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**SECTOR 7 — CHART INFORMATION**

## SECTOR 7

### COASTS OF NICARAGUA AND COSTA RICA

**Plan.**—This sector describes the W coasts of Nicaragua and Costa Rica. The descriptive sequence is SE.

#### Golfo de Fonseca to Puerto Corinto

**7.1** The coast between Punta Cosiguina, the E entrance point of the Golfo de Fonseca, and Puerto Corinto, 40 miles SE, is fronted by numerous detached shoals and reefs within the 20m curve which extends up to 4 miles offshore in places. The shore, up to 6 miles SE of Punta Cosiguina, is backed by almost perpendicular cliffs, 61m high. Approximately 9 miles farther SE, an islet, lies across the entrance of a river or lagoon. A breaking shoal extends 0.5 mile seaward from the islet.

**Speck Reef** (12°41'N., 87°27'W.), consisting of several isolated shoal patches, lies about 5.5 miles SSE of the above islet and 1.3 miles offshore. The W most shoal of the group is considered to be especially dangerous because it is not marked by breakers, even with a heavy swell. The other shoals of the group usually break in a heavy sea.

**Isla de Limon** (12°36'N., 87°21'W.), lying 7.5 miles SE of Speck Reef, is low, wooded, and encircled by a white sandy beach. It is joined to Isla Punta Icaico (Islas de Aserradores) by a submerged rocky bank which breaks.

Arrecife Burra Grande, a breaking reef, lies parallel to the coast about 2 miles W of Isla de Limon and 1.5 miles offshore. The channel lying between the reef and the coast should not be attempted. An isolated shoal, with a depth of 6.4m, was reported to lie 4 miles W of Arrecife Burra Grande.

**Isla Punta Icaico** (12°33'N., 87°16'W.), long and narrow, extends from Isla de Limon to Isla Cardon and forms the shoreline on the W side of the approach to Puerto Corinto.

#### Puerto Corinto (12°27'N., 87°11'W.)

World Port Index No. 15550

**7.2** Puerto Corinto is the principal port of entry on the Pacific coast of Nicaragua and lies at the mouth of Estero del Realejo. The port is well sheltered, being protected from the W by Isla El Cardon. There are entrances on either side of this island, but Barra de Cardon (Canale Cardon), on its N side, which is marked by buoys and lighted beacons, is the preferred channel. Boca Falsa (False Bar Channel) leads S of Isla Cardon, but is not recommended. Puerto Corinto handles imported manufactured goods and exports coffee, sugar, peanuts, cotton and seed.

**Winds—Weather.**—The year is divided into rainy and dry seasons, with the rainy season lasting from the latter part of May until November. The average temperature during the day is 30°C and 23°C at night. Northeast winds prevail from November to March and SW winds prevail the rest of the year.

**Tides—Currents.**—The mean range of the tide is 2.3m at springs and 1.7m at neaps. The lowest recorded tide was 0.5m below chart datum and the highest was 2.8m above datum.

A tide gauge is situated at the S end of the main wharf.

In Puerto Corinto, the currents are strong and should be guarded against. At the outer anchorage, the flood sets strongly from NE to ENE, and the ebb in the reverse direction, with a mean velocity of about 0.8 knot, but sometimes attains a velocity of 2 knots. The flood current is reported to set through Boca Falsa at a rate of about 3 knots. It has a tendency to set a vessel onto the shoal that extends N from Peninsula Castanones. Inside the harbor, the tidal currents set in a direction parallel with the main axis of the outer part of the pier at a rate of about 3 knots.

Occasionally, waves 3 to 4.6m high, enter through Boca Falsa and then run nearly at right angles in a SE direction toward the beach, capsizing any boats in their wake. Motor launches have thus been carried to this beach and broken up. During such times, however, the waters to the E and N of the red channel buoys are preferable for anchorage and small boats.

It is advisable for a large vessel, especially one of the single-screw type, to select flood tide for coming alongside the pier. By doing so, the vessel can proceed to a position off the upper end of the pier, drop anchor, swing to the tide, and then go alongside the pier heading out. A vessel of this type might experience some difficulty in getting away from the pier if moored heading in.

**Depths—Limitations.**—The dredged depth in the approach channel is 13m. The depth over the bar is 8.5m.

Vessels are advised to enter only during favorable conditions and then only with extreme caution. Entry should not be attempted when a heavy ground swell is running on the bar. The pilot should be consulted for the existing state of swell and depth allowance.

The W and SW edges of Banco Sawyer, which form the NE side of the channel entrance, are steep-to. The edge of the bank is rarely marked by breakers, and the flood current sets towards the bank. It has been reported (1998) that Banco Sawyer has extended to the S.

Depths of less than 9m extend S from Banco Sawyer, with depths of 7m lying on the N edge of the channel, 0.2 mile S of the drying part of the bank. On the S side of the channel, a bank extends E from the NE shore of Isla Cardon and forms a bar at the NE end of Boca Falsa, which then connects to the shoal ground at the N extremity of Peninsula Castanones.

The Banana Pier, close E of Punta Icaico, is 122m long and has an alongside depth of 9m, but the berth is liable to silt.

The General Cargo Pier, close NE of the Banana Pier, has three berths, extending 610m NNE and fronting the town, with alongside depths of 12 to 13m. Containers are handled at the N end of the wharf.

The Liquid Pier, a T-headed pier with berthing dolphins, lies close N of the General Cargo Pier and has an alongside depth of 13m.

The S and E sides of the harbor are fronted by extensive shallow banks, restricting the width of the navigable channel to

about 0.3 mile. The channel is further reduced to a width of 108m at Cardon Island. Three buoys mark the shoal bank extending W from Isla Encantada.

The maximum length of a vessel to enter the port is 198m.

**Aspect.**—The land in the vicinity of Puerto Corinto is low with but few prominent distinguishing features and stretches for a considerable distance on either side of the approach. However, the numerous high volcanic peaks which rise in the interior are visible for a considerable distance seaward and are excellent landmarks when not obscured by cloud cover.

Volcan Viejo, rising to a height of 1,728m about 18 miles NE of Puerto Corinto, is the highest peak in Nicaragua. A conspicuous white chimney, 43m high, stands 10 miles S of Volcan Viejo.

Volcan Momotombo, an active volcano 1,258m high, stands about 38 miles E of Puerto Corinto. The peak is cone-shaped and so regular in outline that it resembles a pyramid. When viewed from the sea at some distance S of the port, this volcano appears as an immense isolated mountain, but when seen from Isla El Cardon it appears to be joined to Assoco, a volcano of lesser height, about 8 miles W. The two mountains then appear as perfect cones.

Isla El Cardon, 14m high, is reddish-brown in color during the dry season and green during the rainy season. The island is nearly level, and almost bare of trees. Morro Cardon Light is shown from a 13m high round concrete tower situated on the NE point of the island.

A conspicuous water tower, marked by a red obstruction light, stands in the W part of the town.

Channel Cardon is buoyed and marked by three sets of range lights. The first set of range lights leads across the bar through the approach channel to Channel Cardon, bearing 076°40'. The second set, bearing 122°24', leads through Channel Cardon between Banco Sawyer and Isla El Cardon. The third set, bearing 074°32', leads along the channel S of Punta Icaoc. It has been reported that some of the range light structures are partially obscured by trees and difficult to distinguish.

**Pilotage.**—Pilotage is compulsory for all vessels exceeding 500 grt or 2.1m draft. The port is open day and night, however, entry is restricted by the tide and vessel's draft. Vessel's ETA should be sent 72, 48, and 24 hours in advance and should be confirmed 12 hours before arrival. Pilots board about 2 miles W of Morro Cardon Light.

**Regulations.**—It has been reported (1987) that there are speed limits of 8 knots in Corinto Bay, and 5 knots in the vicinity of the berths.

**Anchorage.**—The anchorage offshore Isla El Cardon is safe, but uncomfortable because of the heavy swell that sets in. A vessel planning to stay for any length of time is advised to enter the port. Large vessels usually anchor with Morro Cardon Light bearing 095°, distant 2 miles, in a depth of about 16m, mud and black sand. Farther S, a heavier sea is usually experienced.

Vessels waiting to go alongside usually anchor in mid-channel abreast the town in depths of 8 to 12m. Large vessels can anchor in a depth of 13m about 0.5 mile NE of Cabo Austro, the S end of Isla El Cardon.

**Directions.**—The approach channel and Canal Cardon are marked by sets of numbered buoys. The channel buoys are moored about 90m outside the charted dredged channel.

Keeping midway in the channel, the three sets of range markings are followed into Corinto Harbor. The best time to enter the harbor is during the afternoon, or as the visibility improves.

**Caution.**—Vessels may be anchored close to the 074°32' range line.

It is advisable to moor rather than anchor as the currents are strong at springs and the swinging room is limited.

An area lying about 0.3 mile S of the Corinto pier should be avoided as an anchorage, for in it the full force of the tidal current is effected, and the holding ground is very poor.

## Puerto Corinto to Puerto Sandino

**7.3** The coast between Puerto Corinto and the mouth of the Rio Tamarindo, 29 miles SE, consists mainly of sandy beach broken by an occasional cliff. Seaward of the 20m curve, which lies up to 2.5 miles offshore, the depths are regular with no off-lying dangers.

A range of hills having two peaks, 280 and 271m high, runs parallel to the coast about 4 miles inland from a position 11 miles NW of the mouth of the Rio Tamarindo.

## Puerto Sandino (12°11'N., 86°47'W.)

World Port Index No. 15545

**7.4** Puerto Sandino, formerly Puerto Somoza, a small cargo and oil discharging facility, is situated on the E bank of the Rio Tamarindo, about 1 mile within the entrance. There are no alongside berthing facilities for ocean-going vessels. Cargo is discharged into lighters at the anchorage. Large tankers moor to a cluster of mooring buoys at an offshore pipeline berth SW of the river entrance to discharge cargo.

**Winds—Weather.**—Northeast winds are prevalent from November to April and SW winds from June to September. During the dry season, November to April, the prevailing winds vary along the coast, being at right angles to the coastline. The seasonal winds are rather irregular and are interrupted by calms and occasional squalls. Strong N winds occur mostly in January and February. These N winds may reach a gale force of Force 8, but are usually of Force 4 to 5.

**Tides—Currents.**—The tides rise 2.2m at springs and 1.7m at neaps.

The flood current ascends the river as far as the settlement at a velocity of about 2 knots. After rains, the ebb frequently has a velocity of 5 to 6 knots in the river, and a velocity of 4 knots over the banks at the entrance. A slight N set has been experienced at the anchorage.

**Depths—Limitations.**—Depths in the approach appear to shoal gradually within the 20m curve which lies about 3.5 miles W and 3 miles SW of Penas del Tiscuco, the S entrance point of the river. Several detached shoal patches, with depths of less than 10m, lie close to the alignment of the entrance range and within 0.5 mile N and S of it. The entrance of the river is obstructed by a bar which consists of drying sand banks and submerged rocks.

Mariners are advised to exercise extreme caution in making the approach because the buoyage is unreliable and less depths than charted may exist.

The pier fronting the settlement is 46m long with depths of 3 to 4.5m alongside. Only tugs and lighters can be accommodated.

An offshore berth lies nearly 2.3 miles seaward from a position on the coast about 1 mile SSE of Penas del Tiscuco. A depth of about 14.3m exists at this berth and a 38,000 dwt tanker, with a maximum length of 259m and a maximum draft of 12.5m, can be accommodated.

**Aspect.**—Volcan Momotombo, about 19 miles NE, and Volcan Viejo, about 33 miles NNW, respectively, of the mouth of the river are useful marks when making the approach.

A prominent power station stands on Penas del Tiscuco, the SSE entrance point of Rio Tamarindo. There is a prominent house on the hillside ENE of it. Two white oil tanks are situated about 0.3 mile SE of the house. These conspicuous tanks are reported to be visible up to 15 miles from seaward. The three gray warehouses at Puerto Sandino may also be visible for a considerable distance seaward.

Range lights, bearing 080°, are situated 0.7 mile NE of Penas del Tiscuco and lead toward the anchorage lying 2.5 miles W of the front light structure.

**Pilotage.**—Pilotage is optional. Vessels send their ETA, if transiting the Panama Canal, through Balboa via the agent. Pilots board tankers about 0.5 mile W of the sea berth.

**Anchorage.**—Anchorage can be taken in depths of 7 to 13m, coral and sand, about 1.3 miles W of the S entrance point of the river, although it is very dangerous between June and October.

**Caution.**—The positions of the lighted range beacons leading to the anchorage are approximate. The lights have been reported visible for only 2 miles at night.

Anchoring and trawling near the pipeline is prohibited.

**7.5 Cabo Desolado** (11°59'N., 86°41'W.), a conspicuous headland, lies 12 miles SE of Penas del Tiscuco. It rises to its highest point, 140m, about 0.5 mile inland.

The cape appears to project well seaward because of the low land SE of it, although in reality the change in direction of the coast is very slight.

The coast between Penas del Tiscuco and Cabo Desolado is marked by a heavy surf and appears foul up to 2 miles offshore. Vessels should approach this section of coast with caution and keep at least 5 miles offshore when passing.

**Venadillo** (11°55'N., 86°40'W.), an open roadstead lying 5 miles SE of Cabo Desolado, provides anchorage in depths of 13 to 26m for vessels stopping to load cedar cargo. When a vessel is expected, a flag inscribed with the name "Venadillo" is displayed from a mast, but is difficult to distinguish beyond 1.5 miles. The best guide is Volcan Momotombo, which bears 011° from the roadstead.

The anchorage is safe during winter, but during the summer vessels must anchor well offshore and be prepared to get underway should an onshore wind develop.

**Puerto Masachapa** (11°47'N., 86°33'W.) (World Port Index No. 15540), lying 11 miles SE of Venadillo, consists of an open roadstead obstructed by numerous reefs close inshore. A pier, 305m long, has a depth of 6m alongside, and extends from the shore abreast the port.

Several aluminum tanks at the inshore end of the pier and a white chimney, 1.2 miles N, are conspicuous from seaward. Approaching from W, a hill standing 4 miles E of Masachapa bearing 092° leads to the roadstead.

## Puerto Masachapa to Punta Blanca

**7.6 Punta Pie del Gigante** (Punta Gigante) (11°23'N., 86°03'W.), a large and rocky point lying 39 miles SE of Puerto Masachapa, is the N projection of a series of bold promontories. A mountain, 474m high and 4 miles inland of the point, appears capped by a small circular eminence when viewed from the W.

A deep, crescent-shaped bay, on the N side of Punta Pie del Gigante, is frequented by large vessels loading cattle and logs. Inside the point, a depth of 9m lies 0.2 mile offshore.

**Morro Brito** (11°20'N., 86°01'W.), 113m high, projects 0.2 mile S from the general line of the coast on the W side of the mouth of the Rio Grande. The depths in Brito Roadstead, on the E side of the point, are regular, shoaling gradually to the 10m curve about 0.2 mile from the beach.

**Puerto Morazan** (11°16'N., 85°54'W.), little more than a recess in the cliffs, is frequently used as an anchorage by small vessels with local knowledge.

**7.7 Puerto San Juan del Sur** (11°15'N., 85°53'W.) (World Port Index No. 15530), small in extent with gradually shoaling depths, is formed by an opening in the cliffs about 0.5 mile wide, although rocks reduce the width of the bay to less than 0.4 mile. The village lies along the E shore of the bay and is clearly visible to a vessel approaching from the W.

**Winds—Weather.**—Strong E and NE winds occur from January to April. Squalls are experienced in May and October.

During the season of the Papagayos, the gale winds blow directly out of the bay to the SW. At such times, vessels are advised to anchor so as to drag clear of the shoals should the anchors fail to hold.

**Tides—Currents.**—The currents within the port are not strong and vessels usually ride to the prevailing winds.

**Depths—Limitations.**—The wharf on the N side of the E entrance point can accommodate only small craft and lighters. Vessels work cargo at the anchorages.

**Aspect.**—Range lights, aligned 067°, are shown from the head of the bay. A fort stands on the SE entrance point of the port. Monte Papayal, 427m high, rises directly behind the port and may be distinguished by the mounds along its ridge which resemble the knuckles of a left fist. Depths in the approach range from 18m, about 0.2 mile seaward of a line extending between the entrance points, to a depth of 5.5m within 0.1 mile of the shore of the bay.

**Pilotage.**—Pilotage is compulsory. Vessels may contact the pilot, who is also the loading master, on VHF. Pilots board about 1 mile SW of the harbor.

**Regulations.**—Customs and Port Health officers will board vessels upon anchoring, between sunrise and sunset, to issue clearance unless prior arrangements have been made.

**Anchorage.**—The recommended anchorage for vessels working cargo is on a bearing of 170° with San Juan del Sur Light. Vessels not working cargo may take anchorage in a

depth of 17m on the S side of the entrance, about 0.4 mile NNW of San Juan del Sur Light.

**Directions.**—The high volcanoes rising in the interior serve as excellent landmarks. On approach, Monte Papayal and San Juan del Sur Light can be readily distinguished.

When the lighted beacons on the NE side of the bay are in range, bearing 067°, steer this course and anchor as convenient.

**Caution.**—The shoal water bordering the SE entrance point is reported to be extending seaward and a detached shoal, with a depth of 6.4m, lies 0.4 mile NNW of the fort.

Submarine cables enter the bay off the N entrance point, close S of the reefs, then circulate the bay to surface at the SE corner.

**7.8 Rocas Frailes** (11°12'N., 85°51'W.), a group of three almost circular rocks, each 18m high, steep-to, and flat-topped, lies offshore about 3 miles SE of San Juan del Sur Light. The E most rock of the group appears as a ship under sail when seen from the N, but is not easily distinguished from the W.

**Punta La Flor** (Cabo Natan) (11°06'N., 85°48'W.), a projecting promontory lying 9 miles SE of San Juan del Sur, has a shoal spit with depths of less than 5.5m extending about 1 mile from it. La Flor, a small crescent-shaped bay close N of the cape, is frequented by small vessels intending to load lumber.

**Bahia de Salinas** (11°04'N., 85°44'W.), entered between Punta Arranca Barba and Punta Zacate, lying 2.5 miles S, indents the coast 4 miles to the SE.

The N shore is high and bold, but elsewhere the coastline consists of sandy beaches and low marshy valleys.

The soundings decrease from 36m just outside the bay entrance, to 5.5m about 0.4 mile from its head.

The approximate boundary between Nicaragua and Costa Rica, 3.3 miles E of Punta Arranca Barba, is marked by a silver-colored building. The customhouse and the remains of a small wharf at Puerto Soley, the Costa Rican Customs port, is situated at the head of the bay.

Bahia de Salinas is frequented by vessels sheltering from gales during the season of the Papagayos.

**Punta Descartes** (11°02'N., 85°46'W.), lying 2 miles SSW of Punta Zacate, is the outer extremity of the promontory which separates Bahia de Salinas to the N from Golfo de Santa Elena to the S. A rock, awash, surrounded by foul ground, lies about 1.3 miles WNW of the point. The channel lying between this rock and the mainland has not been examined.

**7.9 Golfo de Santa Elena** (10°58'N., 85°46'W.), entered between Punta Descartes and Punta Blanca, 9 miles WSW, is indented by Bahia Santa Elena along its S shore and Bahia Tomas and Bahia Juanilla in its SE part. Isla Despensa and Isla Juanilla, two detached islands, lie about 0.5 mile offshore in the N section of the gulf. Isla Despensa has two summits, the S peak being the higher and the N peak the more abrupt. Anchorage can be taken as convenient to the SE of Isla Juanilla.

**Bahia Juanilla** (10°57'N., 85°44'W.), together with Bahia Tomas close SW of it, provides shelter with good holding ground over a bottom of mud, but local knowledge is necessary. Vessels approaching from the W should favor the S

side of the channel in order to avoid the dangers which lie within 0.8 mile W of the N entrance point of Bahia Juanilla. Bahia Tomas provides good shelter during W winds and seas.

**Bahia Santa Elena** (Port Parker) (10°56'N., 85°49'W.), a fine landlocked harbor, lies about midway between Bahia Juanilla and Punta Blanca. Cerros de Santa Elena, the ridge behind the harbor, is crowned by two high conical peaks that can be readily distinguished.

Islands lie about 0.5 mile offshore of each entrance point of the harbor and Roca Tooth, a small rock, lies 0.2 mile W of the E most island.

Anchorage can be taken about 0.4 mile SSE of the W entrance point of the harbor. A vessel planning to enter should keep at least 0.5 mile offshore until the entrance is recognized and then steer a midchannel course between Roca Tooth and the W entrance point.

**Punta Blanca** (10°57'N., 85°54'W.) is a bold striking headland lying 4.5 miles W of the W entrance to Bahia Santa Elena. It rises 1 mile inland to a 207m high jagged summit. A detached 3.6m shoal lies about 1 mile W of the point.

### Punta Blanca to Cabo Velas

**7.10 Bahia Playa Blanca** (10°56'N., 85°54'W.), entered between Punta Blanca and Cabo Santa Elena, 5.5 miles SW, is obstructed by two large rocks and an islet in its central part. Anchorage can be taken with local knowledge in depths of 15 to 18m in the NE part of the bay.

**Cabo Santa Elena** (10°54'N., 85°58'W.), a narrow rocky ridge extending about 2 miles from the coast, rises abruptly from the water to a sharp summit, about 137m high. When seen from the W, Cabo Santa Elena looks like a mountainous island, but from N or S it appears as an oval, serrated ridge, the outline resembling the edge of a half-open fan.

The Golfo de Papagayo, a deep coastal indentation, lies between Cabo Santa Elena and Cabo Velas about 33 miles S.

**Bahia Murcialagos** (10°53'N., 85°56'W.), entered between Cabo Santa Elena and Punta Parker, about 6 miles ESE, is encumbered by numerous islets, rocks, and submerged dangers in its central part. Vessels have anchored in the NE part of the bay between Punta Parker and Isla Pedada, 2.2 miles NW, in a depth of 22m, but the holding ground is poor and is not considered safe during the season of the Papagayos.

**Bahia Potrero Grande** (10°50'N., 85°49'W.), located 3 miles E of Punta Parker and entered between high hills, is exposed to the W. The bay widens within the entrance, but provides little additional protection to the anchorage. A number of above-water rocks lie off the entrance points, but there are no dangers outside of these. Depths range from 37m in the entrance to 9.1m about 0.1 mile from the head of the bay.

The coast, from a position about 2.7 miles SE of the S entrance point of Bahia Potrero Grande to Islas Huevos, about 11 miles SSE, is indented by a large open bay. The shores of the bay consist of high, bold cliffs backed by a wooded plateau about 300m high, gradually descending to lesser heights in the vicinity of Islas Huevos. The water in the bay is deep up to within 1 mile of the shore.

Roca Blaze, 43m high and the only rock of any size in the bay, lies about 5 miles E of the N entrance point and seaward of a broad valley which extends inland through the high plateau mentioned above. Sunken rocks lie off the W side of the rock, but the depths off its S side are convenient for anchoring by vessels with local knowledge.

**Bahia Huevos** (10°39'N., 85°42'W.), a small inlet open to the SW, is entered close S of Islas Huevos. The two islands located in the bay lie so close to each other and the shore that they appear to be high wooded bluffs on the mainland. The entrance of the bay is obstructed by a detached reef lying offshore, about 0.1 mile S of these islands.

**7.11 Puerto Culebra** (10°36'N., 85°42'W.), lying 3 miles S of Bahia Huevos, is entered between Punta Mala, and Punta Ballena, 1.5 miles SE. Spacious and sheltered, the harbor has sufficient depths for large vessels.

Norte Viradores, two flat, rocky islets barely showing above water, lie about 0.3 mile SW of Punta Mala. A rocky column, 18m high, stands on the outer islet and forms an excellent landmark when seen clear of the land.

The shores of the harbor are generally steep-to, but foul ground extends about 0.1 mile offshore at Punta Buena.

Anchorage can be taken anywhere in Puerto Culebra over a bottom of mud and sand.

**Bahia del Coco** (10°34'N., 85°43'W.), entered between Punta Cacique and Punta Miga, 1.2 miles SW, lies 2.5 miles SW of the entrance of Puerto Culebra. The entrance points of the bay are formed by rocky cliffs with hills rising behind them.

Sur Viradores, three grass-covered islets, are separated from Punta Cacique, to the SE, by a foul passage.

A line of drying rocks fronts the sandy beach at the head of the bay.

Anchorage can be taken within the bay in a depth of 15m. When entering, the Punta Cacique side of the entrance should be favored in order to avoid the dangers extending from the SW shore.

**Punta Gorda** (10°32'N., 85°47'W.), backed by hills which descend abruptly to the sea from a height of 104m, lies 4 miles W of Bahia del Coco. A point lying 2.5 miles farther SW appears as a rounded hill with an indentation in its summit, but is less striking in appearance.

**Islas Brumel** (10°30'N., 85°50'W.), two small, 43m high grass-covered islets, lie close together 0.5 mile SW of the above point. Reefs extend 0.3 mile N and 0.4 mile SSE from the W island. The two islets appear as one, except when viewed from the NW.

**Islas Santa Catalina** (10°29'N., 85°53'W.) lie close together 3.2 miles SW of Islas Brumel. These islands are an important landmark and are not easily mistaken. The islands rise to an elevation of 70m with 30m high cliffs on all sides. The surface above these cliffs is grass-covered and the resemblance to a stone fortification with tufted parapets is striking. The opening between the two islets is only visible from the SW.

A shoal bank, with above and below-water dangers, lies about midway between Islas Santa Catalina and the mainland 5

miles SE. The channel to the E of these dangers is deep and clear, but vessels passing to the W should give them a wide berth, not venturing E of a line drawn from Islas Santa Catalina to Cabo Velas.

**7.12 Bahia Potrero** (10°28'N., 85°48'W.), together with Bahia Brasilito (Braxilito) close S of it, are two small, open bays which indent the coast to the E of Islas Santa Catalina. A narrow peninsula, with Isla Plata (Isla Eyre) off its outer end, separates the two bays, which are occasionally frequented by vessels, with local knowledge, loading timber. Both bays are considered to be fairly secure anchorages despite a prevalent sea.

Depths in Bahia Potrero shoal gradually from 27.4m in the entrance. Depths in Bahia Brasilito decrease to 9.2m about 0.5 mile from its head.

Anchorage can be taken on the SW side of Bahia Potrero and as convenient in Bahia Brasilito in depths of 13 to 18m.

**Cabo Velas** (10°22'N., 85°53'W.), 4 miles SW of the S entrance point of Bahia Brasilito, has Monte Hermoso, 234m high, rising immediately behind it and marking this important turn in the coast. The sides of the mountain slope gradually and the short, narrow ridge running E and W has a slight depression which gives it a saddle-shaped appearance. The E summit is round and the W summit is sharp. When approaching from the W, Monte Hermoso will first be sighted as a conical hill seaward of the higher hills inland. When first seen from the S, Monte Hermoso has the appearance of an island. Cabo Velas is well wooded, and off the coast to the SE of it are several islets and rocks.

**Caution.**—Vessels of deep draft should not approach within 3 miles of the coast between Punta Guiones and Cabo Velas and should guard against being set to the E.

Several shoal areas have been reported to lie close W of the 200m curve along the Costa Rican coastline.

## Cabo Velas to Golfo de Nicoya

**7.13 Bahia Tamarindo** (Barca Quebrada) (10°19'N., 85°52'W.), entered between Cabo Velas and Punta San Francisco (Wreck Point), 4 miles S, although exposed, provides anchorage to vessels with local knowledge. Vessels can anchor about midway between Punta San Francisco and a rocky reef which lies 0.7 mile offshore and 1.5 miles S of Cabo Velas.

The coast between Bahia Tamarindo and Punta Guiones, 28 miles farther SSE, is fringed by foul ground extending up to 2 miles offshore in places. A group of red-roofed houses on Punta Filibusteros, 14 miles S of Punta San Francisco, is a useful landmark.

**Punta Guiones** (9°54'N., 85°41'W.), when viewed from either side, appears as a wooded hill, 110m high, with a gradual descent to overhanging cliffs. Numerous sunken dangers extend seaward from the point and it should be given a wide berth, especially at night, when it is difficult to make out. Vessels approaching from the NW should allow for a NW set which attains a velocity of up to 2 knots in the winter. Punta Guiones has been reported to be radar conspicuous.

**Bahia Carrillo** (Bahia Piedra Blanca) (9°52'N., 85°30'W.), small in extent and about 0.8 mile wide between the entrance points, lies 11 miles E of Punta Guiones. The vicinity may be identified by Piedra Blanca, a large white rock lying close SW of the W entrance point.

The entrance width is narrowed to about 0.4 mile by a rocky reef which extends 0.5 mile SE from the W side of the entrance. Depths decrease from 18m in the entrance to 5.5m about 0.1 mile from the head of the bay.

The small bay 2 miles W of Bahia Piedra Blanca, although fairly deep, is rocky and unsafe.

**7.14 Punta Bejuco** (9°54'N., 85°20'W.), a sharp and rocky projection, extends from the coast 10 miles E of Bahia Piedra Blanca.

**Punta Coyote** (9°45'N., 85°16'W.), 5 miles SE of Punta Bejuco, is similar in aspect, but more projecting. A small non-navigable river discharges into the bay close N of the point.

The coast between Punta Coyote and Cabo Blanco, 5.5 miles SE, is wooded and intersected by several small rivers. Anchorage can be taken anywhere along this section of coast in depths of 18 to 37m, sand and mud, but it is not advisable to venture inside of the 20m curve.

The coast between Cabo Velas and Cabo Blanco is backed by Cerros de San Blas and Cerros de la Habana, the summits of which attain elevations of 1,017 and 651m, respectively. Cerro Marquenco (Mount Boughey), 780m high, is a cone-shaped summit rising 38 miles NW of Cabo Blanco near the W end of Cerros de la Habana. Pico Partido (Split Peak), 790m high, rises 15 miles N of Cabo Blanco and can be identified by a distinctive cleft visible from the W. Cerro Marquenco and Pico Partido are the only two summits likely to be identified in the Cerros de la Habana range.

**Cabo Blanco** (9°33'N., 85°07'W.), 21 miles SE of Punta Coyote, is the seaward termination of a fairly high plateau that forms one of the most striking landmarks along this coast, especially for vessels approaching from the W. The more elevated part of the terrain extending inland resembles a long island when viewed from some distance seaward.

The cape and the land in the vicinity have been reported to be radar conspicuous.

A stranded wreck lies 1.5 miles NW of Cabo Blanco, close SW of Punta Coquitos.

**Isla Cabo Blanco** (9°32'N., 85°07'W.), oval in shape, barren, and composed of white rock, rises to an elevation of 69m. The channel between the islet and the cape is about 1 mile wide, but is not recommended. A light is shown from the summit of the island. A high rock lies close off the SE side of the islet and appears as a white sail from a distance.

**Guardian Bank** (9°22'N., 87°27'W.) lies 130 miles W of Cabo Blanco. Soundings over this narrow bank, which extends about 45 miles in a NNW-SSE direction, have been reported to be 9 to 31m. In 1981, depths of less than 11m were reported to exist E of the charted bank.

## **Golfo de Nicoya (9°35'N., 84°49'W.)**

**7.15** Golfo de Nicoya, one of the most expansive bodies of water on the W coast of Central America, is about 34 miles wide at the entrance between Cabo Blanco and Punta Judas. It

penetrates inland for about 52 miles in a N and NW direction, narrowing to a width of 5.5 miles 26 miles above the entrance and then increasing to an average width of 8 miles to its head. Puntarenas lies at the narrowest part of the gulf, on the E shore, 26 miles above the entrance.

A considerable number of islands, rocks, and shoals lie along the W shore of the gulf, whereas, the E shore is comparatively free of dangers. Vessels entering the gulf pass E of these islands and other dangers.

The W side of the Golfo de Nicoya borders an uncultivated region which is seldom visited by commercial shipping.

**Bahia Ballena** (9°43'N., 85°00'W.), lying 12 miles NE of Cabo Blanco and entered between Punta Piedra Amarilla and Punta Tambor, 2.8 miles ENE, is a small, deep coastal indentation. Depths range from 42m in the entrance, to a depth of 9.1m about 0.5 mile from its head.

Bahia Murcielago (Bahia Falsa), a small and open bay, lies close N of Bahia Ballena.

**7.16 Islas Tortugas** (9°46'N., 84°54'W.) lies about 3 miles NE of Bahia Murcielago. These islands lie on a shoal bank separated from the mainland by a channel about 0.5 mile wide and having depths of 20m.

**Islas Negritos** (9°49'N., 84°50'W.), two high, narrow, and heavily wooded islands, lie 4.5 miles NE of Islas Tortugas.

Sail Rock lies at the outer end of a ledge which extends about 0.2 mile E of Negritos Afuera, the E island. Strong currents and tide rips are experienced off this large rock and it should be given a wide berth when passing.

A light is shown from a metal framework tower situated on the E end of Isla Negritos Afuera.

The coast to the W of a line drawn from the E tangent of Negritos Afuera to Isla San Lucas, about 8 miles NW, is indented by two shallow bays fronted by several small islets and detached shoals. A drying shoal lies about midway between the two islands.

**Isla San Lucas** (9°56'N., 84°54'W.), 125m high and of irregular shape, lies 3 miles SW of Puntarenas at the turn of the gulf. A foul channel, about 0.5 mile wide, separates the island from Punta Gigante to the SW. A penal colony is situated on the NW side of the island and landing is strictly forbidden.

Between Isla San Lucas and Isla Chira, 15 miles NW, the navigable waters of the gulf, as defined by the 10m curve, decrease to a width of 2 miles N of the E extremity of the latter island. The best water is found along the E shore of the gulf. Above Isla Chira, the depths shoal rapidly and numerous drying flats are encountered. Small native coasters regularly navigate the upper reaches of the gulf and the Rio Tempisque, which discharges into its head.

A ferry operates close N of Isla San Lucas, calling at the ports situated at Playa Naranjo and La Punta.

**Isla Chira** (10°06'N., 85°09'W.), 14 miles NW of Isla San Lucas and the largest island in the upper part of the gulf, rises to an elevation of 173m in its W part. This island is surrounded by shoals on all except its NE side, where anchorage can be taken in depths of 9 to 11m about 0.5 mile offshore.

The E side of the gulf between Punta Judas and Punta Herradura, 12 miles NW, and then to Punta Caldera, 15 miles farther NNW, is bordered by deep water within 1.3 miles of the

shore and backed by heavily wooded slopes. Between Punta Caldera and Puntarenas, 8 miles NW, the coast trends N and then W to form a fairly deep bay where anchorage can be taken by vessels awaiting a berth at Puntarenas.

**Punta Judas** (9°31'N., 84°32'W.), the E entrance point of the Golfo de Nicoya, lying 34 miles E of Cabo Blanco, may be identified by Monte Judas, a heavily wooded peak which rises to an elevation of 98m about 0.3 mile inland. Vessels are advised to give this point a berth of at least 2 miles in order to avoid the drying reef extending about 1 mile SW from it. The sea breaks heavily on this reef.

Cerro Herradura, the NW spur of the mountain range inland, rises abruptly from the coast to an elevation of 782m about 11 miles N of Punta Judas. Cerro Turabales, 17 miles NNE of the same point, can be seen rising over Cerro Herradura when viewed from the entrance. This prominent peak rises to a small conical summit, 1,682m high.

**Bahia del Jaco** (9°36'N., 84°38'W.), entered close N of Punta Guapinol, 7.5 miles NW of Punta Judas, provides a fair anchorage in depths of 11 to 20m, between November and March, for vessels with local knowledge.

**Bahia Herradura** (Puerto Herradura) (9°39'N., 84°40'W.), entered between Isla Herradura (Isla Cano) to the S and Punta Herradura to the N, is a small, crescent-shaped bay obstructed in its central part by Roca Havannah, a patch with a least depth of 0.6m, lying 0.5 mile N of the E end of Isla Herradura. Care should be taken when entering to avoid this sunken danger as it seldom breaks, even at LW. The bay provides anchorage, protected from all except W winds, but it is seldom used.

Isla Herradura, whose sides rise abruptly and terminate sharply at its crest, is 125m high and is connected to the mainland by a reef which almost dries. The island is a prominent landmark for vessels approaching from the SE. A light is shown from a metal tower at an elevation of 99m.

**Punta Sucia** (9°41'N., 84°40'W.) is located 2.8 miles N of Punta Herradura, and Punta Leona lies 0.8 mile farther NE.

**7.17 Bahia Rio Grande** (9°46'N., 84°39'W.), entered between Punta Leona and Punta Torres, 12 miles NNW, has the Rio Grande de Tarcoles at its head. The bay is generally deep, but the bank extends about 1 mile offshore in the vicinity of the mouth of the river. There are four villages scattered at intervals of about 1 mile along the shore of the bay to the NE of Punta Leona. The village of Tivives stands on the shore 4.5 miles SE of Punta Caldera. This latter point is high, wooded, and prominent when viewed from the S.

**Bahia Caldera** (9°55'N., 84°44'W.), is entered between Punta Corralillo and Roca Carballo, located 2.5 miles N. In the bay, a restricted area, having a radius of 250m, surrounds a wave recorder buoy moored 0.5 mile NW of Punta Corralillo. A submarine cable connects the buoy to the shore E of it. The bay is clear and unobstructed, with a least depth of 10m within 0.5 mile offshore.

### **Puerto Caldera (9°55'N., 84°44'W.)**

World Port Index No. 15500

**7.18** Puerto Caldera lies 1.3 miles S of the village of Caldera at the S side of Bahia Caldera. It is a major container

port and the principal port terminal for the railway from San Jose.

The port consists of a concrete 490m long wharf aligned in an ENE direction which is protected by a breakwater. This wharf is used to handle break-bulk and containerized cargo and has three berths. The port is designed to replace the facilities at Puntarenas. It is the site of an offshore submarine oil facility. The port is also equipped to handle ro-ro and solid bulk cargoes.

**Winds—Weather.**—Strong S winds cause seas to break over the breakwater, making the port untenable.

**Depths—Limitations.**—Berth No. 1 is 210m long, with a depth alongside of 11m and can handle vessels of up to 25,000 dwt. Berth No. 2 is 150m long, with a depth alongside of 10.1m and can handle vessels of up to 15,000 dwt. Berth No. 3 is 130m long, with a depth alongside of 7.3m, and can handle vessels of up to 5,000 dwt. Vessels of up to 205m in length, with a draft of 10m and a maximum of 25,000 dwt can be accommodated.

There is a mooring buoy for tankers in Caldera Bay, situated 305m offshore. Tankers moor at the offshore berth by using the starboard anchor and running lines to three additional buoys. Vessels of up to 175m in length and 9.9m draft can be accommodated.

**Aspect.**—Five buff-colored storage tanks stand along the shore.

**Pilotage.**—Pilotage is compulsory. Vessels should send their ETA 24 and 12 hours in advance. Pilots board about 2 miles SW of the breakwater. Tugs are compulsory for berthing and unberthing.

**Anchorage.**—Good, unobstructed anchorage can be taken in Bahia de Caldera, but a rough sea is usually raised at the time of HW during the month of January. Strong N winds are frequent at this time of year.

**Caution.**—Depths of as little as 6m have been reported (1999) alongside the berths.

**7.19 Bahia Barranca** (9°57'N., 84°46'W.) is the bay into which Rio Barranca flows, arriving close N of Punta Farallon, a point lying 3.5 miles N of Punta Corralillo. The bay is contained between Punta Farallon and the shore 2.5 miles NW of it.

**Depths—Limitations.**—An offshore berth lies 4 miles NW of Puerto Caldera, in Bahia Barranca. A pipeline is connected to the berth for the discharging of ammonia to a fertilizer plant ashore, 2 miles NNE, where a conspicuous chimney stands. Two small buoys mark the end of the submerged pipeline laid NNE to the shore. Vessels secure to four mooring buoys in a depth of 12.2m. There is nearly always a moderate to heavy swell from the S or SW at the berth.

**Pilotage.**—The pilot boards at the anchorage.

**Anchorage.**—Anchorage for vessels waiting to use this berth lies E of the pierhead at Puntarenas.

### **Puntarenas (9°59'N., 84°50'W.)**

World Port Index No. 15510

**7.20** Puntarenas, lying midway along the E shore of the gulf, is a port of entry. At one time, one-half of the foreign

trade of the country passed through this port, however Puerto Caldera, now considered an extension of Puntarenas, handles most cargo discharged in the region. Puntarenas remains the primary off-loading port for bulk cargoes. The harbor N of the town is shallow and is suitable only for small craft with local knowledge.

**Winds—Weather.**—There are only two seasons, the rainy and the dry, the former generally lasting from April through November. During the rainy season, the winds are from the SSW and in September and October often reach gale force, accompanied by heavy rain. During the dry season, calms prevail, but in the evening there are often violent "Chubascos", which are from a direction between N and E and are accompanied by heavy rain. These rain storms last close to an hour. The N winds, which are considered dangerous to shipping during February and March, do not generally jeopardize operations underway at the mole, but rather, due to the protection afforded by the spit, are most hazardous at a position about 1 mile to the S. Southerly winds are broken by the Islas Negritos and the peninsula that forms the W shore of the gulf. During the afternoon, at times, strong W winds set up a choppy sea, but do not affect large vessels. Easterly winds are seldom troublesome.

**Tides—Currents.**—At Puntarenas, the tides rise 3.2m at springs and 1.6m at neaps. The flood current sets W and the ebb current ESE with a strength of 1 to 1.5 knots. Currents with a velocity of as much as 2 knots have been observed.

The flood current in Golfo de Nicoya sets NE, then N, and then, off Puntarenas, to the W; the ebb sets in the reverse directions. The flood current off Punta Herradura has a slightly NW set, but it is hardly strong enough to be noticeable. Strong tide rips will be found off Sail Rock.

The flood current, on entering Golfo de Nicoya, sets directly toward the mouth of the Rio Barranca, causing the sediment of the river to deposit most heavily at the mouth and also, to some extent, along the shore to the W. These currents then set W at a maximum rate of 2 knots. From a position E of Angostura, the rate decreases, varying from 1.5 to 1.7 knots, until near the mole where it again increases and sets away from the shore. The ebb sets in a contrary direction.

**Depth—Limitations.**—Depths in the approach to Golfo de Nicoya, between the entrance points and as far N as Puntarenas, are deep and clear and no exceptional difficulty should be experienced by entering vessels.

Alongside berthing facilities are provided for ocean-going vessels at the Commercial Pier, extending 600m S from a position 0.5 mile E of the hospital. There is a depth of 9.1m alongside the inside berth of the pier at HW and a depth of 10.6m alongside the outside berth of the pier at HW.

The roadstead lies E of a bank, with depths of less than 11m, which extends 4.5 miles SSE from Puntarenas and separates it from the main channel leading through the gulf. There are several patches having depths of less than 5.5m on this bank and the shallowest depth of 3.3m lies about 1 mile SW of the pier at Puntarenas. The entire area between this bank and the mouth of the Rio Barranca, 4 miles E, is clear of dangers with suitable depths for anchoring.

A dangerous wreck, marked by a buoy, lies 0.8 mile W of the light situated at the end of the pier.

Three mooring buoys lie at the seaward end of a submarine pipeline, about 1.3 miles E of the above pier and 0.5 mile offshore. Vessels with a draft of 7.3m can be accommodated at this berth.

**Aspect.**—The high mountains which serve to identify the entrance of the gulf from seaward have been previously described. On closer approach to Puntarenas, a conspicuous church spire in the town and a red-roofed building near the pier can be readily identified. A light is shown from the head of the pier.

**Pilotage.**—Pilotage is not compulsory for vessels anchoring in the roadstead, but is compulsory for vessels berthing at the pier. The pilot boards vessels about 2 miles SE of the pier. The pilot will take vessels alongside at night, but prefers to wait until daylight.

**Signals.**—Vessels berthed alongside the pier must sound the following whistle signals:

Signal	Meaning
One long blast	Shore line parted
One long/ two short blasts	Line to mooring buoy parted

The pilot and mooring party will shift the vessel at any hour of the day or night.

Vessels about to sail sound the following signals:

Signal	Meaning
Four long blasts 1 hour before sailing	Request for customs clearance.
One long and two short blasts	Clearance papers are onboard and a pilot and mooring party is requested.

**Anchorage.**—Anchorage can be taken during the dry season, from November to April, about 0.6 mile SE of the light on the mole in depths of 9m, but the depths farther to the E are also convenient for anchoring. During the summer and autumn, heavy rollers set in from the SW and it is necessary to anchor farther out. The holding ground is poor and anchors are liable to foul in the process of a vessel swinging to the currents and winds.

**Caution.**—Lesser depths than charted have been reported in the roadstead and vessels are advised to use caution.

A heavy surge is experienced at the Commercial Pier at certain times of the year.

## Golfo de Nicoya to Quepos

**7.21** The coast between Punta Judas and Punta Quepos, 23 miles ESE, is fronted by deep water within 0.5 mile offshore and backed by low land rising gradually to the high mountain ranges in the interior. An extinct volcano, with a crater 2 miles wide across the top, rises to an elevation of 2,420m about 20 miles ESE of Cerro Grande de Turabales and 14 miles inland. A number of elevations along the brink give the summit the appearance of a lofty serrated ridge. A dome-shaped mountain rises to an elevation of 2,169m about 4 miles S of the extinct volcano.

**Punta Quepos** (9°24'N., 84°10'W.) is a bold prominent point, 146m high, and the termination of a series of densely wooded bluffs. Flat Rock, awash at LW and the outermost danger, lies about 0.4 mile SW of the point. A 2.1m shoal, which breaks at half-tide, lies 0.8 mile N of Flat Rock. A light is shown from Punta Quepos

**Quepos** (9°24'N., 84°10'W.) (World Port Index No. 15490), a small banana exporting terminal, lies 1.5 miles N of Punta Quepos.

**Depths—Limitations.**—The main wharf extends 140m from two islets, lying close offshore on the S side of the entrance of Boca Vieja Creek, which are connected to the mainland by a trestle bridge. There is a breakwater to protect vessels at the main wharf and lighters discharge at the smaller wharf. Vessels not exceeding 152m in length and a draft of 8.2m can be accommodated alongside.

A considerable swell is usually experienced and two mooring buoys are used to breast vessels off the wharf while working cargo. Heavy springs and wires are provided when securing.

**Pilotage.**—Pilotage is not compulsory, but advisable if berthing alongside. The pilot boards about 1 mile off the wharf and under favorable conditions will take a vessel in at night.

**Anchorage.**—Anchorage can be taken SW of the wharf, in a depth of 29m, about 1.2 miles N of Punta Quepos.

## Quepos to Cabo Matapalo

**7.22 Islas de los Quepos** (9°22'N., 84°09'W.), a group of detached islets and rocks, lie between 1 mile and 4.5 miles SE of Punta Quepos. Isla Toro Amarillo, 30m high, is the S islet of the group. During thick weather, this islet is easily recognized because of its distinctive red color. A sunken rock, awash at LW, lies almost 0.5 mile S of the islet. Vessels should give this chain of islets and other dangers a wide berth and not attempt to pass inshore of them.

**Punta Uvita** (9°09'N., 83°46'W.), lying 28 miles SE of Punta Quepos, is the N entrance point of Bahía Uvita. The point is fronted by two spurs of foul ground, one extending 2 miles to the W and the other 1 mile to the S. Numerous small, above-water dangers lie on these spurs. Isla Uvita, small in extent and circular, lies close SW of the point and Barrel Rock, 6.4m high, lies 1.3 miles W of the islet. Both of the above spurs are marked by tide rips.

**Bahía Uvita** (9°08'N., 83°44'W.), which lies S of Punta Uvita, is entered between that point and the spur of foul ground S of it and Round Rock, 1.5 miles SSE. A ridge of foul ground, marked by above and below-water dangers, breakers, and tide rips, extends in a general E direction from the rock almost to the mainland 3 miles distant. Isla Ballena, white in color and 35m high, lies on this foul ground 1 mile ESE of Round Rock. This islet shows up well from seaward and is the best landmark for approaching the bay.

Several huts stand on Isla Uvita in the N part of the bay and can be seen for several miles.

Anchorage can be taken as convenient in the N part of the bay in a depth of 12m, sand, 0.7 mile ESE of Isla Uvita.

**Cerro Chirripo Grande** (Mount Walker) (9°28'N., 83°31'W.) rises to an elevation of 3,783m about 23 miles NE of

Bahía Uvita and is one of the loftiest summits in Central America.

**7.23 Punta Mala** (9°05'N., 83°41'W.), bold and cliffy, lies 2.5 miles SE of Bahía Uvita and is the seaward spur of the high mountain range which rises in the interior. South of the point, the coast is backed by a low plain covered by mangroves as far S as Punta Violin, a distance of about 22 miles. A shoal, coastal bank, with depths of 10m and less, extends up to 2 miles offshore in places along this section of coast.

**Punta Violin** (8°48'N., 83°40'W.), lying 18 miles S of Punta Mala, rises to an elevation of 250m and is fronted by a group of small, wooded islets, known as Islas Violin, which lie 1 mile offshore. Vessels passing along this section of coast are advised to pass about 1 mile W of these islets and Islas Sacate, lying 2.5 miles N.

**Punta San Jose** (8°41'N., 83°43'W.), a bluff headland with deep water close offshore, lies 7.5 miles SSW of Punta Violin, and may be recognized by a large green patch on its seaward slope.

**Punta San Pedro** (8°39'N., 83°44'W.), a cliffy projection fringed by submerged rocks, lying about 3 miles S of the above point, has been reported as being radar conspicuous. Lowrock Reef, which breaks, lies 1 mile offshore, midway between these two points.

**Punta Llorona** (8°36'N., 84°45'W.), 3 miles S of Punta San Pedro, is a high, almost perpendicular headland which extends inland to a well-wooded plain, 150m high. This point can easily be distinguished at a distance of 15 miles, and on closer approach, a number of red patches on the face of the cliff can be seen. Punta Llorona has been reported to be radar conspicuous.

Vessels navigating along this coast between Punta San Pedro and Punta Llorona can avoid the fringing coastal dangers by keeping at least 1 mile offshore.

**7.24 Isla del Cano** (8°43'N., 83°53'W.), 10 miles NW of Punta Llorona and steep-to within 0.5 mile offshore, rises abruptly to a flat top with an elevation of 123m. Anchorage can be taken off the NE side of this heavily wooded island in a depth of not less than 27m.

A light is shown from the W end of the island. Isla del Cano has been reported to be radar conspicuous.

A depth of 18m was reported to lie about 3 miles SSW of Isla del Cano Light.

**Punta Salsipuedes** (8°27'N., 83°35'W.) lies 13 miles SE of Punta Llorona, is high and precipitous, and may easily be recognized from the E or W by the natural terrace behind it. A reef, marked by above and below-water rocks, extends 0.6 mile S and W from the point.

The coast between Punta Llorona and Punta Salsipuedes, which is low, sandy, and featureless, is fronted by several above-water rocks which lie within 2 miles of the shoreline. Roca Corcovado, 18m high, is the largest rock and dome-shaped. This rock, which lies about midway between the two points, should be given a berth of at least 1 mile when passing. A current setting N and W at a rate of 1.5 knots is usually encountered in the vicinity of Corcovado Rock.

A shoal area, with depths of 13 to 18m, lies 17 miles SW of Punta Salsipuedes.

**Cabo Matapalo** (8°23'N., 83°18'W.), the W entrance point of the Golfo Dulce, lies 17 miles E of Punta Salsipuedes. The intervening coast is backed by mangrove-covered low land rising abruptly to the mountain range a few miles inland. Depths of 18m and greater lie within 0.5 mile of the shore.

Cabo Matapalo is high, steep-to, and covered with trees. A conical rock, prominent from the W, lies close SE of the cape. Roca Matapalo, a dark rock lying 0.5 mile SE of the cape, is prominent from the SW. Cabo Matapalo has been reported to be radar conspicuous.

### Cabo Matapalo to Punta Burica

**7.25 Golfo Dulce** (8°23'N., 83°13'W.), entered between Cabo Matapalo and Punta Banco, 8 miles E, extends 11 miles N and then 17 miles NW to its head. The gulf has a commercial port and the rest of the region is sparsely populated. Puerto Golfito, a banana exporting port, lies in a small land-locked bay on the E side of the gulf, 15 miles within the entrance.

The depths throughout the gulf are deep to within 1 mile of the shore except in the vicinity of the Rio Coto, located on the E side of the gulf, 12 miles inside the entrance. The bank fronting this river extends up to 1.5 miles offshore, but it is usually marked by breakers and can easily be avoided.

The position of the gulf is easily recognized by the terrain on either side of the entrance. The E side rises to a height of 709m at the summit of Pico Burica, located 9 miles E of Punta Banco. The W side of the entrance rises gradually from a height of 404m, about 3 miles NW of Cabo Matapalo, to a height of 615m 12 miles farther NW.

The W shore of the gulf between Cabo Matapalo and Punta Arenitas, 10 miles to the N, consists of flat, well-wooded country rising gradually to high terrain about 1 mile inland. The fringing shoals extend up to 0.5 mile offshore along this section of coast.

Golfo Dulce can accommodate vessels with a maximum length of 195m, beam of 30m, and draft of 13m.

**Punta Arenitas** (8°32'N., 83°17'W.), lying 9 miles N of Cabo Matapalo, is a low, sandy point bordered by shoal depths on its NE side. The village of Puerto Jimenez (San Domingo) stands on the inshore side of the point. The houses are partially obscured by trees and difficult to distinguish.

The coast between Punta Arenitas and Punta Isidora, 15 miles to the NW, remains low and heavily wooded, but is steep-to within a short distance offshore.

**Bahia Rincon** (8°43'N., 83°29'W.), a small, deep, crescent-shaped indentation, lies N and W of Punta Isidora and provides the only good shelter in the gulf N of Puerto Golfito. A conspicuous yellow patch on one of the cliffs to the E of the bay is visible from the entrance of the gulf. A conspicuous tank stands near the shore in the SW corner of the bay. Two piers extend from the shore N of the bank.

Anchorage can be taken off Punta Arenitas in a depth of 18m about 1 mile to the SE. Anchorage can be taken NW of the point, but the water is deep a short distance offshore. Vessels are advised not to anchor in depths of less than 27m. Secure,

well-sheltered anchorage can be taken as convenient in Bahia Rincon.

The shore at the head of the gulf to the E of Bahia Rincon, and then as far SE as Punta Voladera (8°38'N., 83°12'W.), is indented by several small bays. Depths along this section of coast generally are deep within 0.5 mile of the shore.

**7.26 Puerto Golfito** (8°38'N., 83°11'W.) (World Port Index No. 15480) lies in a land-locked bay on the NE side of the gulf. The entrance, which lies between Punta Voladera on the N side and the peninsula extending N from the Rio Coto, is about 0.3 mile wide in its outer part, but narrows in its inner reaches. Ample depths are available in the fairway leading to the berthing facilities in the NE corner of the upper bay, but elsewhere the depths shoal rapidly. Numerous drying flats encumber the S half of the bay to its head.

**Tides—Currents.**—There are fairly strong tidal currents in the anchorage. The flood current may not run parallel to the wharf and caution is necessary.

From January to June, the average tidal range is 2.8m. During the remainder of the year, the range is about 3.1m. Vessels are usually berthed starboard side-to, but on the ebb tide, it is reported that vessels have berthed port side-to.

**Depths—Limitations.**—Depths in the entrance channel decrease from 20.1m S of Punta Voladera, to a depth of 15.2m about 1 mile SW of the main wharf, and then decrease to depths of 8.3 to 12.3m in the pier area. Depths decrease gradually to a depth of 9.1m about 1 mile SE of the berthing facilities.

The main wharf is 317m long, with an alongside depth of 7.3 at the banana pier and a depth of 7.9m at the general cargo berth. Vessels berth starboard side-to. Two ocean-going vessels can be accommodated simultaneously. The minimum depth in the approaches is 9.1m.

**Aspect.**—A wooded hill, 263m high, rises from the low, sandy peninsula, on the SE side of the entrance. Located about 2.5 mile SE is another hill, similar in appearance, but slightly higher, which is more prominent to vessels in the gulf, as the coast S of it is comparatively flat for several miles.

Adam's Peak, 526m high, with a radio mast marked by obstruction lights standing on the summit, is a conical summit at the NW end of a steep ridge on the NE side of the harbor.

The entrance to the harbor is marked by a lighted range. Several lighted aids mark the outer extremities of the principal shoals found around the perimeter of the harbor area.

The lighted beacon S of Punta Voladera and a similar beacon on the S side of the entrance channel have been reported to be radar conspicuous.

**Pilotage.**—Pilotage is not compulsory, however, the port authority will provide pilotage if requested through the agent at least 24 hours in advance. Vessels should make contact 1 hour before arrival. Pilots board at the entrance to the channel.

Berthing and unberthing should not be attempted at night.

**Anchorage.**—Anchorage is available in the NW part of the harbor. The holding ground is good and the anchorage is sheltered. Fairly strong currents are usually experienced in this part of the harbor.

Anchorage is not permitted off the pier, but may be found in a depth of 13m about 0.3 mile SSE of the head of the main wharf. It has been reported (1998) ocean-going vessels load



**Puerto Golfito Range**

woodchips from barges in this position. Vessels anchor with their stern secured to two mooring buoys, which maintain the vessel's bow in a SSW direction. Vessels up to 49,000 dwt, with a maximum draft of 13m, a maximum beam of 30m, and a maximum length of 195m, can be accommodated.

**Caution.**—Depths of less than 7.3m have been reported on the range line. Depths in the S part of the bay, which is encumbered by numerous drying banks, decrease rapidly.

**7.27 Rio Coto** (8°33'N., 83°10'W.), which discharges into the gulf 9 miles SSE of Punta Voldadera, is shallow and fronted by an extensive drying bank which extends about 1.5 miles seaward of the entrance. The outer edge of the bank is steep-to and usually breaks.

Between Punta Coto and Punta Banco, 10 miles S, the coast is indented by Bahia Pavon, a broad expanse of water with moderate depths. Anchorage, exposed to SW winds, can be taken anywhere within the bay in depths of 7 to 15m.

**7.28 Punta Banco** (8°23'N., 83°09'W.), the E entrance point of the gulf, is not prominent, but as the entrance is neared, it can be distinguished at the foot of the NW slope of Punta Platanal. Vessels rounding the point should give it a



**Golfito Buoy**

berth of at least 1 mile in order to avoid the foul ground extending about 0.5 mile offshore.

**Punta Platanal** (8°21'N., 83°07'W.), 3 miles SE of Punta Banco, rises abruptly to a height of 357m and has a very conspicuous flat top.

The coast between Punta Platanal and Punta Burica, about 23 miles SE, is fronted by deep water within 1 mile of the shore and backed by high hills.

Isla Burica, small in extent and high, lies 0.5 mile S of Punta Burica, to which it is connected by a reef. A black above-water rock lies 1.3 miles NW and some sunken rocks lie S of the islet.

A strong NW current is experienced off the islet during the flood. Vessels passing this section of coastline should give the islet a berth of at least 1 mile. A light is shown from the island.

**7.29 Punta Burica** (8°02'N., 82°52'W.), the outer end of a long peninsula that forms the W side of Bahia Charco Azul, rises abruptly from the sea to an elevation of 357m, and is an excellent landmark from any direction. In clear weather it has been sighted at a distance of 35 miles.

The point has been reported to be radar conspicuous and identifiable with relationship to charted features at a distance of 18 miles.