ndendo Island, is only a slight indentation in the coast. Rocks extend from both entrance points. The bottom affords poor holding ground. Depths in the bay are very deep.

Carlisle Bay is located about 3.5 miles W of Shallow Bay. The bay affords good shelter from SE and S winds within the reefs, but is partly open to the NE.

**Byron Bay** (10°40'S., 165°59'E.) lies about 1.5 miles W of Carlisle Bay and affords anchorage in the center of the bay, in depths of 27 to 37m. A vessel was reported to have anchored in a depth of 22m, with the entrance points of the bay bearing 054° and 324°.

**Tinakula Island** (Tamami Island) (10°24'S., 165°47'E.) lies 15 miles N of Cape Trevanion. The island is a volcanic cone, with its lower part covered with vegetation and its upper part bare. The volcano is active from time to time. Forrest Reef is reported to lie about 7 or 8 miles N of Tinakula Island, but its position is doubtful.

## The Reef Islands

**6.72 The Reef Islands** (10°15'S., 166°06'E.), about 22 miles N of the E end of Ndendo Island, are dangerous to approach on account of the extensive reefs which extend from them, especially on their W side. The islands occupy an extent of about 40 miles in an E-W direction from Banga Ndende, the SE island of the group, to Nupani, the NW island of the group.

**Brougham Shoal** (9°38'S., 165°26'E.) over which the sea breaks heavily, extends 10 miles E-W and 4 miles N-S; the position was confirmed in 1987.

**Patterson Shoal** (9°51'S., 166°07'E.) has a least depth of 12.4m, reported in 1987.

**Goldfinch Shoal** (10°17'S., 166°50'E.) was reported (1987) to have a least depth of 11.4m.

**Banga Ndende Island** (Nibanga Island) (10°21'S., 166°17'E.), the SE island of the group, is a small, round, bold-looking island, with apparently deep water around it. Banepi Island, the E island of the group, lies about 3 miles NNE of Banga Ndende Island, to which it is similar in size and appearance, but not as high. The island is wooded and has a small bight on its W side.

**Lomlom Island** (10°18'S., 166°15'E.), located 1 mile W of Banepi Island, is the largest island of the group. It appears to be free of dangers except off its SW extremity, where a reef with several large rocks within its edge extend SW for 1.5 miles. Mohawk Bay is an indentation in the reef on the W side of

Lomlom Island. On the reef forming the bay the water is shallow and in places dries at LW, and there are several islets standing on the reef.

**6.73 Fenualoa Island** (10°16'S., 166°12'E.) lies close NW of Lomlom Island and is separated from it by Forrest Passage, which is free of dangers. A reef extends 1.5 miles off the S end of Fenualoa Island in a SW direction. There is a deep channel between this reef and a reef to the W of it. Nifiloli Island lies about 1.5 miles NNW of Fenualoa Island, and lies on a reef extending from the N end of Fenualoa Island. Round Islet lies on the same reef, about 1 mile W of Nifiloli Island.

Pilini Island lies 2.5 miles NW of Round Island and stands on a detached reef. A mission station stands on the SW point of the island. There appears to be a deep channel between Pilini Island and the N edge of Great Reef. Makalom Islet (Sand Islet) lies on the SW edge of a detached reef, about 3 miles W of Pilini Island. There is a deep-water channel between the two islands.

Great Reef is an irregular atoll with a deep water entrance at its W end and Forrest Passage at its E end. There are also some passages on its S side, all of which appear deep. The currents set SW along the N side of Great Reef, and there are overfalls off its W extremity. **Matema Islet** (10°17'S., 166°11'E.) lies on a detached reef on the S side of Great Reef. There is a landing place on the W side of the islet.

**Nukapu Islet** (10°07'S., 165°57'E.) lies on the E side of a reef, about 7.5 miles NW of Makalom Islet. The islet is narrow and about 1 mile in length. It has been reported a village stands on the S end of the island. The reef on which the islet stands extends about 1.5 miles to the W of the islet.

Nalogo Island lies on the E side of a reef, about 18.5 miles W of Nukapu Islet. **Nupani Island** (10°04'S., 165°44'E.) lies on the N side of the same reef and about 2 miles NNW of Nalogo Island. These two islands are the NW of the Reef Islands. The reef on which the islands stand is about 4 miles in length N-S, with a spur projecting 1.5 miles SW from its S end. The sea generally breaks on the end of the spur.

## The Duff Islands

**6.74 The Duff Islands** (9°57'S., 167°12'E.) lie with Taumako Island, about 53 miles ENE of Lomlom Island, of the Reef Islands. The group consists of nine islands of apparently volcanic rocks. The islands extend 17 miles in a NW-SE direction.

Hawkin Shoal, with a least reported depth of 14.6m, extends SE covering a distance of 40 miles from the Duff Islands.

**Taumako Island** (9°57'S., 167°12'E.) is the largest of the Duff Islands. A village stands on the SW side of the island and is conspicuous for a distance offshore. The village is built on a flat coral islet about 0.1 mile in diameter and separated from the main island by a narrow lagoon. It was reported anchorage was taken, in a depth of 18.3m, about 1.5 miles offshore, with the village bearing 056° and the S of the Loteva Islets bearing 101°. Several coral banks, with very deep water between them, were found inside the anchorage.

A shoal, with a least depth of 10.5m, lies 56 miles E of Taumako Island.

---

The Loteva Islets, about 61m high, lie about 5 miles SE of Taumako Island and form the SE extremity of the group. **Papa Island** (Treasurers Island) (9°53'S., 167°07'E.), located 5 miles NW of Taumako Island, is second to that island in size. It is 100m high and has a village on its S side.

There is a small islet between Taumako Island and Papa Island. The Tuleki Islands lie within 3 miles NNW of Papa Island. The S island of the group has a remarkable rock in the form of an obelisk on its E side; the two largest islands are wooded.