



 ${\bf Additional\ chart\ coverage\ may\ be\ found\ in\ CATP2,\ Catalog\ of\ Nautical\ Charts.}$

SECTOR 9

ISLANDS AND BANKS NORTH AND EAST OF MADAGASCAR

Plan.—This sector describes Ile Tromelin, Ile de la Reunion, Mauritius, Cargados Carajos Shoals, and Rodrigues (Rodriguez Island). It then describes the Aldabra Islands, Assumption Island, Providence Island, the Farquhar Islands, the Comores Islands, and Iles Glorieuses.

Ile Tromelin

9.1 Ile Tromelin (15° 53'S., 54° 31'E.) is a small, low, sandy islet with bushes scattered about; it is fringed by a narrow reef. The islet is part of the French Republic and is administratively attached to Reunion Island.

Two shoals covered by 10m of water lie 0.75 mile NW of the NW extremity of the islet. A light is situated at the weather station which stands on this NW point.

During the Southeast Monsoon, anchorage can be taken in the lee of Ile Tromelin with the weather station bearing 113°, about 0.7 mile distant, in a depth of 13m, sand and coral; the holding ground is indifferent.

Strong overfalls may be seen off the NW side of Ile Tromelin, where the general current flowing W encounters the ebb current; the resulting breakers can be dangerous for small boats as far as 0.25 mile offshore.

Ile de la Reunion

9.2 Ile de la Reunion (21° 06'S.,55° 34'E.) is composed of a very narrow coastal plain, which is succeeded by hilly ground, which in turn rises inland to mountain masses and tableland. It is of volcanic formation, with many extinct craters. The mountain peaks are often visible at a distance of 100 miles or more. The island is a French possession.

La Perause Seamount, with a depth of 54m, lies 100 miles NW of Ile de la Reunion.

Volcan (Piton de la Fournaise) is an active volcano, 2,626m high, in the SE part of Ile de la Reunion; it frequently emits ashes. Slight earthquakes are frequent, however, the general volcanic nature of the island is clearly shown by the many extinct craters on the island.

Les Salazes, a mountain mass, rises near the middle of the island and during portions of nearly every winter, Piton des Neiges, 3,070m high, is snow-capped. Petites Salazes form three needle-pointed peaks each about 2,286m high.

A mark for the SE end of the island is a black wavelike formation, formed by lava flow that solidified, that flowed toward the sea; it is nearly devoid of vegetation.

The roadsteads off the N side of the island are safer than those off the other sides. With gales from the N, a very violent sea beats upon the N coast of Ile de la Reunion from Saint-Paul to Sante-Rose.

Merchant vessels from abroad must first call at Sainte-Pierre, Saint-Paul, Le Port (Port des Galets), or Saint-Denis; permits are granted at these places to visit other places on the island. It is necessary to clear through one of these ports before leaving the island.

Caution.—Fish Aggregating Devices are present around Ile de la Reunion and can best be seen on the chart. The swing circles of these buoys have a radius of 1 mile.

9.3 Pointe des Jardins (20° 52'S., 55° 28'E.) is the N extremity of Ile de la Reunion. Riviere Saint Denis flows into the sea through a deep ravine close W of Pointe des Jardins; a bridge spans the river near its mouth.

Saint-Denis (20° 52'S., 55° 28'E.) (World Port Index No. 47680), situated at Pointe des Jardins, is the capital and the most important town on the island.

The town, surrounded by vegetation, can be seen from a considerable distance; the high tower of the church is prominent.

Anchorage.—Anchorage off Saint-Denis is practically no longer used. From November to April, the stormy season, anchorage is possible in depths of 18 to 31m, NW of Saint-Denis. Vessels should be prepared to get underway at the first sign of stormy weather.

Between April and November, the fair season, vessels may approach land and anchor in 24m, sand and broken shell, with the church steeple bearing 174°, 0.4 mile from the shore. A better anchorage is found a little farther SW in 13m; this site is better sheltered from the swell.

Le Cousin, a dangerous sunken rock, lies about 0.2 mile offshore in a position about 1 mile E of Pointe de Sainte Marie. Cap Bernard, bearing 274°, and seen open N of the cathedral at Saint-Denis, leads N of Le Cousin.

Sainte-Suzanne is a village situated about 0.5 mile SE of Pointe de Bel Air (20° 53'S.,55° 37'E.); the point is marked by a light.

Anchorage can be taken in about 24m, 1 mile E of the light on Pointe de Bel-Air, but it is not recommended because of the bad holding ground and the difficulty of communicating with the shore

There are storehouses on Pointe du Bourbier (21°01'S., 55°43'E.) that are visible from seaward. Anchorage can be taken off the point in a position about 1.3 miles ESE of the point, but is not recommended because of the bad holding ground and the difficulty of communicating with the shore. A church may be seen in the town of Saint-Benoit, which is situated about 1 mile SE of Pointe du Bourbier.

Sainte-Rose is a town situated about 6 miles SE Saint-Benoit. Anchorage is not recommended due to bad holding ground, unsurveyed areas, and the difficulty of communicating with the shore.

9.4 Pointe de la Table (21° 19'S., 55° 49'E.), the SE extremity of Ile de la Reunion, lies about 9 miles S of Pointe du Bambou. Within the coast is a hilly, arid region, Grand Brule, which has been deforested and crevassed by solidified flows of lava from the volcano Volcan.

Vessels should give the coast between Pointe du Bambou and Pointe de la Table a wide berth. A light is shown at Pointe de la Table.

From Pointe de la Table, the coast of Ile de la Reunion trends SW to Pointe de la Mare d' Arzule, 3 miles distant. The coast then trends in a general W direction to Pointe de Langevin (21° 23'S.,55° 39'E.), a distance of 7.3 miles, the S extremity of the island.

Pointe de Saint-Joseph is located 2 miles W of Pointe de Langevin and Pointe Riviere d' Abord is located 7.3 miles farther WNW; the 200m curve lies up to 1.3 miles offshore along this part of the coast.

9.5 Saint-Pierre (21° 20'S., 55° 29'E.) (World Port Index No. 47700) is situated on the S coast of Ile de le Reunion at the foot of the mountains on the W bank of Rivierre d' Abord; the port is very small and consists of a town, an artificial basin protected by breakwaters, and an outer roadstead. Saint-Pierre can be identified from a considerable distance by its white buildings and church belfry. Lights, in line bearing 018°, lead into the inner harbor, which is no longer used because of silting.

Vessels may anchor with the church steeple bearing 018° and Pointe Riviere d' Abord bearing about 063°, in depths from 37 to 42m, sand. A heavy swell sometimes occurs from May to September; a vessel must be ready to weigh anchor at any time of the year.

Pointe des Avirons (21° 14'S., 55° 20'E.) lies NW of Saint-Pierre; a light stands on the coast 1 mile SE of the point, and an aero beacon is situated 1.3 miles farther SE. Anchorage can be taken in about 37m, about 0.8 mile SW of the point, but it is not recommended.

The villages of Saint-Leu and Saint-Gilles les Bain are situated near the coast, 5.3 and 13 miles NNW, respectively, of Pointe des Avirons; a light is situated on the coast near each village.

Baie de Saint-Paul is entered between Cap la Houssaye (21° 00'S., 55° 14'E.) and Pointe de la Riviere des Galets. Baie de Saint-Paul is the best roadstead of Ile de la Reunion. Vessels at anchor here are usually sheltered when rollers are setting in at Saint-Denis.

The roadstead at Saint-Paul is utilized as a waiting anchorage by vessels prior to entering Port de la Pointe de Galets (Port Ouest). Vessels are informed when they can enter port by the Harbormaster's office on VHF channel 16.

During the good season, anchorage can be taken with the signal mast bearing either 114° or 124° in 26m, over a bottom of muddy sand.

A wreck, with a reported depth of 32m, lies about 0.5 mile NNW of Saint-Paul Light. A spar buoy is moored close N of the wreck.

Good anchorage can be taken in a position with the signal mast bearing 240°; here the depths are 20m and the bottom is black sand. A mooring buoy is anchored about 0.7 mile W of the lighthouse.

During the good season, from about the middle of April to the middle of November, the wind is usually SW as a result of an eddy around this mountainous island. During the winter the winds are usually NE, and vessels should anchor farther offshore than mentioned above; depths of 37m are recommended in position NNW of the signal mast.

Port de la Pointe des Galets (20° 55'S.,55° 18'E.)

World Port Index No. 47690

9.6 Port de la Pointe des Galets is comprised of Port Ouest (West Basin), which is about 0.8 mile S of Pointe de Galets, and Port Est (East Basin), which is in Baie de la Possession.

Port Ouest is further subdivided into a N basin and a S basin. **Tides—Curr ents.—**Generally, on the approaches to Ile de la Reunion, the current flows W when N of the island. West of the island the current is extremely variable. Offshore, about 3 miles from Pointe des Galets, the current sometimes reaches 3 knots. Nearer the coast it flows most often to the N at a speed not in excess of 0.8 knot.

There is a cross current in the entrance passes; in front of Port Ouest, it flows most often N, but sometimes S. Its average speed is 1 knot, but can be as fast as 2 knots. In front of Port Est it flows W, and its speed does not exceed 1 knot.

A vessel should keep to the axis of the channel at a speed of 3 or 4 knots. When a vessel of great length passes between the mole heads, the bow will be held in still water while the stern is deflected by a current which may have a rate up to 2 knots.

Winds—W eather.—The port is subject to "rollers," which are ocean waves which occur between April and October; their frequency is about 2 days per month. They occur in any weather and during perfect calm, unaccompanied by any change in atmosphere or other indication. The first appearance is a long swell not assuming the shape of a wave until it reaches the shore where it will break, with great violence, often causing damage to installations; they sometimes assume greater proportions than during a cyclone. This phenomenon usually last 24 hours, but can sometimes continue for 4 or 5 consecutive days. Masters would be advised to discontinue cargo operations and vacate the berth before the swell reaches severe proportions. From June to September, the S swell can cause a heavy undertow in Port Ouest.

Depths—Limitations.— Port Ouest can accommodate vessels up to 14,000 gross tons, with a maximum length of 175m, and drafts of less than 9m. Ship movements take place during daylight hours only.

The channel to Port Est is dredged to a depth of 13.1m over a width of 130m. The W arm of the basin is dredged to 12.8m. Lights, in line bearing 162°, lead through the channel.

Port Est can accommodate vessels up to 45,000 gross tons, with a maximum length of 215m, and drafts of less than 12m. Ships movements take place from 0430 until 2200.

Vessels greater than 120m long are required to use a tug.

Aspect.—The entrance to Port Ouest is protected by two jetties, the ends of which are each equipped with a light. The main lighthouse is situated on top of a cement silo; the large towers of which constitute a good landmark. A tower, with its red and white bands, 2 miles S of the harbor, serves as a good landmark. It displays aerial obstruction lights which are occasionally visible from a distance of 28 miles.

Pilotage.—Pilotage is compulsory for all vessels over 50m in length and is available from 0430-2200 for Port Est and

from sunrise to sunset for Port Ouest. Vessels send their ETA 24 hours in advance, stating vessel draft, whether vessel is carrying hazardous materials, and whether vessel is equipped with a bow thruster. The pilot boards 1 to 2 miles from the entrance, on the range line for the respective port.

Signals.—The following signals are displayed for the regulation of traffic into Port Ouest:

- 1. Red flag—Entry prohibited.
- 2. Green flag—Departure prohibited.
- 3. Red flag over green flag—Entry and departure prohibited.

Anchorage.—There is restricted anchorage 0.4 mile SW of the entrance of Le Port, in a depth of 40m, black sand bottom. Anchorage may not be taken without prior authorization by the Port Authority.

Directions.—The best maneuvering conditions are met at dawn or in the evening, because of the calm usually prevalent at these hours. When entering, large vessels must take into account the crosscurrent, the direction and speed of which are difficult to predict. At times vessels may find their bow in calm water while the stern is still subject to strong current.

9.7 Pointe des Galets (20° 54'S., 55° 16'E.) is located 1 mile N of the entrance to Port de Galets. This low point forms the NW extremity of an arid plain; Port des Galets is situated on the edge of this plain. Between Pointe de Galets and Cap de la Possession, 3.3 miles E, the coast is low.

From **Cap de la Possession** (20° 55'S.,55° 21'E.)to Pointe du Gouffre, the coast is high, steep, and broken by ravines; there are several cascades which fall to the sea from an elevation of 91m or more. Pointe de la Ravine a Malheur, 0.75 mile NE of Cap de la Possession, is a prominent headland.

From Pointe du Gouffre ,the coast trends nearly 2 miles ENE to Pointe des Chiendents, then 1.4 miles farther ENE to Pointe des Jardins, the N extremity of Ile de la Reunion. The 20m curve lies up to 0.4 mile off this part of the coast.

Mauritius

9.8 Mauritius (20° 15'S.,57° 35'E.) is mostly fringed with coral reefs and is steep-to except on the NE side; depths of more than 180m are found from 1 to 1.5 miles offshore. Dangers off Mauritius are described in paragraph 9.9.

Tides—Curr ents.—The tidal currents around the islets on the bank extending NE from the NE side of Mauritius attain rates of 4 to 5 knots during springs, and form dangerous races. The rate at neaps seldom exceeds 2 knots. The currents at night are stronger than those during the day; the strongest occur two days after full and change of the moon.

The flood, or E curren,t begins 5 hours before the moon's meridian passage and continues for 6 hours; the ebb, or W current then sets in immediately and continues for 6 hours; there is no interval of SW. The E current sets with great strength over The Carpenters and The Blacksmiths, and causes dangerous races as far as 3 miles off Gunner's Quoin. Vessels should not pass this islet at distances of less than 1 mile.

The E current sets strongly onto Cannoniers Point, and then sweeps through Quoin Channel and around the N end of Mauritius at a high rate. West winds cause an increase in the velocity; strong S winds deflect the current to the NE.

The tidal currents separate at LW off Piment Point, the N point of the entrance to Arsenal Bay, on the NW shore of Mauritius; the line of separation works toward Rocky Point, which lies about 2.3 miles NNE of Piment Point, and reaches Rocky Point by the time of HW. During the time the E current is setting around the N part of Mauritius, a weaker current is setting S along the W shore of the island.

The so-called W current actually sets generally about WNW past the N end of the island, but is felt very little off the W shore of the island between Cannoniers Point and Caves Point. The inshore current turns 2 hours before the current in the offing, and during the last half of the flood sets E at a rate near Gunner's Quoin of 4 knots. At the 20m curve skirting Mauritius, the W current has a rate of 3 knots.

Winds—Weather.—The Southeast Trade Wind prevails throughout the year, with brief interruptions as described below; it is strongest and most regular in winter, from June to September, when it gives pleasant weather with sunshine predominating.

The trade wind is less dominant in summer when the weather may temporarily become unsettled: this occurs when the high pressure area over the South Indian Ocean becomes weaker; small depressions appear S of these islands and equatorial air reaches them. The air becomes hot and humid, with light winds, mainly from the N; blue sky at dawn soon gives way to heavy cumulonimbus clouds, with outbreaks of rain especially in the afternoon. The sky clears at dusk. A warning sign of the onset of this type of weather is the deep blue appearance of mountain ridges and of distant vegetation.

As pressure rises and the trade wind returns, there may be a period of disturbed weather, with rain or drizzle and very low clouds on exposed coasts; the SE wind increases to Force 5 or 6 over the land and may reach Force 7 over the sea. This weather is very unpleasant if it occurs in April or May.

At Rodriguez, the trade wind may back to NE for a few days during disturbed weather in summer.

The W and N coasts of the islands are more sheltered and are dryer than the E and S coasts. At Ile de la Reunion, the NW coast from Pointe des Aigrettes to Cap Bernard is particularly sheltered, and light variable winds prevail here.

Rainfall in these islands varies greatly, not only from coast to coast, but from year to year; it is at maximum in summer. At Ile de la Reunion it reaches an annual average of 4,300mm at Saint-Benoit, on the E coast, and 990mm at Saint-Pierre on the SW coast.

Rainfall tends to reach a maximum in the afternoon, except when the trade wind is well-established when it is more common at night.

There are many streams and rivers, generally flowing through deep ravines, but none is navigable beyond a short distance from the sea; in dry season they are little more than brooks, but become raging torrents during heavy rains.

Aspect.—The central and W parts of the island are mountainous. Piton de la Petite Riviere Noire (Piton Riviere Noire) rises in a position about 6.8 miles NE of the SW extremity of the island; it is pointed, and appears dark in clear weather, when it is visible for 50 miles. Pieter Both, a remarkable mountain, rises about 15.5 miles NNE of Piton de la Petite Riviere Noire; it has a huge knob on its summit. Piton du Milieu, near the middle of Mauritius, is a steep-sided cone.

Mount Rempart, about 6.5 miles N of Piton de la Petite Riviere Noire, shows three needle-pointed peaks. All these mountains are useful marks for the island, but the summits are often enveloped in mist; among the summits are many extinct craters and extensive caves.

Caution.—A bank extends about 16 miles NE from the N extremity of Mauritius; several islands and lesser banks are located in this area.

9.9 Serpent Islet (19° 49'S., 57° 48'E.), the farthest NE of the dangers off Mauritius, lies near the NE extremity of the bank; it is 162m high. The SE and NW sides of the island are foul to a distance of 0.2 mile.

Nab Reef, about 0.8 mile WSW of Serpent Islet, has depths of less than 1.8m; the sea breaks over it.

Round Islet (19° 51'S., 57° 47'E.), 1.5 miles SSW of Serpent Islet, is 322m high; it is the highest islet in this group.

In the channel between Serpent and Round Islets, the tidal current attains a rate from 3 to 4 knots.

The Blinder is a submerged reef, which breaks occasionally, lying 0.25 mile W of the NW extremity of Round Islet. Both the E and W tidal currents run with great strength over both The Blinder and Nab Reef.

La Caille Bank lies 2.8 miles SSW of Round Islet; Abbe Bank lies 1 mile farther SSW. The sea occasionally breaks over these two banks in bad weather and Abbe Bank will occasionally break in good weather.

Serpent Islet, bearing 009° and open its own breadth E of Round Islet, leads about 0.5 mile E of La Caille Bank and about 0.8 mile E of Abbe Bank.

Flat Islet (19° 53'S.,57° 39'E.) is the farthest NW of the islets N of Mauritius; it is generally flat, but the SW extremity rises to a hill, 91m high. Pigeon House Rock lies close N of Flat Islet; it is 52m high. The N side of Pigeon House Rock is steepto and may be safely passed as close as 0.3 mile; the current N of the rock flows E and W at rates of 2 to 4 knots; there may be tide rips encountered in this area.

Gabriel Islet lies on the reef, about 0.4 mile SE of Flat Islet, and Sandringham Reef extends 0.5 mile farther SE; the tidal currents set with great force over the reef, and it should be given a wide berth.

Vessels can anchor off the S end of Flat Islet, with the light situated on the SW end of the islet bearing 315°, about 1 mile distant, and the summit of Serpent Islet bearing 060°, in a depth of 16m. The holding ground of sand and coral is not good; moreover, the sea rises quickly with S winds so that vessels should proceed to sea at the first indication of bad weather. If a pilot is required, one will be sent from Port Louis.

Rip Bank, about 0.9 mile SE of Gabriel Islet, has a least charted depth of 12.8m.

The NE extremities of Flat Islet and Gabriel Islet, in line bearing 316°, lead NE of Sandringham Reef and NE of Rip Bank; the disused light tower on Cannoniers Point, the NW extremity of Mauritius, bearing not less than 235°, and well open S of the S extremity of Gunner's Quoin, leads S of Rip Bank.

Low-powered vessels arriving off Round Islet during the E current should pass N of Serpent Islet, and should give Pigeonhouse Rock a berth of at least 1 mile.

Gunners Quoin (19° 56'S., 57° 37'E.) is an islet 3.5 miles SSW of Flat Islet; it is separated from Mauritius by Quoin Channel, which is 0.8 mile wide between the 15m curve line.

The Blacksmiths are a group of rocks which extend 0.3 mile NE of Gunners Quoin and The Carpenters are three rocks, awash, which extend 0.2 mile SE from the islet; the sea breaks heavily over them.

The tidal current runs with great force N and S of Gunners Quoin, causing dangerous races up to 3 miles off the islet. Vessels should not pass within 1 mile of this islet.

Mapu Patch (19° 59'S., 57° 40'E.), with a depth of 12.8m, lies 3 miles SE of Gunners Quoin and 1.5 miles off Mauritius.

9.10 Northwest side of Mauritius.—Cannoniers Point (20° 00'S., 57° 33'E.), the NW extremity of Mauritius, has a tower, formerly a lighthouse, situated on its NW extremity; there is a dangerous set toward the point, which should be kept in mind.

There is a quarantine station situated on Cannoniers Point, which includes the sea area to a distant of 0.1 mile. When the station is in use two yellow flags are displayed.

Whale Rock (19° 59'S.,57° 33'E.), on the edge of the coastal reef, 0.5 mile NNW of Cannoniers Point, has a depth of 1.2m. The summit of Serpent Islet, in line with the W extremity of Gunners Quoin bearing 056°, leads N of Whale Rock.

Rocky Point (20° 03'S., 57° 32'E.) lies about 3.3 miles SSW of Cannoniers Point; the fringing reef lies up to 0.8 miles off this part of the coast. From this vicinity, a gap in the trees on Cannoniers Point is conspicuous.

Pointe Piments (20° 05'S., 57° 31'E.) is the N entrance point to Arsenal Bay.

Arsenal Bay is too confined to offer good anchorage at any time, and for those vessel which anchor here, it should be left at once on the least appearance of a W wind, as a swell quickly sets in and breaks heavily over the reefs around.

Tombeau Bay, immediately S of Arsenal Bay, affords good anchorage, except in W winds, in a depth of 9m.

Port Louis (20° 10'S.,57° 30'E.)

World Port Index No. 47720

9.11 Port Louis is of medium size and consists of a city, an outer roadstead, and an inner and outer harbor; it is the principal harbor of Mauritius. There are facilities for general cargo vessels and tankers and is the site of a bulk sugar terminal.

The port authority is Mauritius Marine Authority, represented by the harbormaster.

Winds—W eather.—The harbor is sheltered from all winds except NW, which seldom blow with any strength, except in the cyclone season from December 1 to April 30.

When a cyclone is expected to pass within 300 miles of the island, a weather forecast is delivered daily to each vessel in port; more frequent forecasts are delivered or signaled during cyclone emergencies. Ships can expect at least 24 hours notice of a cyclone; about 3 days warning is normally given.

The most critical time during a cyclone is when the wind is on the beam. Provided the vessel is not too high out of water, there is a good chance of riding out the storm if the following procedure is complied with:

- 1. No attempt should be made to keep the ship broadside to the wind by holding on to windward cable and heaving the headlines taut; the headlines should be slacked down and the windward cable payed out, to allow the ship's head to fall off the wind, even if this is towards and the side of the channel. Since the sides of the channel are steep-to, the bow will come to rest against the side of the channel with any surging to cease, and the stern moorings will not be disturbed.
- 2. Should the wind shift from one side of the ship to the other, as the cyclone passes over the island, the slack in the cable should be taken in and the other cable payed out, to allow the ship to fall off the wind as before.
- 3. No outside assistance can be given until the weather moderates; pilots are placed on the more vulnerable vessels.
- 4. Any vessel remaining in Port Louis more than 48 hours in the cyclone season should obtain special moorings from the port authorities.

Tides—Curr ents.—At the entrance, the ebb current flows SW and the flood current flows NE.

Depths—Limitations.— There is a least charted depth of 12.8m on the entrance range line; the harbor is dredged to a depth of 12.5m as far as Quay D.

The NE side of the harbor is quayed. The quays are lettered and numbered as indicated on the chart. Quay No. 1 can accommodate vessels up to 123m long, with a draft of 12m. Quays 2 and 3 can accommodate vessels up to 366m long, with drafts of 12.2m. Quay No. 4, the container terminal, can accommodate a vessels up to 183m long, with a draft of 12.2m.

Quay D has a dredged depth of 12.5m alongside. Quay E, situated NE of Quay D, has a depth of 9m alongside. Quay C, situated on the W side of Trou Farfaron, has a depth alongside of 5.5m.

A bulk sugar terminal is situated on the SW side of the harbor near Fort William. Sugar is now loaded in bulk. Vessels up to 198m overall length can be accommodated at the terminal. The terminal has also been dredged to a depth of 12.2m. The Bulk Sugar Terminal is operated by the Mauritius Sugar Corporation.

A bulk cement discharge facility is situated between Berths 1 and 2 for cement carriers of up to 135m long. Vessels up to 183m long can be accommodated, subject to the adjacent berths being unoccupied.

The permitted length of ships berthed at the mooring buoys varies between 137m to 183m.

Quay No. 1 is primarily designed for the discharging of petroleum products, ammonia, and bulk fertilizer.

A berth between mooring buoys is situated at the SE end of the dredged section of the harbor, abreast Berths A and D. There are two mooring buoys situated between Berths No. 4 and 5 and Quay E, 0.1 mile S; in 1990, a depth of 0.7m was reported between these buoys.

Aspect.—The cement silos, 43m high, situated near Berth No. 2 are conspicuous; a water tower, marked by a light, situated 1 mile NE of the cement silos, makes a good mark, as does the tank 230m NW of the silos.

The Citadel, situated near the range line 1.2 miles SE of the cement silos, has a mast, with an elevation of 106m, situated at its SE corner and Signal Mountain are conspicuous.

Other good marks from the offing are The Pouce (20° 12'S., 57° 31'E.), which resembles a thumb held upright, and Pieter

Both (20° 11'S.,57° 35'E.), which is surmounted by a knob-like formation.

Pilotage.—Pilotage is compulsory for all merchant vessels over 100 nrt and is available 0700 to 1700. The pilot boards about 0.5 mile NW of the entrance buoys.

Vessels should send their ETA to the harbormaster via the agent 24 hours in advance, stating length, draft, and tonnange (grt or nrt), confirming these details 2 hours in advance on VHF channel 12 or 16. The pilots and harbormaster can be contacted on VHF channel 12 and 16.

Arriving vessels should have both anchors ready for letting go, and two hawsers and two wires ready aft, before the pilot embarks.

Signals.—The conspicuous signal tower at the signal station at Fort William, on the S side of the entrance, is 21.3m high and painted in black and yellow checkers; there is a white iron flagstaff on a tripod.

Anchorage.—There is anchorage in the outer roadstead, about 1.3 miles NW of Fort George, in depths of 27 to 33m, sand and coral.

The quarantine anchorage, whose position may be seen on the chart, is situated on the SW side of the entrance range, NW of the signal station.

Anchorage is prohibited in an area W of the signal station, in an area of submarine cables.

For vessels anchoring in the outer roadstead, the following is the advice of a former experienced harbormaster:

When anchoring in the outer roadstead, from the moment of anchoring, vessels should be ready to weigh anchor and put to sea if necessary. Use chain for a buoy rope. If the signal is made to put to sea, do so at once, and never attempt to ride out the storm. When leaving the anchorage from stress of weather, note the direction in which the wind shifts, and run the vessel in the opposite direction until clear of the land, when an E course will take its into good weather. Never heave-to with the vessels head toward the shore; in bad weather, local currents are often very strong and uncertain in direction; many vessels, in the belief that they had made a sufficient offing, have been hazarded, and some lost, through neglecting this precaution.

Directions.—Vessels approaching Port Louis at night from the SW should pass from 1 to 1.5 miles off Pointe Aux Caves Light on a course of 040°, until the entrance range lights are in range bearing 127°. Then alter course to 127° and take up anchorage in the outer anchorage.

Vessels approaching Port Louis from the NE should pass about 5 miles W of Flat Island Light (19° 53'S.,57° 39'E.); when that light bears 090°, a course of 205° should be steered. Pointe Aux Caves Light should be picked up on that course. When the entrance range lights are in line bearing 127°, alter course to that bearing and take up anchorage in the outer anchorage area.

By day, local knowledge is recommended, as the entrance range marks are difficult to identify.

9.12 West side of Mauritius.—Grand River Bay (20° 10'S., 57° 28'E.) is formed at the mouth of Grand River, where it enters the sea through a gap in the reef; the reef extends 0.7 miles offshore in this area. Martello Tower, which is conspicuous, stands on the SW shore of the bay.

Pointe aux Caves (20° 11'S., 57° 24'E.) is marked by a light; the 20m curve lies 0.2 mile off the point.

Pointe Petite Riviere, 0.7 mile SW of Pointe au Caves Light, is the N entrance point of Petite Riviere Bay, which is almost filled by a reef.

Baie du Tamarin (20° 19'S.,57° 22'E.) has depths convenient for anchoring, but the holding ground is bad.

Grande Riviere Noire Bay is entered about 2.3 miles SSW of Baie du Tamarin. The bay is easily identified by a tower situated on the N entrance point, and by Mount Tamarin (20° 21'S.,57° 22'E.), which rises from the NE shore to a height of 548m.

Anchorage.—Anchorage can be taken in Grand Riviere Noire Bay. After obtaining pratique at Port Louis, a midchannel course between the reefs flanking the entrance should be steered; the reefs are easily seen.

Anchorage can be taken as convenient in 10m or 28m. The anchorage is good, but with W winds a heavy swell sets in; the swell is felt less in positions toward the N side of the bay. Vessels should be prepared to leave the anchorage on short notice.

Pointe Sud Ouest (20° 28'S., 57° 18'E.) is the SW extremity of Mauritius. Pointe Sud Ouest is low and rises to a height of 556m at Le Morne Brabant, an isolated flat-topped hill 1.2 miles NE; the hill is an excellent landmark.

Tides—Curr ents.—During springs, the currents run over the bank W of Pointe Sud Ouest at rates from 3 to 5 knots causing considerable rips. The flood current runs ESE and the ebb current WNW along the S coast, but immediately N of the point the currents follow the coastline, the flood running NNE and the ebb running SSW at a rate of 2 to 3 knots.

Flinders Bank (20° 35′S., 57° 09′E.), about 1 mile in diameter, has a least charted depth of 101m.

9.13 South side of Mauritius.—From Pointe Sud Ouest, the S coast of the island trends ESE to the mouth of the River Savanne, which enters the sea close W of the S extremity of Mauritius. An islet, 49m high, lies on the coastal reef, 1.7 miles ESE of Pointe Sud Ouest.

Bel Ombre (20° 31'S., 57° 24'E.) is a narrow opening in the barrier reef about 5.5 miles E of Pointe Sud Ouest; a beacon stands on the reef on the E side of the entrance.

Bay Jacotet is an indentation, abreast an opening in the reef, 3 miles E of Bel Ombre. The S extremity of Mauritius lies 5 miles ESE of Bay Jacotet, and Souffleur Point (20° 29'S., 57° 40'E.) lies 9 miles ENE of the S extremity.

Grand Port (20° 24'S., 57° 42'E.) is entered E of **Pointe D'Esny** (20° 25'S., 57° 44'E.); it is an extensive harbor and extends about 8.3 miles NNE. The three entrances to the bay are exposed to the full force of the Southeast Trade Wind and to the ocean swell. Reefs and banks border the shoreline and it is unapproachable.

Pointe Laverdure (20° 25'S., 57° 46'E.), which dries, lies at the edge of a reef, extending just over 2 miles E of Pointe D'Esny. Heavy rollers form nearly all the time over Laverdure Spit, 0.5 mile ESE of the point. Ile de la Passe, 11.6m high, lies 1 mile N of Point Laverdure; the ruins of a fort are situated on the islet.

The S entrance to Grand Port is formed S of Ile de la Passa and Danish Entrance, which is not recommended, and is formed at the N extremity of a reef which dries in places, extending about 4.5 miles NNE from Ile de la Passe.

Ile aux Fouquets (20° 24'S.,57° 47'E.) lies on the edge of the reef 0.6 mile ENE of Ile de la Passe; a prominent disused light stands on the islet.

Ile aux Oiseaux (20° 20'S., 57° 49'E.) stands on the SW part of the reef, on the N side of Danish Entrance. The reef extends 1.2 miles NNE from the islet. Great South Point is the spit extending NNE from the reef; it breaks heavily at all times.

Ilot de Roches, on the N side of the North Entrance, lies just over 1 mile NNW of Great South Point; a beacon stands on the islet. Ilot de Roches marks the E edge of the reef, which extends 2 miles from the N entrance point of Grand Port.

Tides—Curr ents.—The tides are much influenced by the winds. During strong SE winds, the HW stand sometimes last for several hours at and near Mahebourg, in the SW corner of the port.

In the South Entrance, the flow of water is nearly always out; the ebb may attain a velocity of 0.5 knot during a strong wind. The water may stand still during a flood tide.

In the North Entrance, both flood and ebb currents are regular and, though never strong, vary a good deal in velocity.

Aspect.—The Bambou Mountains rise over the NE part of Grand Port; the most conspicuous peaks on the range include:

- 1. Grand Port Mountain, near the SW extremity of the range, 4 miles N of Pointe D'Esny (20° 25'S., 57° 44'E.).
- 2. The outline including Lions Head, 0.4 mile SE, resembling the Sphinx facing inland.
 - 3. Mount Bambou, 2.7 miles NNE of Lions Head.

The Thumb is a conspicuous upright column of stone, 0.1 mile E of Mount Bambou.

Point Bambou lies about 1 mile SSW of Pointe du Diable (20° 20'S., 57° 47'E.). Piton Rouge, just within Pointe Bambou, is a useful mark for vessels entering Grand Port by way of North Entrance. Mount Chat, 0.2 mile NNE of The Thumb, is distinctive from N and E of Pointe du Diable. A conspicuous white bungalow, with a black roof, stands just over 1 mile SW of Piton Rouge.

Anchorage.—Anchorage can be taken in Horseshoe Bight, close within Southern Entrance, with the SW extremity of Ile de la Passe bearing 161°,0.3 mile distant, and Ile aux Fouquets disused lighthouse bearing 102°. This anchorage is on Annanas Bank and the depth is 10 to 14m.

The next most frequented anchorage is N of Petit Pate (20° 23'S., 57° 44'E.), 2 miles farther WNW of Annanas Bank, in a clear space 0.3 mile wide, with depths of 12 to 16m, mud.

Anse d' Hercule, 1.5 miles NNE of Petit Pate, affords anchorage in a depth of 20m, mud.

Directions.—Three entrance channels, South Entrance, Danish Entrance, and North Entrance, lead through the reefs lying off the bay. Danish Entrance is not considered a safe channel.

All of these entrances are exposed to the Southeast Trade Wind, and swells from this source are often of considerable size.

Other problems met with by deep-draft vessels proceeding to and from Grand Port are the narrow fairways, rocks, and shoals in the inner anchorage areas.

9.14 Northeast side of Mauritius.—From Ilot de Roches (20° 18'S., 57° 49'E.) to Cape Malheureaux, the N extremity of Mauritius, a reef extends up to 2.5 miles from the coast. The

reef has some openings, suitable only for boats, and encloses a number of bays, where several small rivers enter the sea.

There are no anchorages of any significance along this coast; the boats which enter the breaks in the barrier reef should have local knowledge.

Cargados Carajos Shoals

9.15 Cargados Carajos Shoals (16° 38'S., 59° 36'E.) is an extensive group of reefs, islets, and shoals. They have been reported to lie about 3 miles further SW than charted. The E side of the reef has not been closely examined, because it is almost impossible to approach it from the E; in addition to the tremendous sea always breaking over it, is reported to be steepto, and, therefore, most dangerous to approach under any circumstanceSeveral small islets and rocks rise from the long central reef of Cargados Carajos Shoals, and others lie off its N end and its W side. All of them are low; many are subject to being submerged in heavy weather.

Albatross Island (16° 15'S., 59° 35'E.) is about 3m high and is marked by a light. When viewed from the N, the light may be obscured by trees.

North Island, surrounded by coral reefs, lies 2.5 miles NNE from the main reef; depths off its W side are about 12.8m, but the E side is unsurveyed. Breakers are charted 1.8 miles NNE of North Island and isolated depths of 2.1m lie 1 and 1.3 miles SSE, respectively, of the island.

Ile Raphael (16° 27'S., 59° 37'E.) is a group of three islets, visible at a distnce of about 10 miles. There are fishermen's huts and a meteorological station on the islets; they are situated in the N part of the extensive shoal.

Siren Island lies 1.8 miles SW of Ile Raphael. Pearl Breaker lies 3.8 miles SSW of Siren Island.

Pearl Island (16° 33'S., 59° 31'E.) lies 2.3 miles SSW of Pearl Breaker; it is bare of vegetation, except for a conspicuous clump of trees on its NE end.

Frigate Island lies about 5.3 miles W of the extensive shoal area in a position 3 miles S of Pearl Island.

Mapare Island and Avocare Island lie about 10 miles SSE and 9.5 miles S, respectively, of Ile Raphael. Trees grow on both islands and they are visible from a distance. Avocare Island can be approached from the W by small vessels with local knowledge, although such approach is difficult because of numerous coral heads and other dangers.

Baleine Rocks (16° 41'S., 59° 31^TE.), an isolated group of rocks. The swell usually breaks over these rocks, but in good weather, with a calm sea, the position of the rocks, which is approximate, can be seen by discoloration of the water.

Coco Island (16° 49'S., 59° 31'E.) is located close within the S extremity of the primary reef, 8 miles SSW of Baliene Rocks. It has no trees, but is marked by a light.

Tides—Curr ents.—At the anchorage of Ile Raphael, the tidal currents are felt strongly in both directions; the N current is the stronger. Off Frigate Island they are very slight; the S current only is distinguishable. At the anchorage off Coco Island, the tidal current sets N when the tide is rising, at a velocity of about 0.5 knot. Here, the S current is barely perceptible.

In the month of August, a strong current setting W was experienced off the S side of Cargados Carajos Shoals.

Cargados Carajos Shoals should not be approached at night. A vessel approaching during the daytime from the S should steer for the long central reef. The SW extremity of this reef may be rounded at a distance of 1 mile. Vessels approaching from the N during the daytime should make Albatross Island.

Anchorage.—There are several anchorages in Cargados Carajos Shoals; all them should be approached from the W. There is an anchorage about 0.4 mile WNW of Ile Raphael in a depth of 18m and one about 1.5 miles SSW of that islet, and 0.75 miles E of Siren Island in a depth of 20m. There is an anchorage in 22 to 26m, 0.3 mile N of Frigate Island.

There is anchorage in the bight NE of Coco Island, at a distance of 2, 3, and 4.3 miles NNE of the light; vessels should not anchor in less than 20m in these berths.

Rodrigues

9.16 Rodrigues (Rodrigues Island) (19° 42'S., 63° 25'E.) is of volcanic formation and a dependency of Mauritius. A mountain range extending E and W across the island reaches a height of 396m in Mount Limon. Rows of peaks, separated by deep ravines, connect the central range to the N and S coasts of the island. the islands is composed principally of basalt, but at either end is some upraised coral. It is hilly throughout; a central ridge trends ENE and WSW through the middle of the island along nearly its entire length. Spurs from the central ridge extend to the N and S coasts of the island; between the spurs are deep ravines. The W portion of the island is more or less broken into isolated hills and is generally lower than the E portion.

Rodriguez is connected with the general submarine cable system, and has periodic communication by sea with Mauritius and Madagascar.

Tides—Curr ents.—During the Southeast Trade Winds, there is a constant W current at a velocity of 0.2 to 0.6 knots.

An extensive coral bank, with a least known depth of 42m, lies 90 miles W of Rodrigues. The limit of the bank, as defined by the 180m curve, appears to be about 10 miles in extent. The general depths over the bank are from 70 to 73m; the E limit of the bank has not been determined. The bottom for about 15 miles around the bank is most irregular; depths from 366 to 549m are found in close proximity to those from 1,829 to 3.658m

Rodrigues is surrounded by a coral reef which projects about 0.1 mile off the NE side, 4.5 miles off the NW side.

The reef, which is flat, partially uncovers and bares numerous islets; during LWS, some parts may have 0.3 or 0.6m over them. The reef is steep-to, but with the swell that rolls in, the sea often breaks in depths of 18.3m more than 0.1 mile outside the actual reef. The heaviest breakers may be found on the SW extremity of the encircling reef. In light winds a vessel can anchor almost anywhere outside the reef, in depths from 18 to 37m.

There are many islets on the reef, which may be seen on the area chart; Crab Islet, 46m high, lying 0.6 mile W off the S extremity of the island, is the highest of these islands.

Pilotage.—Pilotage for the island is not compulsory; a local boatman is always available for vessels that need advice as to the channels.

9.17 Port Mathurin (19° 41'S., 63° 25'E.) (World Port Index No. 47750) is situated on the N coast of Rodrigues; it consists of a large village situated on a mudbank, and is the principal settlement and administrative center of the island.

Depths—Limitations.— Mathurin Bay is the only harbor of Rodrigues available to deep-draft vessels.

It was reported (1978) that a depth of 18.3m was indicated by depth meter in position 19° 37'28'S, 63° 24'30'E. A depth of 35m is charted in this position.

The channel leading to Port Mathurin was reported to have been dredged to 8.7m in 1990.

Aspect.—Mont Piton shows as a rounded cone, and is quite unmistakable from the vicinity of Mathurin Bay, but when seen from E or W, it loses its conical shape.

Pointe Venus (19° 40'S., 63° 26'E.) is a cliffy headland; a telegraph station stands on the point. The station consists of five large concrete and corrugated iron buildings that face the harbor; they are conspicuous.

The most conspicuous and blackest cliff on the N coast of Rodrigues in the vicinity of Port Mathurin is near the telegraph station. A whitewash mark is toward the E end of the cliff; if the mark does not show up well, the cliff itself is a useful mark.

A conspicuous flagstaff stands 0.3 mile WSW of the front range light and a group of radio masts stands S of Pointe Venus.

Anchorage.—Abandoned submarine telegraph cables exist in the N and E parts of Mathurin Bay; to avoid these a vessel should anchor in 16 to 22m, W of a line drawn 010° from Point Venus and S of an E-W line, 0.8 mile N of the point.

Vessels at anchor in Mathurin Bay are sheltered from the SE wind that prevails the greater part of the year. The anchorage is further protected from the N by Middle Ground. Even so, rollers set in occasionally and cause a swell in the bay. They may come from any quarter, but usually last only a few hours.

Small boating is extremely hazardous.

In 1978, a vessel with a draft of 7.9m anchored in 28m in Mathurin Bay, just outside Western Pass, near the entrance range line, good holding ground, mud and sand.

Directions.—Vessels approaching Mathurin Bay from the W should keep Pointe au Sel, near the NE extremity of the island, open N of Pointe aux Cornes, the N extremity, until the light beacons are in line bearing 165.5°. A course of 165.5° should then be held until Booby Island bears 252°; from this position a SE course will lead to the anchorage.

Vessels entering by way of Eastern Pass should steer with Diamond Island in line bearing 231°, with a notch in the hills at the W end of Rodrigues. This course should be held closely until Mont Piton, the 354m summit, bears 181° and is in line with the whitewash mark on the black prominent cliff. A vessel in this position will be inside the reefs and shoals, and may alter course as necessary for the anchorage.

9.18 Port South East (19° 45'S.,63° 27'E.) is on the SE side of Rodrigues; it is approached through Grande Passe. No marks can be given for the entrance.

Port South East is suitable for vessels drawing up to 6.1m; it is well-sheltered, being protected by the reef, and has a clear space E of Hermitage Islet with depths from 5.8 to 18.3m, mud and sand, good holding ground. It would be a useful anchorage were it not for the difficulty of entry and exit.

Grande Pass, which has moderate depths, is free from dangers. Because of the strong tidal currents, the tortuous nature of the channel, and the usual strength of the wind, entry should not be attempted without local knowledge, except in a case of emergency.

Islands North of Madagascar

9.19 The **Aldabra Islands** (9° 25′S., 46° 22′E.) lie on an atoll in the NE approach to Mozambique Channel and are comprised of four islands, namely West Island, Middle Island, Polymnie Island, and South Island. South Island is the largest of the group and forms the E and S, and the greater part of the W sides of the lagoon. The islands are reef-fringed, with the reef extending up to 0.2 mile off shore in places; they are steepto. The islands are generally visible up to 15 miles.

The Aldabra Islands are a part of the Republic of Seychelles. **Tides—Curr ents.**—The flood current runs through the passes for about 1 hour 5 minutes after HW, and the ebb current an equal time after LW. Throughout Main Channel and its branches, the current runs with great velocity, at springs attaining a velocity of 6.5 knots, with scarcely any SW; at neaps the velocity is 2.5 knots.

With any wind from a N direction, and when ebb tides are running, dangerously confused seas suddenly occur in the entrance of Main Channel and for a distance seaward of up to 1 mile.

Anchorage.—During the Southeast Monsoon, the best anchorage for vessels up to 91m in length, with a 4.3m draft, lies about 0.3 mile W of the flagstaff at the settlement on West Island in 37m; this is only about 0.1 mile from the edge of the reef, therefore, should the wind change and blow with any strength from the NW, vessels should be prepared to move.

During the Northwest Monsoon, anchorage may be taken E of Hodoul Point, on the bank extending from the E end of South Island. This bank is uneven, therefore, vessels should anchor outside the 15m curve, about 0.2 mile from the extreme E end of the atoll. Should the wind change to the SE, a sharp sea soon builds up over this part of the bank.

Caution.—An IMO-adopted Area to be Avoided has been established around the Aldabra Islands, which may best be seen on the appropriate chart. Vessels greater than 500 grt, carrying oil or hazardous materials, should avoid the area.

9.20 Assumption Island (9° 43'S., 46° 30'E.), which is a part of the Republic of Seychelles and is considered to be part of the Cosmoledo Group, lies 15 miles S of the E end of the Aldabra Islands. The island is surrounded by a narrow fringing, except at the N end of the bay on the N end; shoal water extends 0.9 mile SE from the SE end of the island. Except on the W side of the island, where there is a sandy beach, the seaward sides of Assumption Island are steep or overhanging cliffs. At the SE end of the island, there is a series of sand dunes, which are conspicuous and reach a height of 30m.

Tides—Curr ents.—At St. Thomas Anchorage the flood current sets WSW at a velocity of 3 knots at springs and the ebb current ENE at a velocity of 1 knot at neaps.

Anchorage.—In the bay off the W coast, anchorage during the Southeast Monsoon may be taken anywhere about 0.1 mile from the high water line in about 9m, but the stern would then

be in about 55m and a vessel would need to weigh anchor should the tide cause the vessel to swing against the wind.

Small vessels loading from the island normally drop their anchors on the reef edge, about 0.1 mile NE of a ruined pier, and lie back on their chain during the Southeast Monsoon.

During the Northwest Monsoon, vessels could anchor in 29m, 1.3 miles E of the highest sand dune at the SE end of the island.

Caution.—An IMO-adopted Area to be Avoided has been established around Assumption Island, which may best be seen on the appropriate chart. Vessels greater than 500 grt, carrying oil or hazardous materials, should avoid the area.

9.21 Cosmoledo Group (9° 43'S.,43° 36'E.)lies on an atoll, and is a part of the Republic of Seychelles.

The group consists of many islands of raised coral lying on the perimeter of an almost circular reef. The largest islands are Menai, on the W extremity, and Wizard Island (9° 44'S., 47° 39'E.), on the SE extremity. The seaward edge of the reef, which dries from 0.6 to 0.9m, is steep-to.

The maximum elevation is normally 4.5m, but sandhills of considerably greater heights have been raised. All of the islands of the Cosmoledo Group show signs of great erosion, both on the seaward and lagoon sides.

Menai Island (9° 42'S., 47° 31'E.) is the site of the only settlement in the group; the only other houses are at a fishing station on Wizard Island. The seaward coast is sandy. Johannes Point, the NW extremity of the island, is conspicuous. The settlement is situated close NE of Johannes Point and another conspicuous point is located close N of the settlement. A clump of trees, about 15m high, is located on the S end of Menai Island.

West North Island (9° 39'S., 47° 34'E.), the farthest N of Cosmoledo Group, lies NE of Menai Island; it has a height of 8m. South Island, 6m high, is the farthest S of the group; it lies SE of Menai.

Tides—Curr ents.—At the anchorage off Menai Island, the tidal currents are strong. The ebb sets NE, augmenting the ordinary set of the equatorial current around the island. The flood, during neaps, barely neutralizes the set; at other times it sets SW. The velocity of the outgoing current in South West Passage is 4 to 6 knots, and in South East Passage 4 knots.

Anchorage.—Anchorage may be found during the Southeast Monsoon, in about 28m, about 0.2 mile from the reef off the settlement of Menai Island. The bank is steep-to, but the sea is smooth and little swell passes around the island.

During the Northwest Monsoon, anchorage can be taken in 9 to 18m, it is reported, in positions E of the N part of Wizard Island or in 18 to 37m about 1 mile SE of this island. Neither anchorage has been surveyed, therefore, they should be used with caution.

9.22 Astove Island (10° 04'S., 47° 45'E.), which is a part of the Republic of Seychelles, lies on an atoll SSE of the Cosmoledo Group. The reef fringing the island is steep-to, except on its SE side and off the N point. The settlement is on the W side of the island, about 0.8 mile SSW of the N extremity. A wooden cross, painted white, is easily visible among the trees at the N end of the settlement.

9.23 Providence Island (9° 14'S., 51° 02'E.) lies at the N end of a reef; Cerf Island lies at the S end of this reef. Providence Island is well-wooded, with coconut palms and an avenue of casuarina trees, 15.2m high, traversing the middle of the island from E to W. Near the W extremity of the island is a long, low, red-roofed building. The islands are a part of the Republic of Seychelles.

The E side of the reef has not been examined from seaward; the prevailing SE winds and heavy seas render it unapproachable. It was reported (1972) that the reef lies 2 miles farther to the E than charted. A light is exhibited from a metal framework tower on the NE end of Providence Island. The light is obscured over the island, and the S and W parts of the reef, between the bearings of 359° and 020° .

Wizard Reef, which breaks heavily, lies N of Providence Island.

Cerf Island has been planted with coconut palms; the tops of some of these are 10.7m high, and it is said that the island is visible up to 10 miles. A flagstaff marks Cerf Island.

A depth of 16.8m lies 9.5 miles S of the N extremity of Cerf Island, and depths of 17.6m and 18.1m lie 1.5 miles NNW and 4 miles NE, respectively, of this depth.

Tides—Curr ents.—At the anchorage off Cerf Island, the tidal current sets N at a velocity of 0.25 to 0.5 knot (at springs possibly more), while the tide is rising by the shore, and SW at about the same velocity, but irregularly, while the tide is falling. The currents are slack for about 1 hour at the turn of the tide.

At the anchorage off Providence Island, there is a marked difference in the currents; they are stronger and set N for 9 hours, from 3 hours before HW until the succeeding LW, at a nearly constant velocity of 1.5 knots (at 5 days after the change of the moon); then they slacken and set SSW for about 3 hours at nearly 1.5 knots, then turn rapidly again to the N.

Anchorage.—The most convenient anchorage from which to communicate with Providence Island is in 35m, sand and coral, with the village boathouse bearing about 119° and the N extremity of the island bearing about 046°; caution is necessary, as the depths decrease very rapidly. This anchorage is free from much swell during the Southeast Trade Wind, but is exposed to the wind. A vessel of 900 grt anchored in this position, but was informed by the manager of the island that a better anchorage could be found in 22m, 0.1 or 0.2 mile farther S.

Southeast winds blow about 9 months of the year, but in January and February, when NW winds are strong at times, it is reported that vessels can anchor E of Providence Island.

The most sheltered anchorage is in 18m with the N end of Cerf Island bearing about 142°, distant 2 miles; the bottom here is more even, and anchorage depths extend farther from the reef.

9.24 St. Pierre Island (9° 19'S., 50° 43'E.) is a part of the Republic of Seychelles. The island is barren except for a clump of casuarina trees, 12.2m high, on its N part.

The seaward faces of St. Pierre Island are abrupt coral cliffs, 2.4 to 3m high. The ceaseless sea swell has undercut these faces; jets of water are thrown up in many places by each wave as it strikes "blow-holes" worn out of the coral.

At the SE shore of the island, the wearing away has caused the formation of flat shelves. Anchorage can be obtained off St. Pierre Island in 37m, coral, with the pier bearing 180°. The holding ground is bad, and a vessel should always be ready to put to sea should the wind freshen from the N.

9.25 The **Farquhar Group** (10° 10′S.,51° 07′E.),part of the Republic of Seychelles, lies on an atoll 35 miles S of Cerf Island. The islands are visible from a considerable distance.

The barrier reef is steep-to, except on its NW side where there is a sandbank, with a least depth of 11m; the bottom is plainly visible.

North Island (10° 07'S., 51° 11'E.) is the farthest N of the Farquhar Group, and North Point is the N extremity of the island. Race Point is situated 1.2 miles SW of North Point and is the principal entrance to the lagoon.

North Island has a height of 12.2m near the settlement managers house; a height of 6.1m is located 0.7 mile SE of North Point.

Goelette Island (10° 13'S., 51° 08'E.) is the farthest S of the islands in the group and is difficult to identify at more than 4 miles. The fringing reef extends nearly 5 miles WSW from Goelette and then extends the same distance WNW to its W extremity.

Ile des Deposes lies on the edge of the reef 3.5 miles NNE of its W extremity; Race Point is located 5.5 miles ENE of Ile des Deposes.

Winds—Weather.—Southeast winds prevail from April to October. During the remainder of the year the winds are variable.

Tides—Cur rents.—At the anchorage, the tidal current sets NE during the rising tide until 3 hours after HW by the shore. The velocity at springs is 0.25 to 1.25 knots. The tidal current sets W at a velocity of about 0.5 knot, or is slack for the remaining 3 hours before LW.

Anchorage.—Anchorage can be taken on the bank off the entrance of the channel at Race Point, except during the cyclone season from December to April, inclusive.

In the recommended position for anchoring the depth is 12m, with Race Point bearing 173° and North Point, on North Island, bearing about 079°. The bottom in this position is sand. Considerable swell is felt here.

Directions.—Vessels approaching the anchorage from the E should round North Point at a distance of at least 1 mile.

Vessels drawing more than 3m should not, except in cases of emergency, attempt to proceed through the channel to Inner Harbor; the channel is narrow and winding, and the tidal currents attain velocities of 3 to 4 knots.

Bulldog Bank (10° 00'S., 50° 48'E.), with a least charted depth of 18.3m, lies WNW of the N extremity of the Farquhar Group; McLeod Bank, with a similar depth lies farther in a WNW direction.

Comores Islands

9.26 The **Comores Islands** (12° 12'S., 44° 16'E.) lie in about the middle of Mozambique Channel; all four islands of the group (Njazidja, Mwali (Moheli), Nzwani, and Mayotte) are of volcanic origin

Njazidja

9.27 Njazidja (11° 37'S., 43° 22'E.) is covered with vegetation, except where lava has solidified. Mount Karthala is a crater, but from a distance the mountain appears smooth and dome-shaped. The S slope rises so evenly from sea level as to give a deceptive impression of the height. In clear weather, Mount Karthala can be seen from distances up to 100 miles.

Ras Habu (11° 21'S., 43° 25'E.), the NE extremity of the island, is connected with the shore by a low neck of land, and from a distance appears as an island.

Between Ras Habu and the NW extremity of Njazidja, 6 miles W, the N coast is generally low, but the land rises steeply to a plateau about 762m high, which is the site of some volcanic cones. The extent of the reef fringing this coast is little known.

9.28 West side of Njazidja.—The coast is steep-to, but has no distinctive features.

Mitsamiouli (11° 23'S.,43° 17'E.) is a village situated close S of the NW extremity of the island. A large white conspicuous hospital, surmounted by a flagstaff, stands in the middle of the village. Temporary anchorage, in case of necessity, may be obtained in 55m, with the flagstaff on the hospital bearing 099°, distant 1.2 miles, or in 20m, with the flagstaff bearing 114°, distant 0.7 mile. It was reported (1996) that the hospital is obscured by trees.

Moroni (11° 42'S., 43° 15'E.) (World Port Index No. 47300) is situated on the W side of Njazidja, at the head of Moroni Bay, about 2.5 miles SSW of N'Tsoudjini. The port consists of a town, a very small harbor, and an open roadstead.

The bay is encumbered by a shallow flat of sand and coral. Ilot Souazou lies on the flat and is marked by a light. The anchorage off Moroni is poor and the holding ground is not good; it is open to SW winds and vessels are often forced to put to sea during the dry season. The depths in the anchorage are from 22 to 35m, sand and coral. The anchorage should be approached before sunrise, but a night approach is dangerous as the lights are only visible from a short distance and are often extinguished.

9.29 Southwest side of Njazidja.—P ointe N'Gouni (11° 44'S., 43° 13'E.), the W extremity of Njazida, lies SSW of Moroni. Pointe Moindzaza is located 3 miles S of Pointe N'Gouni; the intervening coast is fronted by a reef which extends 0.3 mile offshore.

Cratere Moindzaza, on the coast N of Pointe Moindzaza, is distinguished by its small ravines forming regular, parallel furrows from its base to summit. A lookout station on the summit forms a remarkable landmark.

Caution.—Recif Vailheu (11° 49'S., 43° 02'E.) lies 12 miles W of Pointe Moindzaza. The reef is reported to lie 2 miles SE of its charted position; it is always covered with a minimum of 4.9m of water. It can be identified by the discoloration of the water, and, in good visibility, it can be seen.

Between Pointe Moindzaza and the S extremity of Njazidja, the coast is low, rocky, and appears to be steep-to; it is backed by many villages.

9.30 East side of Njazidja.—Between the S extremity of Njazidja and Pointe M'Vouni (11° 53'S., 43° 30'E.) the coast continues low and rocky and a reef extends 0.5 mile from it in places. Pointe M'Vouni is low, but a hill rises to a crater close within it. Baie des Essarts is formed about midway along this coast

Chindini (Shendini) (11° 54′S.,43° 31′E.) is a village situated about midway between West Point and North Point. A white house in the village is a useful mark. A steep-to patch, over which the least depth is 5.7m, lies in the outer anchorage off Chindini in a position about 0.6 mile ESE of the village. A reef fronts the village.

The anchorage off Chindini is in 33m, in a position SW of the shoal patch, with North Point bearing 023°, West Point bearing 258°, and the white house in the village bearing 307°. Local knowledge is required before anchoring.

From Pointe M'Vouni, the E coast of Njazidja trends in a NNW direction to Ras Habu;this coast is nearly uniform in aspect and has no coastal plain.

A table topped hill rises to a height of 500m, 12 miles NNW of Pointe M'Vouni and about 4.5 miles farther NNW are lava cliffs. A mosque in the village of Mahale, 1 mile NW of Pointe M'Vouni, is conspicuous.

Mwali (Moheli)

- **9.31** Mwali (Moheli) (12° 19'S., 43° 45'E.), the smallest island of the group, rises to a height of 790m. It lies SSE of Grande Comore; this fertile island is well-wooded and coconut palms are abundant.
- **9.32** Northeast side of Mwali.—From Pointe Hoani (12° 15'S., 43° 40'E.), the coast of Mwali trends SE 15 miles to Pointe Tsinayouhi, the SE extremity of the island. This coast is little known except in the vicinity of Fomboni, which is about 5 miles SE of Pointe Haoni.

The most conspicuous feature on this coast is Square Top, situated near the coast 4.5 miles NW of Pointe Tsinayouhi.

Fomboni (12° 16'S.,43° 45'E.) (World Port Index No. 47310) is situated in a slight indentation in the coast at the head of Anse Doueny; the port is very small and consists of a town and an open roadstead in Baie Fomboni (Fomboni Road).

Depths—Limitations.— The port is visited by small coastal vessels only.

Signals.—There is a signal station at Fomboni; storm signals are shown.

Anchorage.—The anchorage off Fomboni is good during the SE trade wind, although a troublesome swell is sometimes experienced; during the N Monsoons, from about November to February, the swell is very heavy and the anchorage is not safe. Small vessels can obtain better shelter in Anse Tsoa (12° 17'S., 43° 46'E.) during SE winds.

Large vessels should not anchor in depths of less than 16.5m. A vessel of moderate size can anchor on the alignment of Beacons A and B, bearing 195°, and with the daymark on the reef close off the W entrance point of Anse Doueny in range with the beacon 1.5 miles WNW of Fomboni, bearing 267°, in about 15m; in 1970, a vessel was recommended to anchor N of the latter alignment.

9.33 South side of Mwali.—From Pointe Tsinayouhi (12° 23'S., 43° 52'E.), the S coast of Mwali trends WNW to Pointe Miremani, a distant of 12.7 miles. Pointe Tsinayouhi is steep-to, but the intervening coast to Pointe Domode, 5.5 miles WNW, is fringed by a coastal reef which extends up to 1.5 miles offshore. Between Pointe Domode and Pointe Miremani, the coast and fringing reef are indented by numerous coves.

A depth of 1.4m is charted in a position 1.5 miles SSE of Pointe Domode, and breakers have been observed in a position about 3 miles SSW of the same point.

Ile Dzaha (12° 24'S.,43° 39'E.), located 2.5 miles S of Pointe Miremani, is the farthest SW of the islets off this coast; a charted depth of 9m lies 1.2 miles SSW of this islet.

Sail Rocks (12° 21'S.,43° 40'E.), located on the coastal reef 0.5 mile SE of Pointe Miremani, are a good mark; they have perpendicular sides, about 15.2m high, and are visible up to 10 miles. The other islets off this coast are best seen on the chart.

Anchorage.—Vessels with local knowledge can anchor in 18m, muddy sand, with Nioumachoua Point bearing 288°, 0.7 mile distant.

Miremani Cove is an indentation close E of Sail Rocks. Vessels with local knowledge can take secure anchorage in the cove, in 18 to 37m, with a bottom of sand and mud. In the recommended position, Sail Rocks bear 270° and the NE extremity of Ile Canzoni bears 169°.

9.34 West side of Mwali.—From Pointe Miremani (12° 21'S., 43° 39'E.), the coast trends NNW to Pointe Damou then continues NNW to Pointe Miringoni, the W extremity of the island. Vessels can anchor off the villages along the stretch of coast, keeping from 1 to 1.5 miles offshore. From Pointe Miringoni, the coast trends 2 miles NNE to Point Tsandzani, then continues 2 miles ENE to Pointe Hoani, the N extremity of the island. Ile Bouelachamba, located on a reef, lies 0.5 mile SW of Pointe Miringoni. Midway between Pointe Tsandzani and Pointe Hoani is the village of Domoni. Anchorage can be obtained off Domoni; the depths decrease regularly from 24 to 14.6m, 0.5 mile offshore.

Nzwani

- **9.35** Nzwani (Anjouan) (12° 13'S., 44° 22'E.), lying E of Mwali, is of volcanic origin and is fertile. From the W it appears as a succession of peaks, wooded to their summits, rising one behind the other. From a distance of 50 miles from the E, it appears as two peaks, of which the N is the higher. Pic Mtingui, in about the middle of the island, is conspicuous; it attains a height of 1,595m, but its highest point is rarely visible, except in the early morning during good weather, because of enveloping clouds. The peak is cone-shaped.
- **9.36** North side of Nzwani.—Between the N and W extremities of the island, the coast forms a bay and is fringed in places by coral reefs. The reefs show up green at HW and the sea breaks over them at half-tide unless it is calm; there are usually tide rips off each extremity.

Patsy Road (Patsi Road) (12° 08'S., 44° 27'E.) (World Port Index No. 47330) is an indentation between Pointe Patsi and Pointe Mirontsi.

9.37 Mutsamudu (12° 10'S., 44° 24'E.) (World Port Index No. 47320) is SSW of the N extremity of Nzwani and lies 0.5 mile SSW of Pointe Mirontsi. The port of Mutsamudu is an artificial dredged harbor situated close W of the town, and is the principal port of Comores Islands.

Depths—Limitations.— The harbor is formed between Quai Principal, on the N side, and Quai de Transit, on the S side. Quai Principal, which projects from reclaimed land W of the Mutsamudu minaret, has three berths on its S face. Berth 1A, at the outer end, has a dredged depth of 9m alongside; this berth is used for foreign trade and can accommodate ro-ro vessels. Berth 1B, E of Berth 1A, has a depth of 4.5m alongside and used by coasters. Berth 1C, between Berth 1B and the root of the quay, is for vessels that can be grounded. Berth 2, on the N side of Quai de Transit, has a depth of 3.7m alongside; this berth is used by inter-island traffic.

Aspect.—The most prominent objects are a large white minaret near the center of town and a white church, which stands alone on a hill, ESE of the minaret.

Pilotage.—Pilotage is compulsory. Pilots and tugs should be requested through the harbormaster's office; a radiotelephone watch is kept. The pilot embarks 2 miles N of the harbor.

Anchorage.—Anchorage for ocean-going vessels off Mutsamudu is approached with the lookout station light tower bearing 102°. Vessels anchor with the range beacons in line bearing 184°, in a depth of 60m. There is also anchorage in Mouillage de la Fontaine in a depth of 55m, about 0.8 mile offshore with the N and SE anchoring beacons in line bearing 134°.

Ilot de la Selle (12° 09'S., 44° 13'E.) lies close NW of the W extremity of Nzwani; it is a small saddle-shaped bluff. There is said to be good anchorage off the N side of Ilot de la Selle in 22m. Vessels rounding the W extremity of Nzwani should stay at least 1.5 miles off Ilot de la Selle.

9.38 Southwest side of Nzwani.—Between the W extremity of Nzwani and Pomoni, a reef extends up to 1 mile from the coast; there are some gaps in the SE part of this area in the vicinity of the villages. From Pomoni to the S extremity of the island, 9 miles SE, the coast is mostly steep-to.

An isolated coral shoal, with a charted depth of 5m, lies close offshore NW of Pomoni.

In May, rollers are heavy at times along this coast; rain is said to be incessant.

Pomoni (12° 16'S., 44° 24'E.) (World Port Index No. 47315) inner anchorage consists of a natural basin in the coastal reef, which dries. During the Northeast Moonsoon, the anchorage is calm. With strong winds from the S to SW, and during spring high tides, the anchorage may be dangerous. The depths in the fairway are from 16.5 to 35m, but a reef with a least depth of 1.2m lies in middle of the outer part of the entrance; it is difficult to distinguish. The harbor of Pomoni can be used by vessels with a length not exceeding 61m.

Pomoni may be identified by its high, saddle-shaped land and two contiguous peaks dominating the coast. The white, square chimney of a sugar refinery, 0.7 mile SE of the basin entrance, and a white beacon situated 0.2 mile NE of the chimney, are good landmarks. There is anchorage about 0.4 mile SW of the sugar refinery in 26m.

Directions.—Pomoni can be approached with the sugar refinery chimney in line with the beacon NE, bearing 046. The harbor is then entered with two distinctive walls in line bearing 009°, which passes close E of the 1.2m coral shoal; care should be taken not to have too much way on so as to be able to turn short round the NW extremity of the S reef.

9.39 East side of Nzwani.—Between Mourne de la Pointe (12° 23'S., 44° 32'E.), the SE extremity of Nzwani, and the N extremity, the coast is high, rocky, and generally steepto. The most important places on this coast are M'Ramani, Domoni and Bamboa, situated 2, 7, and 10.5 miles N, respectively, of Mourne de la Pointe. At M'Rami, there is a white minaret which is prominent.

Domoni (Deumoni) (12° 15′S., 44° 32′E.) is a village N of Mourne de la Pointe. There is a good anchorage off the sugar refinery, in depths of 14 to 27m, 0.4 mile offshore, except at the height of the Northeast Monsoon in August and September.

Bamboa (12° 12′S., 44° 31′E.) is a village N of Domoni. A white factory chimney on the W side of Bambao and a house, with a flagstaff NW of the village, are easily identified.

Two range beacons stand on the S side of the village; M'Sangani, the front beacon, stands on the shore near a break in the fringing reef; Achombo the rear beacon, stands 0.3 mile W of the front beacon. Gege beacon stands on the beach, off the mouth of Riviere Gege, 1.2 miles SSE of M'Sangani beacon tower.

The N of two anchorages off Bambao is on the alignment of the range beacons, bearing 274°, with Gege beacon tower bearing 184°, in depths from 29 to 35m; this is the more convenient berth for working lighters, but there is deep water close seaward.

Mayotte

9.40 Mayotte (12° 49'S., 45° 10'E.) is remarkable from all directions due to its uneven profile. The coasts are low and swampy and are inundated by the sea in many places; they are covered by mangroves. The administrative and commercial capital of Mayotte is on Ilot Dzaoudzi, off the E coast of the island.

Choungui rises from comparatively low land about 3 miles N of the S extremity of the island; the peak has the shape of a sugarloaf. An observer approaching the island from the E can easily identify Morne Carre, a square-topped hill about 1.7 miles E of Choungui. Combani Hill has a fairly conspicuous conical summit; the hill rises in about the middle of the island and is not distinguishable from the SE or S.

Tides—Curr ents.—The current in the vicinity of Mayotte is variable, but close inshore they usually follow the direction of the coast and reefs; at times they attain a rate of 3.5 knots in the passages. Between Nzwani and Mayotte the current usually sets SW, but sometimes it sets SE at a considerable rate.

Depths—Limitations.— Mayotte is surrounded by a barrier reef which is generally steep-to and should be approached with caution due to uncertain currents in the vicinity and to the considerable distance parts of it lie off the island. The reef is broken by many passages except off the S and NE coasts; the principal passage is Passe M'Zamboro, N of the island.

The best time for a vessel to proceed through the passage, draft permitting, is at or near LW, when the reefs are generally visible in a good light. The passage is marked by lights, beacons, and buoys, but the buoys are often swept away by seas.

The barrier reef is usually marked by breakers, but discoloration of water is the only warning in a calm sea at HW.

9.41 Northeast side of Mayotte.—Between Rassi Douamougno (Cap Douamougno) (12° 39'S., 45° 06'E.), the N extremity of Mayotte, and Pointe Makoen, about 10 miles SE, the coast is high, rocky, and indented; the barrier reef lies up to 4.5 miles off parts of this coast, and many islets and reefs lie in the area between the coast and the barrier reef.

Reefs extend 1 mile NE and 1 mile E of Rassi Douamougno; a light marks the SE extension of the reef. A depth of 8.8m lies 0.2 mile ESE of the light.

Pointe Bandaboa (12° 42′S., 45° 08′E.) is high and steep; a beacon stands on this salient point.

Baie de Longoni is entered between Pointe Bandaboa and Pointe de Longoni. Ile Verte, surmounted by a beacon, lies close off the head of the bay, 1 mile WSW of Pointe de Longoni.

Baie de Longoni affords good sheltered anchorage in depths of 18 to 37m. The beacon on Ile Verte, bearing 175°, leads into the bay clear of all dangers.

Longoni Cove, at the E end of Baie de Longoni, affords restricted anchorage in depths from 7 to 15m.

From Pointe de Longoni the coast trends ESE about 3 miles to Pointe Kongo (12° 44'S., 45° 13'E.), then SE 1.7 miles to Pointe Makoen. The first part of this coast is almost steep-to, but between the latter two points the reef extends 0.7 mile offshore, and reefs and foul ground extends 1.5 miles SE of Pointe Makeon.

Passe M'Zamboro (12° 36'S., 45° 07'E.), the principal approach to Mayotte through the barrier reef, is approached from the N and leads between the E extremity of Recif du Nord and the W extremity of Grand Recif du Nord-Est; it has a least depth of 10.5m in the fairway, although caution is necessary, as depths of as little as 9.1m lie close to the charted recommended tracks. The passage between the W end of Recif du Nord and Chissioi M'Zamboro is foul and should not be used.

Pilotage in Passe M'Zamboro is compulsory for all vessels over 30m in length; the maximum draft that can be taken in is 11.5m. Pilotage is available from 0600-2200. Vessels send a request for pilotage 48 and 24 hours in advance. Vessels confirm their ETA with the harbormaster 18 hours in advance; contact the pilot on VHF channel 14 or 16 about 2.5 hours in advance. The pilot normally embarks 1.5 miles off the pass. Passe M'Zamboro and passage to Dzaoudzi should not be attempted at night.

For directions to Passe M'Zamboro and transit to Ilot Dzaoudzi, refer to the chart.

9.42 East side of Mayotte.—From Pointe Makoen, the coast trends in a general SSE direction to Pointe Saziley (12° 58′S.,45° 12′E.). Pointe Saziley is steep-to, rocky, and has a white patch on the cliff; it rises to Morne Saziley, close W, and is a good mark.

Anse Choa is formed N of Pointe Choa, about 1.5 miles SSE. Pointe Makoen; a coral reef, which dries 0.9m, lies in the middle

of the entrance of the bay. An underwater cable has been laid from the jetty in Anse Choa in an ESE direction to Ilot Dzaoudzi, a distant of 1.2 miles; anchoring is prohibited within 45m of the cable. There is a mooring buoy in Anse Choa.

A minaret is situated in a village 1 mile SW of Pointe Choa. **Pointe Hamouro** (12° 52′S., 45° 13′E.) is located SSW of Pointe Choa; Benara rises to a height of 660m WSW of the point.

Two lights, which form a range bearing 293°, are situated 0.5 mile SW of Pointe Hamouro; they should not be relied upon.

Pointe Saziley, the SE extremity of Mayotte, lies 6 miles SSW of Pointe Hamouro; a reef extends about 0.8 miles SE of the coast midway between these two points.

Ile Pamanzi (12° 47'S.,45° 18'E.)lies E of Pointe Choa; from a distance the island appears as a saddle. The E side of the island terminates in a high, almost perpendicular cliff; the cliff is a useful mark for vessels approaching from the S. There is an airfield at the S end of Ile Pamanzi.

Ile Combe Doume lies 1 mile NW of the N extremity of Ile Pamanzi, E of the N approach to Ilot Dzaoudzi.

There are several islets in the fairway between Mayotte and Ile Pamanzi; their positions may best be seen on the chart.

Sisoa Bouzi (12° 49'S., 45° 14'E.), 163m high, lies about 1.8 miles SW of Ilot Dzaoudzi. Four isolated rocks, the highest one 2.3m, lie within the 20m curve, 0.2 mile NE of Sisoa Bouzi.

The barrier reef off the E coast of Mayotte, between Ile Pamanzi and Recif du Sud, is broken by several passages; the principal one is Passe Bandele, and is the usual route for vessels from the E bound for Ilot Dzaoudzi. The passage is entered E of Ilot Bandele, which can be identified from seaward by a scar on its E slopes resembling a quarry. A maximum draft of 5m is allowed in the passage.

The passage is not suitable for large ships and should not be attempted at night; it is difficult to navigate due to its narrowness and the strength of the tidal currents.

9.43 Ilot Dzaoudzi (12° 47′S.,45° 15′E.)(World Port Index No. 47340) is an islet lying off the NE side of Mayotte and close W off the W extremity of Ile Pamanzi. A drying reef extends 0.4 mile W from the NW side of Ilot Dzaoudzi and Roche Orests, which covers 1m, lies 0.2 mile W of the W extremity of the islet. Vessels anchor, according to the season, in Baie de Pamanzi, NE of Ilot Dzaoudzi, or SW of the island. During the dry season, May to October, vessels use the NE anchorage and anchor in depths of 20m. From November to April, the preferred anchorage is about 0.2 mile SSW of the head of the W jetty. Cargo is handled in steel barges of 100 tons capacity each. Oil products are handled at a mooring buoy berth off the NW side of Ile Pamanzi; a submarine pipeline is laid between the berth and the shore.

9.44 South and W sides of Mayotte.—P ointe Dapani (12° 59'S., 45° 11'E.) can be distinguished from the E by a high hill in the vicinity. Chissioi M'Bouini, 2.2 miles WSW of Pointe Dapani, the S extremity of Mayotte, is joined to the island by a sandbank.

Between Chissioi M'Bouini and Pointe Boueni (12° 54'S., 45° 04'E.), 7 miles NNW, the only outstanding features are Pointe Kana, 4.2 miles NW of Chissioi M'Bouini, and a peak 1

mile E of Pointe Kana backed by Choungui, 2.2 miles farther E.

Baie de Boueni (12° 53'S., 45° 06'E.) is entered between Pointe Boueni and Pointe Doujani. The bay is encumbered with dangers and entrance requires local knowledge.

Passe du Morne Rouge (12° 52'S.,44° 57'E.), through the W side of the barrier reef, near its W extremity, is far from the coast for the range marks to be identified. The N slope of Red Mount, in line bearing 066° with the S slope of M'Sapere, 5 miles ENE, may be of use for proceeding through the passage.

Red Mount (Ochoungui) (12° 48'S., 45° 06'E.) is 223m high and conspicuous. A dangerous bank lies 2 miles WSW of Red Mount. Vessels can pass W of the bank by keeping the E summit of Chissipi M'Zamboro (12° 39'S., 45° 02'E.) in range with the hill on Pointe Acua (12° 45'S., 45° 03'E.).

Passe des Iles Choazil (12° 41'S., 44° 58'E.) leads through the barrier reef in a position about 3.5 miles SW of Chissipi M'Zamboro; the area over the reef has been dredged to a depth of 5.3m. Banc de la Pudente lies 1.7 miles N of the fairway.

Bank du Geyser (12° 21'S., 46° 26'E.) is a dangerous reef with numerous rocks. Most of these rocks dry and many are visible at half ebb; the largest rocks appear to be about the size of boats under sail.

Banc de la Zelee (12° 27'S., 46° 14'E.) has a least charted depth of 10m; it lies with its center about 10 miles WSW from the extremity of Banc du Geyser and is about 14 miles in extent in an E and W direction.

Caution.—The area in the vicinity of Banc du Geyser is the most dangerous part of Mozambiqe Channel. In fine weather, at high tide and with smooth water when the sea does not break, there is, even by day, little warning of nearness to the reef. Reliance must be placed on a sharp lookout and on careful sounding. On the N side of the reef, it has not been shown that sounding will give any warning of proximity to the reef.

The bank should be given a wide berth. Even though the trend of the general current is to the W in the area of Cape d'Ambre (11° 57'S., 49° 17'E.), E to NE countercurrents, at an average velocity of 1 knot, have been experienced in the vicinity of the bank.

Depths shallower than charted may be encountered on Banc de la Zelee and Banc du Geyser. These two banks are reported (1994) to lie 3 miles E of their charted positions.

Iles Glorieuses

9.45 Ile Glorieuses (11° 31'S., 47° 20'E.) are French possessions and are administered from Ile de la Reunion. The group lies on a reef 9 miles long and is comprised of Ile Glorieuse, Ile du Lys ,and some scattered low rocks.

Ile Glorieuse (11° 33'S., 47° 18'E.), 12m high, located at the SW extremity of the reef, is the largest; it is flat, sandy, and

covered with trees, up to 12.2m high. The trees may be seen at a distant of 15 miles. A meteorological station, with a flagstaff, is located on the S side of the island and there is an airstrip.

Discolored water, having the appearance of a reef, has been observed extending 2 miles W from Ile Glorieuse; caution is necessary when approaching the island.

Rocher Sud, 0.9m high, lies near the edge of the reef, about 0.1 mile S of Ile Glorieuse. A radar conspicuous piling stands on this rock. Roches Vertes, 1.4 miles ENE of Ile Glorieuse, consists of three rocks, about 4m high.

Ile du Lys (11° 30'S.,47° 23'E.) lies NE of Ile Glorieuse. The outline of Ile Glorieuse and Ile du Lys changes with the time of year, especially at the height of the monsoons. An observer in a position 10 miles N of Ile du Lys sees three hummocks, with trees between them which are 10.7m high.

No channel or break traverses the reef between the islets. In a position about 1.5 miles E of Ile Glorieuse, in the vicinity of Roches Vertes, the reef is only about 0.5 mile wide. The sea does not always break on this narrow part, even when it is breaking heavily elsewhere. There is danger of mistaking this narrow part for a passage.

A bank, with depths less than 20m, extends 4.7 miles NW and 3 miles NE from Ile du Lys; depths increase rapidly outside the seaward edge of the bank. On the bank there are depths of 10m or greater at a distance over 1 mile from the reef. A shoal, with a depth of 5.3m and a 3.2m patch, lie 2 miles and 0.7 miles WNW, respectively, of Ile du Lys.

A spit of the reef, with a 3m depth charted near its extremity, extends 2.5 miles NNE from Ile Glorieuse.

Tides—Curr ents.—The tidal currents are weak; the flood sets W and the ebb sets E at the anchorages off Ile du Lys. At the anchorage off the NW side of Ile Glorieuse, the ebb was found running WSW at a rate of about 1.5 knots.

Anchorage.—A vessel of 751 grt found good anchorage in 14m, sand and level bottom, with Ile du Lys bearing 151°, distant 1.5 miles.

A vessel of shallow draft can find anchorage in a depth of 7m, with the island bearing 082°, distant about 0.5 mile, but care must be taken to avoid the 3.2m patch about 0.5 mile WNW of the island.

Anchorage can be obtained, in 26m, with the N extremity of Ile Glorieuse bearing 092° , and the summit of Ile du Lys bearing 061° . There is a small channel through the coral reef opposite this anchorage.

Ile Glorieuse is uninhabited except when the meteorological stationed is manned during the cyclone period from November to May

Caution.—A local magnetic anomaly of small extent was reported in the vicinity of the islands.