

SECTOR 2

COASTS OF COLOMBIA AND ECUADOR

Plan.—This sector describes the W coast of South America from Isla Mono, at the Panama/Colombia boundary, to Canal de Jambeli, at the Ecuador/Peru boundary. The sequence of the description is from N to S.

General Remarks

2.1 Most of this coast is low, with sandy beaches interrupted by rocky points and prominent headlands. Inland, mountain ranges often parallel the coast. There are also detached mountains and hills backing the coast in various places. Numerous islands, some contiguous with the shore, lie near river deltas and off the many bays which indent this coast.

Buenaventura and Guayaquil are the most important ports on this coast. There are many secondary ports where cargo is loaded and discharged while at anchor in open roadsteads.

Winds—Weather.—The climate of this region is influenced by the Peruvian Current. Along the N part of the W coast of Colombia, winds from the NW to NE prevail, except in September and October, and are quite dependable from December to April. From May to August they alternate with SW winds. In September and October, SW winds prevail, but with frequent changes to N. Gales from the N or NE occur occasionally, chiefly from December to February, but they are rare from any other direction.

Along the S coast of Colombia, a SW wind sets in about April and becomes increasingly steady until September and October. It then diminishes in steadiness and is replaced in February and March by N winds. The SW wind is dependable only from August to December. Gales are practically unknown along this part of the coast.

The prevailing winds along the coast of Ecuador are S to W throughout the year, but are more steady from that quarter from June to November. North winds occur occasionally from late January to early April. Gales are practically unknown. The average velocity of the wind is about 8 knots. Heavy squalls and thunderstorms sometimes occur.

Fog is extremely rare over the open sea along the coasts of Colombia and Ecuador.

Tides—Currents.—The currents off the coast are influenced by the northerly Peruvian Current and by a S current, known locally as "El Nino," that occurs in the first part of the year along the coast of Ecuador.

On the main shipping tracks between Panama and the Equator, the current may set in any direction throughout the year. The majority of the currents observed exceed a rate of 1 knot, except for the predominantly N current off the coast of Colombia. A small percentage of the currents observed have exceeded 2 knots, except from August to September, and set mainly in W directions. Currents of a local nature are described in the various parts of this chapter with the features off which they occur.

The tidal currents between Isla Mono and Cabo Blanco are not reckoned with, as the ocean current effect is much greater.

Regulations.—For details on regulations pertaining to vessels approaching the coast and waters of [Colombia](#) and [Ecuador](#), see Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia.

Caution.—Offshore oil fields are encountered off this coast roughly from a point NW of Punta Malpelo (3°30'S., 80°30'W.), to a position S of Punta Parinus (4°40'S., 81°22'W.). Rigs, production platforms, submarine pipelines, and various other types of hazards, both above and below-water, may be associated with these oil fields, some of which may be lighted. Vessels are urged to exercise the appropriate caution when navigating along this coast.

Peruvian authorities advise that oil rigs may be found between the parallels of 3°S and 5°S.

Isla Mono to Buenaventura

2.2 Isla Mono (7°13'N., 77°53'W.) lies 0.5 mile offshore in the vicinity of the boundary between Panama and Colombia. The intervening coast between Isla Mono and Bahia Ardita is high, rugged, heavily wooded, and steep-to within 0.5 mile of the shore.

Between Isla Mono and Punta Solano, about 65 miles SE, the coast is indented by several bays, and numerous small rivers flow into the sea. Much of the coast is high, partly steep-to, with bluff headlands fringed with rocks and reefs. There are also stretches of sandy beaches backed by low land.

Bahia Ardita (7°08'N., 77°48'W.), 6.5 miles SE of Isla Mono, is a coastal indentation with a village on its N side. The bay may be identified by an islet lying about 0.5 mile S of Punta Ardita, the bay's W entrance point.

A light is exhibited on the coast, about 13 miles NW of Punta Ardita. A main light is shown, from a structure 70m high, close SE of the town of Ardita.

Punta Marzo (6°50'N., 77°42'W.) is bold, rugged, densely wooded, and lies about 20 miles SSE of Punta Ardita. A main light is shown from a tower, 15m high, standing on a small island close off the cape. Detached rocks lie up to 1.8 miles S of the cape. Rocas Octavia (6°47'N., 77°42'W.) are high, bare rocks on a detached reef lying 3 miles S of Cabo Marzo.

Bahia Octavia (6°51'N., 77°40'W.), formed by Cabo Marzo and the shore E of it, affords anchorage, in depths of 9.1 to 27.4m.

Punta Cruces (6°39'N., 77°32'W.), about 15 miles SE of Cabo Marzo, is the prominent S end of a peninsula which forms the W side of Bahia de Cupica. Rocky islets lie on foul ground which extends about 1.8 miles SE of Punta Cruces. Golfo de Cupica is a large, open bight between Punta Cruces and Punta Solano, about 22 miles S. Several small bays indent the coast within the gulf.

Bahia de Cupica (6°41'N., 77°27'W.), located close E of Punta Cruces and indented in its NE part by small bays formed between headlands, has ample depths for vessels in its middle. A beach at the head of the bay is fronted by shoal ground.

Anchorage, exposed to S winds, can be taken in suitable depths between 0.3 and 1 mile offshore.

Bahia de Solano (6°18'N., 77°25'W.) is entered between Punta Solano (6°18'N., 77°28'W.) and Punta Nabuga, a lofty promontory about 6.3 miles NE. Above and below-water rocks lies off its slopes and a chain of rocky islets, some conspicuous, lie about 2 miles SW of Punta Nabuga. Rocky patches make up a reef extending 1.5 miles NNW from Punta Solano. There is a depth of 7.5m off the outer end of the reef. A light is shown from a tower, 9m high, standing on Punta Solano. It is visible from 151° to 167°. Ciudad Mutis is a small town at the head of Bahia de Solano.

Anchorage can be taken, in a depth of 27.4m, about 1.5 miles from the head of the bay. Cargo is handled by lighters at the anchorage.

Ensenada Utria (6°02'N., 77°21'W.) is a constricted inlet extending about 3 miles N from its entrance, which lies about 19 miles SSE of Punta Solano. The W side of the inlet is formed by a narrow peninsula; the E side by the mainland. Two islets and detached above-water rocks lie up to 1.5 miles S of the S end of the peninsula. The inlet is approached E of the islets. Ensenada Utria is easily identified by Playa Baia (6°04'N., 77°24'W.), a sandy beach fringed by coconut palms, which extends 4 miles NW of the peninsula. Landing can be made on a spit at the E side of the inlet, about 1 mile within the entrance. Anchorage can be taken S of the spit, in depths of 22 to 45m.

2.3 Cabo Corrientes (5°29'N., 77°33'W.), a high, steep-to promontory, is easily identified by the dome-like Picos de Ananas, which rise about 457m, 4.5 miles ENE of the cape and are densely wooded with the peaks bright green in color. A main light is shown from a metal tower, 18m high, standing on the cape. Punta Arusi (5°37'N., 77°30'W.) is the steep-to N end of Cabo Corrientes. A constant N current runs in the vicinity of the cape.

Bahia Cuevita (5°28'N., 77°28'W.), open S, has above and below-water rocks lying up to 0.3 mile off its E entrance point. Good anchorage can be taken, in 29.3m, about 1.3 miles ENE and 0.5 mile off the W entrance point.

Bocana de Virudo (5°26'N., 77°25'W.) empties into the sea about 1.5 miles SE of Bahia Cuevita. Iglesia de Sevira, an unusual perforated rock, lies 0.5 mile off the S entrance of the river.

The coast S of Bocana de Virudo is fronted by shoal water for several miles offshore and the low, sandy shore is broken by numerous creeks and river deltas.

2.4 Punta Charambira (4°18'N., 77°30'W.) is the W entrance point of Boca Charambira, one of the N mouths of the Rio San Juan, which is reported navigable for about 180 miles inland by craft of 1.5m draft. A sand bar at the river mouth makes entry difficult. Punta Charambira, consisting of a series of low spits, is difficult to distinguish. It is the N extremity of an island which is separated from the mainland by a river. The point is reported to be a good radar target at 20 miles. There is a strong outgoing current in the river on an ebb tide and strong cross currents in the river entrance. Heavy logs are rafted down the river and off-loaded at the anchorage. Vessels, with a draft

of less than 4.5m and local knowledge, can anchor in Boca Charambira. A light is shown from the point.

Between Punta Charambira (4°18'N., 77°30'W.) and Punta Aji (3°14'N., 77°33'W.), the low, swampy coast recedes about 20 miles E to form Bahia Choco. Bahia Buenaventura and the mouth of the Rio Buenaventura lie at the head of this bay. About 2 miles N of Punta Magdalena (3°56'N., 77°21'W.) the low cliffs begin. Ensenada de Juanchaco (4°00'N., 77°19'W.) recedes about 8 miles N between Punta Magdalena and Punta Sande, 2.8 miles SE. Low cliffs back the shore between the latter point and Punta Bazan (3°50'N., 77°11'W.), the N entrance point of the Rio Buenaventura. This entire coast from Punta Charambira to Punta Soldado is fronted by shoals and foul ground for several miles.

Bahia de Malaga (3°55'N., 77°20'W.) lies in the approach to Ensenada de Juanchaco, which is entered between Punta Magdalena and Punta Sande. The bay is approached by passing either E or N of Isla Palmas, but the former is the preferred approach. Shoals, with a least depth of 0.3m, extend up to 2.3 miles W of Punta Magdalena.

Vessels, with a draft of 7.6m, can transit the bay with local knowledge.

Recent surveys in Bahia de Malaga show significant changes to depths from those charted. In particular, the shoal water N and W of Islas Palmas extends further N and the shoals in Ensenada de Juanchaco (3°59'N., 77°18'W.) have extended SW.

An area, indicated on the chart, where movement restrictions apply, has been established off Punta Alta.

Anchorage Area A, Anchorage Area B, and Anchorage Area C lie 3.5, 4.5, and 5 miles S, respectively, of Punta Alta; Anchorage Area D lies 1.5 miles E of Punta Alta. These anchorages are best seen on the chart.

There are no port services available.

2.5 Isla Palmas (3°55'N., 77°21'W.) lies about 1 mile S of Punta Magdalena. It was reported that this island was the only reliable radar target in the area. A light is shown from a metal tower, 36m high, standing at the SW end of the island, but the tower is situated within a wooded area and difficult to identify. The light is also obscured in the bay. A light marks the shoals close N of the N end of the island.

It was reported (1990) that access to the island has been restricted by order of the Colombian military.

Los Negritos (3°54'N., 77°24'W.), about 2.8 miles W of the S end of Isla Palmas, is a dangerous reef consisting of several detached rocks which nearly cover at high water. Depths of less than 5m exist up to 0.5 mile S and 0.7 mile SE of the reef. Keeping in mind the depths in the vicinity of Bajo de Negritos and Los Negritos, vessels should keep in depths greater than 20m, especially during bad weather, while in the vicinity.

Bajo de Negritos (3°54'N., 77°26'W.), a shoal area about 2.3 miles W of Los Negritos, has a least depth of 8.8m, which is marked by a lighted buoy. The shoal was reported to be extending to the S.

Canal de Juanchaco (3°56'N., 77°21'W.), the N channel leading N of Los Negritos and Isla Palmas, is about 0.5 mile wide, but the navigable portion, with depths of over 10m, is only 0.2 mile wide. The channel has a least charted depth of 16.7m, situated about 1.3 miles WSW of Punta Magdalena. The fairway is marked by lighted buoys and an approach

lighted buoy, equipped with a racon, is moored about 5.3 miles W of Isla Palmas. Islote Magdalena and another islet lie on foul ground extending at least 0.5 mile NNE and E of the NE extremity of Isla Palmas.

Canal Juan de Dios (3°54'N., 77°20'W.), the E channel between Isla Palmas and the coast E, is about 1.5 miles wide and shows depths of 5.5 to 7.3m at its seaward entrance, but there are unmarked shoal patches with depths of 1m lying adjacent to the narrow fairway.

Ensenada de Juanchaco (4°00'N., 77°18'W.) is the inner part of Bahía de Malaga. It extends about 8 miles NE from its entrance and opens out to a width of 5 miles. Much of it is unsurveyed. Archipelago de la Plata (4°01'N., 77°16'W.), at the head of Ensenada de la Plata, consists of many cultivated, wooded islets.

Buenaventura (3°54'N., 77°05'W.)

World Port Index No. 15370

2.6 Buenaventura, the principal port on the W coast of Colombia, lies about 8 miles within the mouth of the Rio Buenaventura, which empties between Punta Bazan and Punta Soldado. The river harbor is well-protected and has good berthing facilities.

Winds—Weather.—Buenaventura is a tropical port with practically no seasonal variations in weather. Daily temperature variations range from about 23° to 43°C, with an average temperature about 27°C. The humidity remains constant at about 89 per cent. The air is still, sultry, and uncomfortable, except when there are cooling breezes which frequently accompany the rising tide.

The port is in one of the heaviest rainfall belts of South America. Rain occurs almost every day, usually at night or during the early morning. However, there may be one or two brief heavy showers while the sun is shining. The greatest intensity of rainfall occurs in October and November, when tropical thunderstorms are frequent.

Tides—Currents.—The mean tidal rise here is 3m, while the spring rise is 4m. The falling tide sets out of the mouth of the river at a rate of 3 knots. The first of the rising tide comes from N at a rate of a little more than 1 knot. The current off the city attains a rate of 6 knots. Depending on the state of the tide, there is a current of up to 3 knots off the berths of the town.

Depths—Limitations.—Both the Rio Buenaventura and the port of Buenaventura are subject to siltation: The main channel through the river to the port is marked by lighted buoys which cannot be relied upon as they may be removed without notice, shifted, or carried away by the strong tidal currents in the river. They may also not mark the deepest portion of the channel, owing to the shifting nature of the banks.

The maximum draft a vessel may carry over the bar, and through the entrance channel, is governed by the height of tide at the port.

Vessels with drafts as deep as 9.1m can reach the inner harbor during high tide.

The bar, which extends across the approach to the Rio Buenaventura S of Culo de Barca, has general depths of 5.5 to 9m, but lesser depths may exist. Shoal banks and shoal patches are charted up to 1.3 miles off the N shore of the river, while a

large 5.5m shoal is charted about 2 miles SW of the same island. Depths of less than 5.5m extend up to 7.8 miles SW of Punta Soldado. Two obstructions lie 1.7 miles and 1 mile W, respectively, of Punta Soldado. It was reported that less water than charted was found in the vicinity of Lighted Buoy No. 2 and Lighted Buoy No. 7. Recent surveys (1991) show significant changes to depths, with many areas having depths 1 to 2m less than charted.

The port proper lies on the N side of Isla Cascajall (4°53'N., 77°04'W.), and consists of a marginal concrete wharf 2,126m long, plus a 200m angled berth at the W end. Thirteen ships of average length can be accommodated, allowing 168m of berthing space along the marginal wharf. The depth alongside the wharf is 7.3m at low tide. Depths alongside the wharf are maintained by constant dredging, but silting occurs very rapidly. Depths up to 2m less than the dredged depth have been reported alongside, which made it necessary to place a barge between the vessel and the dock. The bottom is soft mud, which minimizes damage to the hull if grounded, but which can enter the intakes. The main wharf will handle break-bulk and container cargoes. An oil pier is situated at the E end of the main wharf.

Aspect.—Punta Piedra is a prominent point located about 2 miles SSE of Punta Sande.

Punta Bazan, about 7.8 miles ESE of Punta Piedra, is low and wooded with a few houses. The coast between is composed of wooded, red sandstone cliffs. Culo de Barca, about 2.5 miles SE of Punta Piedra, and Vigia de San Pablo, about 4 miles W of Punta Bazan, are two small islets lying off this coast. The latter, triangular in shape, is easily identified.

Punta Soldado is located about 1.3 miles S of Punta Bazan. A light is shown from a framework tower, 17m high, standing on the point. A prominent grey building stands on the point close to the light structure.

A conspicuous red roofed house is situated about 2 miles W of Punta Bazan. Above Punta Bazan, the shore is low and wooded with an occasional cliff.

The S shore of the river is a mangrove swamp divided by small rivers and fronted by mud flats.

At the city of Buenaventura, a conspicuous church spire lies 0.3 mile SE of the spur mole, and conspicuous piles lie 1 mile W and 0.8 mile SE of the spire. Several conspicuous water tanks, antennas, and a conspicuous yellow building are situated within the town and are best seen on the chart.

Pilotage.—Pilotage is compulsory for vessels of more than 250 nrt and is available at any time, however, there is an additional charge if the pilot boards between the hours of 1800 and 0600. It is advisable to enter the channel or leave the wharf 1 hour after LW or 2 hours after HW. Vessels entering Buenaventura for the first time are advised not to enter at night. Tankers may berth only during daylight hours, but around the clock arrivals are allowed at the general cargo berths. Vessels should send an ETA 72 hours, 48 hours, 24 hours, and 12 hours in advance of arrival. Contact with the pilot station should be made using VHF 3 hours prior to arrival. At least 48 hours advance notice should be given to obtain a pilot on a Saturday afternoon or on a Sunday; at least 24 hours notice should be given at other times to avoid delay.

On request, the pilot boards at the Fairway Buoy (3°47.5'N., 77°19.2'W.) or between Lighted Buoy No. 1 and Lighted Buoy

2. The pilot may board S of Punta Bazan, between Lighted Buoy No. 22 and Lighted Buoy 23. The pilot may be contacted on VHF channel 11, 12, or 16. The signal for a pilot in the inner harbor is four prolonged blasts.

Anchorage.—Vessels may anchor in the charted anchorage areas, which are located, as follows:

1. Anchorage Area No. 1 is centered 1.2 miles W of Punta Soldado.
2. Anchorage Area No. 2 lies 4 miles NE of Punta Soldado.
3. Anchorage Area No. 3 is located 5.5 miles NE of Punta Soldado.
4. Anchorage Area No. 4 is located 0.8 mile NW of the wharf in Buenaventura. Depths range from 4.9 to 9.1m in the anchorage.
5. Anchorage Area No. 5 is 1.5 miles ENE the point of Punta Soldado.

Quarantine anchorage is available in two areas located close to the fairway lighted buoy. Anchorage Area 6 is 1 mile NNW of the buoy and Anchorage Area 7 is 1 mile S. Both areas are best seen on the chart.

Regulations.—At least 24 hours prior to arrival, the vessel should cable its ETA at Punta Bazan and select information to its agents, the port captain, and the port doctor. The message to the port captain should include the quantity of cargo carried, draft, number of passengers (if any), and the type and quantity of dangerous or inflammable commodities consigned for the port.

Special regulations are in effect for vessels carrying explosives.

Caution.—Vessels are generally docked and undocked only at slack water, due to the strong tidal currents off the berths.

It was reported that very strong ebb tidal currents were experienced at the anchorages within the river. Buoys may drag from their charted positions.

It was reported (1991) that surveys showed significant changes to depths in Bahia Buenaventura; many areas have depths of 1 to 2m less than charted.

2.7 Punta Guascama (2°37'N., 78°25'W.) lies about 100 miles SW of Punta Soldado. The coast between these two points is low, flat, and heavily wooded, interrupted by mangrove swamps, river deltas, and the mouths of streams. There are no prominent headlands. Coastal shoals, with depths of less than 5.5m, lie up to 6 miles offshore. Pico Tortugas, with an elevation of 162m, stands about 20 miles S of Punta Soldado and is the only hill above a flat and featureless coast. The many river deltas and streams emptying into the sea between the various points discharge a considerable volume of water, debris, and tree trunks, causing a rolling swell and currents.

The mouth of the Rio Guapi, about 29 miles ENE of Punta Guascama, can be reached through a narrow channel. Local knowledge is required. A light is exhibited from the E bank at the river entrance. Another light marks Punta Chocon, about 11 miles NE. A lighted buoy lies about 20 miles W of Punta Chocon. The mouth of the Rio Sanguiana, about 23 miles W of the Rio Guapi, can be entered through breakers via a passage with depths of 9 to 22m. A shoal patch, with a depth of 6.4m, lies in mid-channel. Local knowledge is required.

Tides—Currents.—Currents near the coast run parallel with it and generally set N on a rising tide and S on a falling tide with a velocity of 1.3 knots. Up to 40 miles offshore the current sets NE.

Caution.—A dangerous wreck lies in approximate position 3°43'N, 77°30'W, about 19.5 miles WSW of Punta Soldado

2.8 Off-lying islands.—**Isla Gorgona** (2°58'N., 78°11'W.), about 25 miles NE of Punta Guascama, is rugged, mountainous, and has five distinct peaks visible from the E and NE. Rocky foul ground lies off the SW side of the island; landings can be made on the E side. A light is shown from a metal tower, 19m high, standing on Punta Coll, the N extremity of the island.

Anchorage.—Anchorage can be taken in Watering Bay (2°58'N., 78°10'W.), off the island's E side, about 0.4 mile offshore, in a depth of 55m.

The best landing places are found on the E side of the island. **Isla Gorgonilla** (2°57'N., 78°13'W.) is located close SW of Isla Gorgona. A main light is shown from a framework tower, 22m high, standing on the islet. Roca del Viudo lies 1 mile WSW of Isla Gorgonilla.

The coast between Punta Guascama and Cabo Manglares, about 72 miles SW, is low, wooded, and intersected by streams and river deltas. Eusenada Tumaco, about 40 miles SW of Punta Guascama, is 11 miles wide at its mouth. The port of Tumaco lies on the S shore of the bay entrance. This entire low coast should be approached with caution as depths are very irregular. The treetops are the first objects seen on the horizon. Depths give no warning of approach, as depths of 37m are found within 1 mile of the banks.

Pasa Caballos is located about 13 miles SW of Punta Guascama. A main light is shown from a metal tower, 36m high, standing on the S side. A depth of 11m was reported to lie about 13.5 miles NW of the light tower.

An explosives dumping area is situated about 22 miles W of Pasa Caballos.

Bahia San Ignacio, lying about 19 miles SW of Pasa Caballos, has a drying sandpit extending 2 miles W from its entrance, with depths of 64 to 73m close off it.

Punta Cascajal (1°59'N., 78°41'W.) is the SW extremity of Isla del Gallo, an island lying near the N entrance of the shallow Ensenada de Tumaco, about 10 miles S of Bahia San Ignacio. Punta Cascajal, consisting of a reddish cliff with two hills over it, is prominent along this flat coast. Between Punta Cascajal and Boca Grande, 15 miles SW, the coast recedes forming a bight of which Ensenada de Tumaco occupies the greater part.

Tumaco (1°49'N., 78°45'W.)

[World Port Index No. 15360](#)

2.9 Tumaco, the S port of entry of Colombia, is entered via Rada de Tumaco, which lies at the SW end of Ensenada de Tumaco between Boca Grande (1°49'N., 78°51'W.) and the Rio Chilvi, about 7.5 miles E. A steep-to, shallow bank extends almost 0.8 mile off Boca Grande and 3 miles offshore as far as Isla del Morro, 6.5 miles NE. Isla del Guano, with two islets close SW, lies on this bank 1 mile NW of Isla del Morro. Isla

Tumaco lies close W of the S end of Isla del Morro and is connected to it by a bridge with a vertical clearance of 1.8m. Isla del Morro fronts the mouths of the Rio Chilvi. The port of Tumaco consists of Isla de Tumaco (1°49'N., 78°46'W.), Isla del Guano (1°50'N., 78°46'W.), and Isla del Morro (1°49'N., 78°45'W.). The town of Tumaco is situated on the E side of Isla de Tumaco.

Winds—Weather.—The inner harbor and town are protected from the prevailing winds. There is heavy rainfall during the year.

Tides—Currents.—The mean spring rise here is 3.1m, while the neap rise is 2.4m.

Currents on the bar set in a WNW-ESE direction, at a rate of 1.1 knots. Currents off the wharf set in a NE-SW direction, at the same rate.

Depths—Limitations.—Numerous shoals, best seen on the chart, encumber the harbor. There are depths of 3.9m within 0.5 mile off the outer edges of the previously-described shallow bank. Depths shoal gradually from the 15m curve, in the vicinity of Entrance Buoy No. 1, to the bar 0.8 mile N of Isla del Morro. El Viudo (1°51'N., 78°43'W.) is flat-topped and dries about 3.7m. Shoals, which form the bar, extend at least 3 miles W and 2 miles N of El Viudo. The channel to the wharf has a least depth of about 8m, but the area between Buoy No. 7 and Buoy No. 8 must be navigated with extreme caution due to the rocky bottom and the narrow width of the channel. Depths in this area are subject to continuous change.

Entrance to the port is only permitted during daylight hours. Vessels must berth with a suitable tide due to the bar between Buoy No. 2 and Buoy No. 3, with a depth of 3.7m at LWST; this increases to 6.1m at HW. There is no restriction on length.

The municipal wharf, situated 0.3 mile SW of the E extremity of Isla del Morro, is 310m long with depths of 7.6 to 10.6m alongside. A turning basin off the wharf is about 732m long, 411m wide, and has a depth of 10.1m.

The Trans-Andean oil pipeline extends to Pindo Oil Terminal, an offshore terminal situated about 4.8 miles WNW of the N end of Isla del Morro. A submerged oil pipeline leads to the loading berth, a multi-point mooring for tankers, situated in depths of 27m, which can handle vessels up to 55,000 dwt. It was reported that vessels up to 80,000 dwt and 366m in length could be accommodated. The loading berth is marked by a lighted buoy, painted white, with a radar reflector. Hoses are marked by red and yellow pick-up buoys. A mooring master boards ships in the vicinity of the sea berth. Ships are handled during daylight hours only. A tug and launches are available and a 12 hour ETA is required.

A restricted area, best seen on the chart, surrounds the terminal.

Aspect.—Boca Grande, the largest and northernmost mouth of the Rio Mira, can be identified by a village encircled by coconut palms. A white cliff at the NE end of Isla del Morro is conspicuous. A main light is shown from a concrete tower 11m high, standing at the E end of Isla del Morro. A lighted beacon stands on El Viudo. An aeronautical radiobeacon is situated at the W end of the Isla del Morro near the airport.

Pilotage.—Pilotage is compulsory. The pilot boards ships outside the channel, about 4 miles NW of the light on Isla del Morro, immediately before high water, by day, from a launch displaying the national flag with a white border and the pilot

flag. If the pilot is not waiting, vessels should anchor W of the safe-water lighted buoy and call for the pilot by sounding three long blasts on the whistle or siren. Arrival messages are sent via Buenaventura. The port and oil terminal may be contacted by VHF channel 16. Vessels should send ETA messages 72 hours, 48 hours, 24 hours, and 12 hours prior to arrival. The ETA message should include the date and local time of arrival; draft; number of crew, including the Master; and any special requirements such as tugs, etc.

Anchorage.—Rada de Tumaco, the outer harbor of the port, lies NW of Isla de Morro, and just seaward of the shoal banks. This roadstead offers anchorage in depths of about 18m, over a mud and sand bottom. The current usually sets NE. There is anchorage within the harbor off the NE side of Isla del Morro, in a depth of 10.1m. Anchorage is also available close to the pilot boarding position, in a depth of about 46m.

Caution.—An area of shoal water, the limits of which may be seen on the chart, was reported to lie about 7.5 miles N of Isla del Morro.

2.10 Cabo Manglares (1°36'N., 79°03'W.), about 22 miles SW of Isla del Morro, is the low SW end of an island and contiguous with the shore. Shoals of less than 5.5m extend 1.5 miles off the cape. A main light is shown from a framework tower, 36m high, standing on the cape.

The low coast for 40 miles SW of the cape recedes E to form Bahia de Ancon de Sardinias. Vessels should not approach this coast unless seeking an anchorage. Numerous streams and rivers intersect this coast.

Note.—The border between Colombia and Ecuador is situated approximately 16 miles SE of Cabo Manglares. [See Pub. 120, Sailing Directions \(Planning Guide\) Pacific Ocean and Southeast Asia for details on regulations pertaining to vessels entering Ecuadorian waters.](#)

All vessels entering waters within 200 miles of Ecuador and between the mainland and the Archipelago de Colon must send an ETA and destination to the naval radio station at Guayaquil. [Additional reports required by the reporting system are contained in Pub. 120, Sailing Directions \(Planning Guide\) Pacific Ocean and Southeast Asia.](#)

2.11 Bahia de San Lorenzo (1°27'N., 79°02'W.), in the N part of Bahia de Ancon de Sardinias, is fronted by shoals extending 7.5 miles offshore from its entrance which is marked on its W side by Buoy No. 1. The channel leading through the shoals to the entrance of the bay has a least depth of 3.7m. The bay extends 4 miles S from the entrance, is at least 0.5 mile wide, and has a 3.7m bank fronting its W side for about 0.4 mile. Palo Seco Light (orange rectangular daymark, 8m high), in alignment bearing 140° with a small white spherical beacon, leads into Bahia de San Lorenzo. A channel connects the heads of this bay and La Posa del Puerto, forming Isla de Santa Rosa. A light is shown from a tower on the W side of Isla San Pedro which lies NE of Isla de Santa Rosa. Lights are shown from three white concrete beacons with orange-colored daymarks situated at the SW end of Isla San Pedro, near the middle of the E side of Isla de Santa Rosa, and on a shoal N of Puerto de San Lorenzo pier.

Puerto de San Lorenzo (1°16'N., 78°51'W.) ([World Port Index No. 15335](#)) is a very small port situated on the N part of

Ecuador's coast. It is a natural harbor at the entrance of the Bolivar Canal.

The minimum depth over the sand bar leading to the port is 3.4m; larger vessels, up to 6.6m draft, must pass over at HW.

There is one steel pier 85m long and 10m wide, with a depth alongside of 7m. Vessels of 5,000 tons can berth. There is a coast and port radio station in town. Port officials board at the pier. Pilots will board vessels in the vicinity of No. 1 approach buoy. Pilotage is compulsory, but is carried out during daytime only. The port captain should be contacted on VHF channel 16. Pilots advise that the best time to enter the channel is 2 or 3 hours before HW.

La Posa del Puerto, located about 8 miles SW of the mouth of Bahia de San Lorenzo, is entered by a channel leading SE through the offshore breaking shoals. The channel, 0.8 mile wide, has a depth of 3.7m. The harbor inside the entrance is sheltered, large, and has depths of 4.6 to 7.3m between the shore banks. A channel connects La Posa del Puerto with the Rio Santiago, about 4 miles SW. The Rio Santiago has a shallow entrance marked by a light. Poblacion de La Tola (1°13'N., 79°06'W.), a town, is situated 1 mile within the river entrance. A channel, with a depth of 5.5m, leads inland for 30 miles from the town. A light is shown from a tower on an islet lying 1 mile NE of the W entrance point of the Rio Santiago. A pilot for the Rio Santiago can be obtained at Poblacion de La Tola.

Punta Verde (1°05'N., 79°27'W.) is a cliffy bluff backed by a high hill from which a light is shown. The mouth of the Rio Verde, about 1 mile WSW of Punta Verde, is entered over a bar which is navigable at high tide. The Rio Vainillita lies 13 miles E of Punta Verde.

Caution.—Vessels should not enter the channels within Bahia de Ancon de Sardinias without a pilot, due to the numerous isolated shoals and sharp curves. Local knowledge is essential.

Punta Coquitos (0°59'N., 79°40'W.) is located about 15 miles WSW of Punta Verde. A main light is shown from a tower, 13m high, standing on a hill with an elevation of 150m at the point. The low coast SW of Punta Verde becomes higher and more cliffy towards Punta Coquitos. The Rio Esmeraldas is located close E of Punta Coquitos.

Esmeraldas (1°00'N., 79°39'W.)

World Port Index No. 15330

2.12 Esmeraldas, a port and tidal basin, is located on the W side of the Rio Esmeraldas, about 1 to 2 miles S of Punta Coquitos, the W entrance point of the river. Punta Este, the E entrance point, marked by a round peak, lies 2 miles E of Punta Coquitos. The river, fed by many streams inland, flows rapidly between steep-to banks.

Winds—Weather.—The climate is humid and hot. There is an afternoon breeze. Rainfall is heavy from January thru April. West to SW winds prevail, except during the wet season (December-May), when NE winds predominate.

Tides—Currents.—Spring tides rise 3.2m; neaps rise 2.5m. The tidal current is reported to have a velocity of 1.5 knots and

to be stronger on a falling tide. Strong tidal currents occur in the river anchorage and across the entrance to the harbor basin.

Depths—Limitations.—The port will accept vessels up to 200m in length, with drafts of 10.7m.

The entrance channel to the Rio Esmeraldas, which is deep, cuts between coastal banks extending 2 miles N and 4.5 miles NNW, respectively, of Punta Coquitos and Point Este. Dangerous shallow rocks lie on the coastal bank adjacent to the W side of the entrance channel.

The port proper consists of a basin situated on the W river bank, separated from a fishing harbor S of it by a point of land. The main harbor is protected from the N by a breakwater. The main basin was reportedly dredged to a depth of 11.5m, but shows charted depths of 0.2 to 11.6m, while the fishing harbor shows charted depths of 0.9 to 7m. The fishing harbor basin is fronted by a bar with a charted depth of 4.2m. A rock, with a charted depth of 1.7m, lies about 137m NE of the fishing harbor's E entrance point.

Ro-ro, break bulk, and container cargo can be handled at a marginal quay, 350m in length, situated on the S side of the main harbor basin. The berths will reportedly accept vessels with drafts of 11m alongside.

The entrance to the Rio Esmeraldas, located SE of the harbor entrance, is shallow and subject to freshets. During a freshet, depths within the entrance are subject to rapid and extensive changes, as is the channel through it. It is quite possible for a vessel navigating within or near the river entrance to ground, or strike floating debris carried down river by the current.

Aspect.—**Punta Gorda** (0°58'N., 79°44'W.), a steep bluff with a reef extending 0.5 mile off it, and Punta Este, are conspicuous, as is the narrow, precipitous gorge through which the river flows. Several oil tanks standing on a small plateau about 2.5 miles E of Punta Gorda can be seen at a great distance. A radio mast close E of the tanks, and a water tower situated 1 mile S of Punta Gorda are conspicuous.

An airport is situated 1 mile SSW of Punta Este, while a radio mast exhibiting red fixed obstruction lights and several huts lie 1.5 miles SSW, and 0.5 mile SW, respectively, of the same point.

Lights are exhibited from the entrance points of the harbor basin and the fishing harbor, as well as the breakwater. Two sets of range lights and lighted buoys mark the channel from seaward to the main harbor basin and are best seen on the chart.

Pilotage.—Pilotage is compulsory and is available by day only. Pilots and quarantine officials board ships bound for Esmeraldas in the quarantine anchorage about 2 miles N of Punta Coquitos Light. It is reported that pilots will board within 1 mile seaward of the breakwaters, but clear of the prohibited anchorage area. Communication with the pilot boat (black hull with white top) is established on VHF channel 16, switching to VHF channel 14 after communication is established.

Anchorage.—Anchorage for ships bound for Esmeraldas can be taken in suitable depths N of the port, but clear of the Prohibited Anchorage Area and Tanker Operating Area shown on the chart. There is anchorage, in 12m, about 2 miles N of Punta Coquitos Light.

A Prohibited Anchorage Area, covering the harbor entrance, extends about 2.3 miles N and 1.5 miles E of Punta Coquitos Light. Lighted buoys, the pilot waiting area, and the quarantine

anchorage area for Esmeraldas lie adjacent to and NE of the Prohibited Area.

2.13 Balao Oil Terminal (1°02'N., 79°42'W.), an offshore loading terminal NW of Esmeraldas, consists of two outer berths and one inner berth situated within a Tanker Operating Area in which navigation is restricted. The limits of the area may best be seen on the chart.

The outer berths are formed by two single point mooring buoys "X" and "Y" situated about 4 miles offshore. There are least depths of 36m at the berths and each buoy can handle vessels up to 100,000 dwt.

The inner berth is formed by four mooring buoys situated about 2.3 miles offshore. There are least depths of 14m at the berth, and vessels up to 20,000 dwt with drafts up to 10m can be handled.

Submarine pipelines extend from the coast to the berths and may best be seen on the chart. Berthing is carried out during daylight hours (0500-1700); unmooring is conducted 24 hours..

Pilotage.—Pilotage is compulsory. Pilots and mooring masters board tankers in the pilots waiting area shown on the chart about 1.5 miles NW of Buoy Y. A vessel is not permitted to enter the terminal area without a pilot onboard; until the pilot arrives, the vessel is required to remain in the waiting and pilot boarding area. The ETA should be transmitted 72 hours, 48 hours, and 24 hours prior to arrival. Radio contact can be made on VHF channels 12, 14, and 16, with VHF channel 12 used only for internal traffic. There are facilities for discharging dirty ballast.

Anchorage.—Anchorage can be taken by tankers at the Quarantine Anchorage, about 1.5 miles SW of Lighted Buoy X. The bottom is soft mud and clay. The entire port and tanker areas are relatively calm; the prevailing currents set between S and SW, with a greatest velocity of 1.2 knots.

There is a port radio station on the shore at the landing site of the oil pipelines.

Esmealdas to Cabo San Lorenzo

2.14 The coast to Punta Galera, 26 miles WSW, is quite regular. The coast between Punta Coquitos and Punta Gorda, which was [described in paragraph 2.12](#) with Esmeraldas, consists of cliffs interspread with valleys.

Punta Sua (0°52'N., 79°56'W.), marked by a light, with a cliffy islet lying close off it and to which it is joined at low water, marks a section of low coast and the entrance to Ensenada de Atacames, a shallow bight. A small inlet, used by local shallow-draft fishing craft, is located close SE of Punta Sua.

Arrecife de Atacames (0°57'N., 79°50'W.) is a coral reef which lies on the coastal bank extending 6 miles offshore between Punta Sua and Punta Gorda. An extensive area of rocks, with depths of 5.3 to 10.4m, extends seaward for up to 15 miles offshore N of the above-mentioned coral reef.

Punta Galera (0°50'N., 80°03'W.), about 10.5 miles WSW of Punta Sua, is a low, shelving point at the N extremity of a wide promontory of which Cabo de San Francisco, about 10 miles S, forms the S end. A light is shown from a tower, 11m high, standing on the point.

Most of the coast for about 125 miles SSW to Cabo San Lorenzo consists of long, sandy beaches backed by white cliffs, some of which are wooded. There are several headlands. Detached mountains are visible inland.

The promontory consists of steep cliffs topped by tall trees. It is generally steep-to, though rocks marked by heavy breakers lie close off the coast in places. The terrain backing the coast is mountainous and wooded.

Caution.—Dangers in the form of detached islands and rocks lie less than 4 miles offshore and with the shore banks are usually steep-to. It was reported that uncharted dangers may exist within a radius of 20 miles N of Punta Galera. A ship, with a draft of 8m, reported striking an underwater rock about 21 miles NNE of Punta Galera.

2.15 Cabo de San Francisco (0°39'N., 80°05'W.) forms the W side of a small cove with depths of 4.6 to 5.5m. A the village of San Francisco is situated on the shore of the cove and landing can be made near the mouth of a small river emptying into the W side of the cove. A light is exhibited approximately 3 miles SE of the village.

The coast between Cabo de San Francisco and Cabo Passado consists of an open bight broken by smaller bights and coves.

Ensenada de San Francisco (0°36'N., 80°05'W.), a small bay with several villages on its shores, is entered between Cabo de San Francisco and **Punta Mompiche** (0°31'N., 80°05'W.). The Rio Muisne is the largest of several small rivers flowing into the bay. The Rio Bunche, 2 miles E of the cape, is identified by four prominent rocks off its entrance. Anchorage by small vessels can be taken with the four rocks bearing 053°, distant 1.3 miles. **Punta Zapotal** (0°27'N., 80°05'W.), on Isla Zapotal, is low and mangrove-covered.

Bajos de Cojunes (0°23'N., 80°08'W.), an extensive shore bank about 4 miles offshore, extends S from Punta Zapotal for 5 miles. Depths of 11m exist 1 mile from the bank, but then increase abruptly to 73.2m. From the S end of the shore bank to Cabo Pasado, the coast is fronted by a bank with depths of less than 9.1m extending up to 2.5 miles offshore.

Punta Pedernales (0°04'N., 80°07'W.) is a narrow and cliffy ridge with rocky islets lying off it. The village of Pedernales is situated NE of the point. Depths of 11.3 to 12.9m can be found up to 7.5 miles offshore about 10 miles NNW of Punta Pedernales. The point is marked by a light.

Punta Ballena (0°10'S., 80°20'W.) is the W extremity of a small bay backed by a wide plain through which two rivers flow and empty into the bay. A reef is charted about 1.5 miles NE of the point. The coast NE of the bay is backed by a high mountain range. South of Punta Ballena the coastal terrain changes to bare white cliffs fronted by long sandy beaches as far as Punta Borrachos (0°13'S., 80°25'W.), thence wooded cliffs back rocky beaches to Cabo Pasado. The point is marked by a light.

2.16 Cabo Passado (0°21'S., 80°30'W.) is high and rounded, with the adjacent land densely wooded and bound by white cliffs on the S side. A reef, with depths of less than 3.7m, extends about 0.5 mile N and E of the cape, which is reported to be a good radar target. A main light is shown from a concrete tower, 9m high, standing on the cape.

The **Rio Chone** (0°37'S., 80°25'W.) empties into the sea about 14.5 miles S of Cabo Passado. The estuary lies between Punta Del Napo, 12.3 miles SSE of Cabo Passado, and Punta Bellaca 3 miles SSW. Punta Bellaca, where a light is shown, appears as an island with a grey-green tint.

2.17 Bahía de Caraquez (0°35'S., 80°25'W.) ([World Port Index No. 15320](#)) is the small port that lies at the mouth of the Rio Chone. Poblacion de Bahía de Caraquez, containing the port facilities, is located on the W bank of the river near the mouth, about 2 miles ENE of Punta Bellaca. Tides in the estuary rise about 2.7m at MHWS.

Depths—Limitations.—From Punta Bellaca to a point on the coast about 4 miles N, the approaches to the Rio Chone are encumbered by shoals with depths of less than 5.5m. Many of the shoals shift positions. Within the shallow river entrance, there are extensive drying shoals. Bajo de Santa Martha, a rocky patch on which the sea always breaks, lies 1.5 miles N of Punta Bellaca.

The entrance to the port is marked at a distance by the constant breakers on top of Santa Martha Shoal. However, navigation is impossible from the outer mouth to the mouth of the Rio Chone due to the countless shoals.

Coming from the N, to assume proper position, one must take Cape Passado as reference; it has been sighted by radar at 40 miles.

Approaching from the S, one must pass N of Cape Lorenzo and the Bay of Manta until one spots Bellaca Point, where there is a lighthouse. The elevation of this point makes it very noticeable; then one notices the beach with a seawall against which the waves break.

In general, there are no port facilities here, although there is a municipal wharf.

On the other shore, in the little town of San Vicente, there is another municipal wharf.

The port has lighters to transport cargo or vehicles from Bahía de Caraquez to San Vicente, as well as small craft to transport passengers and light cargo.

Canal de Manavi, trending along the NE shore of the estuary, leads into the river, but has a sandy bar and is silted so that local knowledge is necessary to effect transit. Canal Viejo, the shallow S approach channel, trends along the S shore. It was reported that vessels with a draft of about 7m can cross the bar at HW, but only small craft and lighters enter the port. Large vessels anchor outside the port.

Aspect.—Monte San Vicente, 275m high, stands about 3.8 miles ENE of Punta Bellaca and is prominent. The river is a remarkable coastal feature because of the ravine formed by it.

Pilotage.—Pilotage is not compulsory due to the fact that only inland coastal navigation vessels sail here; however, pilotage services are available.

Anchorage.—Anchorage is available, in a charted depth of 12.5m, about 1.5 miles off Punta Bellaca Light, with the light bearing 122°. Depths vary from those in the vicinity of the charted recommended anchorage, with shoaling reported S of the charted anchorage area.

A recommended anchorage can be situated 1 mile away and on a true bearing of 133° from Bellaca Point, where the depths are 10m.

The coast from Punta Bellaca trends SSW for 9 miles to Punta Charapoto, then turns SW for about 15 miles to Punta Jaramijo (0°56'S., 80°40'W.). The Rio Charapoto empties into the open bay formed between these points. The bay is backed by an extensive plain bound by high, white cliffs. Bars obstruct the delta of the river. A light is shown from a square concrete tower, standing on Punta Jaramijo. Three lighted buoys are moored 2.5 miles N of Punta Jaramijo. A shoal patch, with a least depth of 6.7m, lies about 1.8 miles NNE of Punta Jaramijo and several rocks lie between this patch and the shore close E of the point.

Bahía de Manta (0°57'S., 80°43'W.)

[World Port Index No. 15310](#)

2.18 Bahía de Manta recedes nearly 1 mile S between Punta Jaramijo and Punta Muercielago (0°57'S., 80°44'W.), about 5 miles W. The city of Manta is situated at the W end of the bay. An extensive fishing fleet operates out of the port.

Tides—Currents.—Spring tides rise 2.9m, while neap tides rise 2.4m. Mooring lines should be checked frequently while in port.

Depths—Limitations.—There are depths of less than 10m up to 1 mile N of Punta Muercielago. A bank, with a depth of 5m, extends E across the entrance of the bay from Punta Mal Paso (0°56'S., 80°45'W.) to the jetty; from the freight yards E to Estero Salitral the bank has a depth of 2m.

Bahía de Manta is shallow, with depths of less than 5.5m throughout its W part. Dangerous wrecks lie close N and NE of the freight yards. They are marked by a lighted buoy that lies 0.6 mile SSE of the breakwater head.

Aspect.—A triangular church with a green roof SW of the port and a prominent building are situated in the town. A prominent grey gas tank stands on the breakwater head of the fishing harbor. Conspicuous radio towers stand near the airport E of the town and a group of conspicuous tanks stand on the shore about 0.5 mile E of the fishing harbor. A light and racon is exhibited from the main breakwater head. A pyramidal church building stands about 1.3 miles SW of the breakwater head. An aeronautical radiobeacon is situated at the airport.

A breakwater extends about 0.8 mile NNE from a position ashore 0.5 mile E of Punta Muercielago. At the outer end of the breakwater two piers, each 200m in length, extend E into the harbor. The berths alongside the piers have depths of 10m and can handle vessels up to 183m in length, with drafts of up to 9.8m.

Two ro-ro ramps are situated near the S pier and can handle vessels up to 20,000 tons. Two lighted mooring buoys, reserved for naval use, are situated S of the piers.

Three wharves, each about 150m in length, occupy the E face of the breakwater, inshore of the two piers mentioned above. The N wharf will accept vessels with a draft of 7.5m alongside; the central and southern will, respectively, accept drafts of 5.7 and 3.8m alongside. A small harbor, enclosed by breakwaters located SE of the main breakwater, has a depth of 2.7m and is used by fishing vessels and small craft.

An offshore tanker berth extends offshore from a position 0.4 mile E of the fishing harbor. Mooring buoys lie near the end

of the pipeline. The local authorities should be consulted for information on depths at this berth.

Pilotage.—Pilotage is compulsory for all foreign vessels over 500 tons with some exceptions, and is available by day and at night with at least 12 hours prior notice of arrival time. Arrival during the hours of daylight is advisable. Pilots board vessels about 1 mile N of the breakwater head. The port can be contacted by VHF channels 16 and 26. It has been reported (1991) that pilotage is not required when anchoring and that the pilot also monitors VHF channel 12.

Anchorage.—Anchorage can be taken, in depths of 9.1 to 20m, sand and mud, about 0.3 mile E of the main breakwater head. Use caution when anchoring near the submarine pipeline located near position 0°56.0'S, 80°42.2'W. Cargo is worked by lighters at this anchorage.

During the rainy season (December-April), vessels anchor farther offshore, as there is usually a heavy swell and the sea breaks, in a depth of 4.9m. Deep-draft vessels anchor at least 0.3 mile N of the head of the breakwater, but are exempt from port charges if anchored within 1 mile NE and ENE of the same point and are not engaged in any commercial activity. The anchorages are unprotected from wind, sea, and swell.

Directions.—When approaching Bahía de Manta from the S, it is advisable to make landfall at Cabo San Lorenzo and then sail parallel to the coast at a distance of 3 miles until reaching a point N of Cabo San Mateo (0°57'S., 80°49'W.); then ships sail a true course of 075° until the breakwater lighthouse and the racon are on a true bearing of 170°, thereafter, falling to starboard until that same lighthouse is on a bearing of 180°, whereupon, one can make the approach to the wharfs with the purpose of mooring. An approach from the N is preferred.

The only major hazard is located W of the breakwater and in the vicinity of Muercielago Point where there are shallows of a rocky nature.

Caution.—It is reported that the landmarks and aids are very difficult to identify until the vessel is within about 1 to 2 miles of the breakwater.

It has been reported (2002) that long period swell entering the harbor has parted mooring lines and forced vessels to leave the piers for anchorage.

A firing practice area, best seen on the chart, is located NW of Manta.

2.19 Cabo San Mateo, about 6 miles W of Manta, is a salient point and forms a plain 40m high.

Punta Jome is the W end of Cabo San Mateo. A light is shown from a concrete tower, 7m high, standing on the point.

Cabo San Lorenzo (1°03'S., 80°49'W.), about 8 miles SW of Punta San Mateo (0°57'S., 80°51'W.), is the outer part of a high projection of the coast which terminates in a tongue of land about 0.5 mile long. Above and below-water rocks lie off Cabo San Lorenzo. One of the rocks is pinnacle-shaped, white in color, and prominent. A main light is shown from a concrete tower, 10m high, standing on the cape.

Caution.—Naval operating areas lie N and W of Cabo San Lorenzo, as follows:

1. Area A—bounded by lines joining the following positions:
 - a. 0°35'S, 81°00'W.

- b. 0°35'S, 80°45'W.
- c. 0°48'S, 81°00'W.
- d. 0°48'S, 80°45'W.

2. Area B—bounded by lines joining the following positions:

- a. 0°44'S, 82°39'W.
- b. 0°44'S, 81°29'W.
- c. 1°45'S, 81°29'W.
- d. 1°45'S, 82°39'W.

Cabo San Lorenzo to Punta del Morro

2.20 Isla de La Plata (1°16'S., 81°05'W.) lies about 14 miles offshore and 16 miles SW of Cabo San Lorenzo. This brownish, dried-up appearing island is formed of precipitous cliffs on its W side, off which there are a few islets. There are below-water rocks off the W extremity of the island and a reef extends 0.3 mile E of the SE extremity. A main light is shown from a framework tower, 20m high, standing on the NW summit of the island. At night, the tower displays white light flashes with a range of 11 miles.

Bajo Cantagallo (1°17'S., 80°58'W.), about 8 miles E of the E extremity of Isla de La Plata, is a shoal area 0.5 mile in extent with a least depth of 11m.

Anchorage can be taken, in depths of 32.9 to 36.6m, about 0.2 mile off the beach on the E side of Isla de La Plata, but local knowledge is required.

The coast between Cabo San Lorenzo and Punta Santa Elena, 70 miles S, is indented by two large open bays separated by Punta Piedra Verde.

Puerto Cayo (1°21'S., 80°45'W.) is a minor port situated at the head of a small bight, about 21 miles SE of Cabo San Lorenzo. Cargo is lightered to vessels anchored about 0.3 mile offshore, in a depth of 8.2m, hard sand.

Punta Cerro Viejo is a bluff marked by a tower with radar reflector located 2 miles SW of Puerto Cayo. Islote Cayo (El Islote) lies 1 mile N of Punta Cayo and Roca Daphne (Islote La Viuda) lies 1 mile SSW.

2.21 Puerto de Machalilla (1°28'S., 80°46'W.), about 7.5 miles S of Puerto Cayo, is a small, sheltered port situated on the E side of a small bight, easy to approach. Cliffs fringe the coast N of the port. There is a beach, with cliffs to the W, along the SE side of the bay. Islets and below-water rocks lie up to 1.5 miles N and NE of the W entrance point of the bay. Anchorage can be taken, in 18.3m N of the islets at the W entrance point or, in 12.8 to 14.6m, about 0.4 mile offshore and W of the village.

Isla Salango (1°36'S., 80°52'W.) lies about 10 miles SSW of Puerto de Machalilla. The island is 160m high and covered with vegetation. The narrow channel between the island and Punta Piedra Verde on the mainland is obstructed by submerged and drying rocks and is not navigable. Some above-water rocks, which are steep-to, lie about 0.3 mile W of the island.

A light is shown from a framework tower standing on Isla Salango and two towers, equipped with radar reflectors, stand on the island.

Anchorage may be taken, in 47m, NE of the island with the NW extremity bearing 235°, and the E extremity bearing 172°.

Anchorage may also be taken, in 29m, with the NW extremity of the island bearing 264°, and Punta Piedra Verde bearing 191°.

Punta Blanca (1°41'S., 80°48'W.) is a conspicuous point located about 6.5 miles SE of Isla Salango. Above and below-water rocks lie close off the point.

Islas Los Ahorcados, a small group of rocky islets, lie about 1.5 miles NW of Punta Blanca. There is clear passage between the islets and the point. A rock, with a depth of 7.3m, lies close NW of the islets.

Punta Montanita is a conspicuous point about 8 miles SSE of Punta Blanca. Above and below-water rocks lie close off the point.

Bajo Montanita (1°50'S., 81°03'W.) is a shoal with a least depth of 10m, lying about 17 miles W of Punta Montanita. In 2000, shoal patches were reported to exist W of Bajo Montanita, as seen on the chart.

Punta La Leona (1°58'S., 80°46'W.), a rocky promontory, is located about 24 miles SSE of Isla Salango. The coast between is backed by a low range of mountains lying 3 to 7 miles inland.

Islote El Pelado, a rocky islet 22m high, lies about 3 miles NW of Punta La Leona. A reef extends about 0.2 mile from its N side and a dangerous rock lies close NW. A light is shown from a concrete structure, 7m high, standing on the summit of the islet.

Between Punta La Leona and Punta Santa Elena, about 19 miles SW, the coast consists of beaches interspersed with rocky bluffs.

Puntilla de Santa Elena (2°11'S., 81°00'W.) is a narrow, bare, and sandy promontory projecting about 4 miles NW from a blunt peninsula. The N end of the promontory rises to a steep, flat-topped hill which appears as an island when seen from seaward. A light is shown from Puntilla de Santa Elena, which is the W extremity of the promontory. Radio masts stand on the outer part of Puntilla de Santa Elena and are conspicuous unless obscured by the hill.

A main light is shown from a tower, 12m high, standing on the promontory and a radiobeacon is situated at the light tower.

A measured mile, indicated by beacons, is situated close N of the promontory and may best be seen on the chart.

Banco Cope, over which heavy seas break, lies about 1 mile N of Puntilla de Santa Elena and is marked by a lighted buoy.

2.22 Bahia de Santa Elena (2°12'S., 80°55'W.) is a bight extending about 10 miles E of Puntilla de Santa Elena. The small ports of Salinas and La Libertad are contained within the bight. Several of the points contained within Bahia de Santa Elena make good radar targets. There are many excellent landmarks including tall buildings, church spires, towers, tanks, and stacks within the points and towns along the shores of the bay.

Depths shoal gradually from the 20m curve, which lies 2 to 4.5 miles N of the bay coastline, to about 5.5m at 1 to 1.5 miles offshore or 0.5 mile off the points.

Punta San Lorenzo lies close E of Salinas, about 2.5 miles SE of Punta Santa Elena. A light is shown from the point.

Caution.—Several dangers lie in the approaches to the ports.

Roca Belshaw, with a depth of 5.4m, lies about 1.5 miles NE of Punta San Lorenzo and is marked by a lighted buoy.

Bajo de Ballenita, with a depth of 8.2m, lies about 2.8 miles NNE of the pier at La Libertad and is marked by a lighted buoy.

Bajo de Columbia, with a least depth of 3.9m, lies about 0.5 mile from the shore, about 1.5 miles SSE of Bajo de Ballenita.

An abandoned Submarine Cable Area, the limits of which are shown on the chart, extends about 3 miles N of Punta Santa Elena.

2.23 La Libertad (2°13'S., 80°55'W.) ([World Port Index No. 15290](#)) is a small oil-loading port situated 2.8 miles E of Punta San Lorenzo.

Tides—Currents.—Tides rise about 2.1m at springs and 1.6m at neaps.

Depths—Limitations.—A submarine pipeline extends from shore to an offshore oil berth situated about 2.5 miles N of the town. A lighted buoy and four mooring buoys indicate the seaward end of the pipeline. Tanker vessels up to 228m in length, with drafts up to 11m, can be accommodated at the terminal. This limitation is due to the constant swell in this area. Docking masters assist in berthing. Vessels are moored port side-to on a westerly heading. Vessels moor to three buoys aft and one forward, using the starboard anchor off the starboard bow. Berthing is restricted to daylight hours and high tide.

Aspect.—There is one pier at La Libertad which is about 322m long. Its minimum depth is 5m and it can handle ships of 10,000 dwt with a length of up to 98m and a draft of 4.8m. The pier is used by coastal vessels, while larger vessels work cargo at the anchorage. A number of mooring buoys and wrecks are situated in the vicinity of the pier and may best be seen on the chart.

Pilotage.—Pilotage is compulsory. The pilot boards 2 miles NW of the terminal. The vessel's ETA may be sent through Radio Naval of Guayaquil. The ETA should be sent at least 12 hours in advance. The port can be contacted by VHF channel 16.

Regulations.—Several regulatory areas are situated offshore and designated for maneuvering, anchoring, and waiting. The limits of these areas may best be seen on the chart. The local authorities and the pilot should be consulted for information on these areas, and for regulations pertaining to their use.

Tankers berth in daylight hours only.

Caution.—An old abandoned underwater pipeline extends from the shore for about 1.8 miles, close W of the pipeline described above. This old pipeline should not be confused with the pipeline leading to the terminal.

2.24 Salinas (2°12'S., 80°59'W.) is situated about 4 miles WNW of La Libertad. There are several good landmarks in the town and vicinity, including conspicuous buildings at Punta Chipipe, located 1.3 miles W of Punta San Lorenzo. It is basically a tourist port.

The terrain on which this town stands is flat, with La Puntilla Hillock standing out.

The La Puntilla Hill is abrupt, 95m high, flat at the top, and forms the S side of the Bay of Santa Elena. From a con-

siderable distance it appears to have a yellow, arid-dry color, without any vegetation on it, except in the upper part.

Two lighted mooring buoys, situated about 0.8 mile NNE of Punta Chipipe, are for the use of naval vessels. Small craft may use several mooring buoys situated close N of a pile standing about 0.5 mile NNW of Punta Chipipe. There is a small pier, with depths of 3m alongside, which is used by fishing craft and lighters. Larger vessels work cargo at anchor.

Anchorage can be taken, in depths of 12.8 to 14.6m, sand, about 1 mile NNE of Punta San Lorenzo.

2.25 Punta Ancon (2°20'S., 80°54'W.), from which a light is shown, is located about 11 miles SE of Puntilla de Santa Elena. The point, although projecting 1.3 miles from the coastline, blends with the background and is inconspicuous from seaward. Punta Carnero, 2.5 miles NNW of Punta Ancon, although lower in height, is more prominent. Foul ground, which breaks, lies about 1 mile off the points, and several detached shoal patches of less than 5.5m lie up to 2.5 miles off Punta Ancon. A dangerous wreck is charted about 4.3 miles SSW of the point. A platform is situated about 8 miles SW of the light. Numerous shoals, with depths of less than 11m, lie up to 4.5 miles off the coast, extending for 20 miles SE of Punta Ancon. Many of these shoals break during a moderate ground swell.

Caution.—Due to the presence of many dangers, vessels are advised to stay in depths of more than 100m while transiting the coast.

Offshore oil exploration is being carried out in the vicinity of the coast in these waters.

2.26 Punta Chanduy (2°24'S., 80°42'W.) lies about 12 miles ESE of Punta Ancon. The point, with the village of Chanduy at the head of a cove close E, is fronted by rocks and shoal patches. A steeple is situated within the town. A light is shown about 2 miles WNW of the point. Pipelines, for the discharge of fish from small vessels, extend seaward for up to about 0.5 mile from positions close NW of the point.

Punta Piedras del Morro (Punta Chapoya) (2°39'S., 80°26'W.), about 21 miles SE of Punta de Chanduy, is marked by a white tower from which a light is shown. A high hill rises 1.3 miles ENE of the point, which is a good radar target. Depths of less than 5.5m lie up to 2.5 miles offshore. Cerro El Morro, 6 miles E of Punta Piedras del Morro, is a prominent hill with a distinctive shape of two peaks, one rounded and one sharp, close together.

Punta del Morro (2°44'S., 80°15'W.) lies about 12.5 miles SE of Punta Piedras del Morro. The coast between is low and sandy. The point forms the N entrance point of Canal del Morro and is fringed by rocks and foul ground which extend S and W in close proximity to the entrance channel leading to Canal del Morro.

The dangers off this point will be described in paragraph 2.27 with the port description for Puerto Maritimo de Guayaquil.

The coast between the point and Punta Payana (3°19'S., 80°16'W.) recedes about 28 miles E, forming a large bight occupied N by Isla de Puna (2°50'S., 80°10'W.). Canal del Morro and Canal de Jambeli lie N and S, respectively, of Isla de Puna. The mainland is generally low and wooded, with

many creeks and estuaries intersecting the terrain. The Rio Guayas discharges into Canal de Jambeli N of the NE end of Isla de Puna.

Puerto Maritimo de Guayaquil (2°17'S., 79°54'W.)

World Port Index No. 15275

2.27 Puerto Maritimo de Guayaquil (Puerto Nuevo), the marine terminal for Guayaquil, handles most of the commerce that formerly moved through Guayaquil. The approach to this port lies between Punta del Morro and Punta Trinchera (2°45'S., 80°13'W.), where the width at the entrance of Canal del Morro is 2 miles. The port is reached through Canal del Morro and Estero Salado.

Tides—Currents.—Tidal data for Puerto Maritimo de Guayaquil, using Guayaquil as a reference station, has been reported as follows:

1. Low water at the sea buoy occurs 3 hours earlier than at Guayaquil and at the dock 52 minutes earlier.
2. High water at the sea buoy occurs about 2.5 hours earlier, and at the dock about 30 minutes earlier than at Guayaquil.

The mean range of tides is 3.3m at the terminal and 1.8m at the entrance, where it is reported that HW on the outer (131°) leading line occurs about 2.5 hours before HW at Guayaquil.

A heavy swell and strong tidal currents may be experienced in Golfo de Guayaquil and the outer approach to Canal del Morro. The current generally flows N across the entrance of the gulf, but a set E or W occurs within the gulf depending on the incoming or outgoing tidal current in the Rio Guayas and tributaries. Off Isla Santa Clara, the ebb sets to the S and the flood to the E. Currents up to 6 knots have been reported in the vicinity of the sea buoy and tide rips of 2.5 to 3 knots in Canal del Morro. Currents of 5 knots in the stream at Canal del Morro decrease to 0.5 knot at Puerto Maritimo.

Depths—Limitations.—The port handles general cargo, bananas, bulk solids and liquids, containers, and LPG vessels.

Vessels up to 30,000 dwt and 198m in length, with drafts up to 10.6m, can be accommodated within the port.

It was reported that vessels with drafts of over 8.8m had reported that their intakes became blocked when navigating between buoys nos. 62 and 39. It was also reported that the departure of these deep-draft vessels was controlled by the local authorities to coincide with the tide. Vessels may be required to anchor off Posorja (2°42'S., 80°15'W.) to await the next tide before completing the passage to sea.

The Marginal Wharf is 960m long, with a depth alongside of 9.1m, and provides five berths. Three berths, each 185m long, and the bulk berth, 157m long, complete the quayside. Four anchorage berths, with associated mooring buoys, lie S of the terminals between Buoy No. 78 and Buoy No. 84, and have depths of 10m.

Estero Cobina, leading off the E end of Puerto Maritimo, is a busy waterway used chiefly by lighter and barge traffic from the Rio Guayas. The inlet is connected with the Rio Guayas by a lock 122m long and 4.2m deep, situated at La Josefina close S of the city of Guayaquil. The waterway has a least depth of 5m.

Estero del Muerto, leading off the W end of Puerto Marítimo, turns N to a private fertilizer and chemical pier and a Naval Dockyard situated on the E bank of the inlet. The fertilizer quay is 70m long and can handle vessels with drafts up to 7.8m.

El Salitral, part of Estero Santa Ana, leads NNW for about 6 miles, then turns E towards Guayaquil. On the W side of the inlet there are three berths handling fuel oil and gas, within 7 or 8 miles upstream from the inlet entrance. Vessels turn off the LPG terminal and are limited to a length of 128m and a draft of 6.4m.

Aviation gasoline is discharged into barges from small tankers at moorings W of Trinitaria Island. The maximum draft allowed at the moorings is 10m.

Pilotage.—Pilotage is compulsory. Vessels should send their ETA 72 hours in advance through Guayaquil (HCG) on frequency 8476 kHz and 500 kHz. Vessels should send their ETA at the sea buoy 1 hour in advance to confirm, and contact the pilot by VHF channel 16 upon reaching the sea buoy. The pilots board at Lighted Buoy No.1 (2°44'S., 80°23'W.). There is another pilot station situated at Puna (2°44'S., 79°54'W.) when the approach is made through Canal de Jambeli. As the ship leaves the channel, the pilot debarks between Lighted Buoy No. 6A and Lighted Buoy No. 7.

Regulations.—Passing or overtaking is prohibited between Buoy No. 33 and Buoy No. 45; vessels with a following current have priority.

Anchorage.—Two anchorage areas, best seen on the chart, lie NW and SW of the sea buoy. The S anchorage area is for vessels carrying dangerous cargo. Anchorage is also available in suitable depths outside the fairway of the channel enroute to Puerto Marítimo, for which the pilot should be consulted.

The E zone of the channel, from Buoy No. 69 to Buoy No. 62, is used as an anchorage for explosives. Here, the channel is wide and may be as much as 120m away, especially off Buoy No. 69.

The S sector of Santa Ana Island has been designated as a quarantine anchorage; it is between Buoy No. 75 and Buoy No. 69. The anchorage sectors are left up to the opinion of the pilots, according to the needs or to the order of arrival of ships that wish to enter the Maritime Port. Tankers may transfer all or part of their cargo into barges while anchored 2 miles above Punta Samper (2°22'S., 80°00'W.).

Directions.—Vessels should approach the lighted sea buoy, moored about 10 miles W of Punta del Morro, avoiding the numerous offshore dangers. Vessels should then follow the recommended tracks E and SE through the entrance channel, which is marked by buoys, to Canal del Morro. Estero Salado is an estuary which extends NE from Canal del Morro for about 30 miles to the S point of Isla Santa Ana, where it divides and passes E and W of that island. The E branch leads NE passing E of Trinitaria Island and joins Estero del Muerto, where Puerto Marítimo is situated on the E bank just within the entrance.

The fairways are marked by buoys and ranges. The lighted sea buoy is equipped with a racon.

Cautions.—Vessels should exercise caution when approaching the seaward end of the entrance channel due to the frequent spells of low visibility over this coast, the strong tidal currents, and the tendency of the channel to silt.

The presence of unlit fishing craft in Golfo de Guayaquil has been reported.

The S entrance to Canal del Morro, which is unmarked and almost blocked by shoals, should not be approached without local knowledge.

Less water than charted has been reported (1997) in Canal de Morro, Estero Salado, and in Puerto Marítimo de Guayaquil.

In 1996, controlling depths were, as follows:

1. In the vicinity of the sea buoy—11m.
2. Between Buoy No. 8 and Buoy No. 13—8m.
3. Between Buoy No. 20 and Buoy No. 26—8.7m.

2.28 Canal de Jambeli—Guayaquil Approach.—The main approach to the Rio Guayas and the old port of Guayaquil is through Canal de Jambeli (3°10'S., 80°10'W.), an inlet extending about 50 miles NE from its entrance between Punta Salinas (3°01'S., 80°16'W.) and Punta Payana (3°19'S., 80°16'W.); the latter low and inconspicuous.

Isla Puna (2°50'S., 80°10'W.), a thickly-wooded and high island, lies on the NW side of Canal de Jambeli. A channel on the N side of the island leads to Estero Salado from Canal de Jambeli. The previously-mentioned shoal bank extends at least 7 miles W, 4 miles SW, and 2 miles S of Punta Salinas, but converges to 0.5 mile off Punta Arenas (3°02'S., 80°08'W.). A lighted buoy marks the outer (SW) edge of the shoals off Punta Salinas, the low, wooded SW end of Isla Puna. A light is shown on Punta Arenas, the wooded SE end of Isla de Puna. Cerro Zambapala (2°58'S., 80°13'W.) is a conspicuous peak of a range of hills.

Isla de Santa Clara (3°10'S., 80°26'W.), on which a light is shown, has steep-to fringing and detached dangers lying up to 3 miles off its shores. A dangerous underwater rock lies about 3 miles SSW of the island, which gives a good radar return at 20 miles. Isla de Santa Clara, lying in the approach to Canal de Jambeli, is high, prominent, and a good mark. The island, is divided into two parts which are joined at low water by a sandpit, should not be approached closer than 4 miles or within depths of 21.9m.

The approach to Canal de Jambeli can be made by passing either 6 miles N or S of Isla de Santa Clara; however, the S track, in depths of more than 36.6m, is preferable. The island, when approached from N, is visible from about 16 miles as three hummocks. Cerro Zambapala (2°58'S., 80°13'W.), the highest of several peaks, can also be seen at the same time.

Tides—Currents.—In Canal de Jambeli, the tidal currents follow the shoreline. The flood current runs at a rate of 3 to 4 knots and the ebb current reaches 8 knots in winter. Off Puna the flood current sets NW and the ebb current sets SSE at a rate of about 2.5 knots at springs. The flood current has a mean duration of 6 hours 6 minutes and the ebb current runs for 6 hours 14 minutes. The difference in times of the tidal current between Puna and Guayaquil is 1 hour 12 minutes for the flood and 2 hours 27 minutes for the ebb.

Depths—Limitations.—Canal de Jambeli has general depths of 6.5 to 13m. Depths of less than 5.5m lie up to 2 miles off the NW shore and up to 4 miles off the SE shore. A light is shown from Punta Jambeli (3°12'S., 80°01'W.). Banco de Mala (2°53'S., 79°52'W.) is an extensive, partly drying shoal which parallels the SE side of Isla de Puna. Bajo de Afuera (3°01'S.,

80°03'W.), with a least depth of 0.5m, lies at the S end of Banco de Mala. A narrow shoal, with a least depth of 0.5m, lies close E and parallel to the N part of Banco de Mala. Lighted buoys, moored clear of all shoals, mark the side of the channel. A depth of 6m shoal has been reported to exist at 6.8 miles WNW of Punta Jambeli.

Anchorage.—The island offers no protection against winds, waves, and currents; it is recommended that anchorage can be obtained within an area off the SE side of Isla Santa Clara, between parallels of 3°10.6'S and 3°11.1'S, and between meridians of 80°24.7'W and 80°25.2'W.

Caution.—A submarine gas pipeline is located in the approaches to the canal. It extends WSW from the shore to a point 5 miles S of Isla Santa Clara as seen on the chart. Vessels should not trawl or anchor in the vicinity of this pipeline.

2.29 Puerto Bolivar (3°16'S., 80°00'W.) ([World Port Index No. 15250](#)) is situated on the E side of Estero de Santa Rosa (3°14'S., 80°01'W.), about 4 miles within the inlet which is entered 1 mile NNE of Punta Jambeli.

Tides—Currents.—The tide occurs twice daily. The maximum known tides, such as the low and high tide, occur between the months of December through April and reach average heights of 3.2m.

Aspect.—Boca de Jambeli, the entrance of Estero de Santa Rosa, is about 0.3 mile wide and has a depth of 11m, but caution is advised when entering by this channel, as depths within it are constantly changing. An approach lighted buoy is moored on the outer side of shoals, about 1.2 miles NNE of Punta Jambeli.

When approaching the port, the buildings of the city of Machala, the port lights, the ocean buoys, and the lighthouses, particularly that of Punta Jambeli can be clearly seen.

The access channel is deep enough to accommodate ships with drafts up to 9m and there is ample room for maneuvering ships in its interior. The port is situated 5 miles from the open sea.

Puerto Bolivar has a concrete wharf with two 140m long berths. The wharf can accommodate ships with maximum drafts to 9.7m.

There is also a marginal wharf, 372m long, which also has two berths. The wharf can accommodate ships with maximum drafts to 10.6m. Both wharfs can accommodate ships up to 20,000 tons.

The port handles general cargo, refrigerated goods, dry grain, and liquid grain. The pilot station is situated at Data de Villamil, about 3 miles NW of Punta del Morro. The pilot station is situated at Data de Villamil, about 3 miles NW of Punta del Morro.

The Municipal Wharf can accommodate vessels with smaller drafts because of the 2m shoal which appears during low tide. The wharf is used by coastal traffic vessels.

The estuary of Guayaala has wooden wharfs which are used to load fruit brought in on small, short flatboats because the estuary is narrow and rather shallow. It can accommodate vessels with drafts up to 2.7m during low tide.

Pilotage.—With the exception of warships, all national or foreign ships greater than 50 tons must use pilots.

Piloting services are available 24 hours. The ship's agent should request such services from the port authorities at least 12 hours in advance.

The pilot boards about 1.5 miles N of Punta Jambeli.

Anchorage.—Anchorage can be taken, in depths of 5.5 to 11m, good holding ground of mud and clay, in the stream off the piers. Anchorage can be taken about 1 mile N of Punta Jambeli, if necessary while awaiting a pilot.

A quarantine area, which is the port's internal anchorage area, is bordered by 3°15.3'S and 3°16.75'S, and has a 5m shoal on its E shore and a 10m shoal on the W shore of the Santa Rosa estuary.

2.30 Canal de Jambeli (continued).—The E side of Canal de Jambeli, between Punta Jambeli and Punta Mondragon (2°39'S., 79°54'W.), is low, wooded, and intersected by many streams. Isla Mondragon (2°37'S., 79°52'W.) is low, mangrove-covered, and forms the E side of the entrance to the Rio Guayas. A drying bank and depths of less than 5.5m extends up to 3.5 miles S of Isla Mondragon. Punta Mondragon is the E entrance point of the Rio Guayas.

The NW side of Canal de Jambeli, between Punta Arenas (3°02'S., 80°08'W.) and Cerro Mala (2°48'S., 80°00'W.), consists chiefly of mangrove swamps intersected by inlets. Cerro Mala, with its two prominent peaks, appears as an island from the offing. The coast NE of Cerro Mala is cliffy and fronted by a beach. Punta Espanola (2°48'S., 79°56'W.), from which a light is shown, is cliffy and a useful clearing mark for Banco de Mala. Shoaling is reported (1992) about 3 miles SSE of Punta Espanola. Punta Mandinga (2°45'S., 79°54'W.), on which a light is shown, is a bold bluff forming the NE end of Isla de Puna. Bajo de Puna, with a least depth of 0.3m at its N end, lies 2 miles off Punta Mandinga.

Puna (2°44'S., 79°55'W.) ([World Port Index No. 15255](#)) is a port for ships unable to reach Guayaquil. Cargo is discharged into lighters at the anchorage. There is a prominent, white painted church in the town.

Puna is the pilot boarding place for vessels bound for the Rio Guayas and Guayaquil. A short pier, marked by two lights and a flagstaff, has depths of about 1 to 3m alongside. Passenger barges operate between Puna and Guayaquil. Anchorage for several vessels is available in the charted area about 0.5 mile NE of town, where there are depths of 11 to 14.6m, sand.

Directions.—From about 6 miles S of Isla Santa Clara, steer 060° for 30 miles to a position with Punta Arenas Light bearing 270°, distant 7 miles. Then steer 038° for about 10.5 miles passing E of a stranded wreck, marked by a lighted buoy, 9 miles ENE of Punta Arena Light to a position with Punta Mandinga bearing 000°, distant 8.5 miles; care should be taken not to get into depths of less than 7.3m. Change course to 005° for about 8.8 miles to a position about 0.8 mile E of Punta Mandinga. Then steer NW to the anchorage off Puna. On this latter course Punta Mandinga can be rounded at a distance of about 0.5 mile.

Caution.—Caution should be exercised as strong tidal currents have been reported to run off Banco de Mala.

The position of the buoys in Canal de Jambeli cannot be relied on.

It is reported that a stranded wreck, marked by a lighted buoy, lies about 9 miles ENE of Punta Arenas.

2.31 The **Rio Guayas** (2°40'S., 79°55'W.), the largest river on the W coast of South America, is navigable for about 80 miles. The river, about 3 miles wide at its main entrance between Punta Mondragon (2°39'S., 79°54'W.) and Isla Verde (2°39'S., 79°56'W.), leads N for 28 miles to the river port of Guayaquil. The lower part of the Rio Guayas, about 1 mile wide, is bordered by low, mangrove-covered islands fronted by drying mudbanks. Isla Mondragon and Isla Matorillos, on the E bank of the river, are actually large banks covered with mangrove trees encircled by partly drying mud flats.

Note.—A draft of 5.8m has been established for the entrance to the Rio Guayas for larger-sized ships.

Canal Naranjal and Canal Matorillos are connected with the Rio Guayas about 11.5 and 15 miles N of Punta Mondragon. These two channels discharge at their S ends into Canal de Mondragon, on the E side of Isla Mondragon, and are used by small craft.

The W bank of the lower part of the river is also low and tree-covered, but has occasional clear spaces on which landing may be made. The first of these, Puerto Balsa, is situated about 9.5 miles N of Punta Mandinga. Punta de Piedra, about 9.5 miles farther NNE, is more extensive and has a small pier. A light is shown from Punta de Piedra. Other landing places on both banks of the river as far as Guayaquil are shown on the chart.

2.32 **Isla Santay** (2°13'S., 79°52'W.) lies in the river E and SE of Guayaquil. A bank and shoals encircle the island and extend into the main channel of the river W of the island. The channel E of the island is shallow. About 2 miles above Guayaquil, the Rio Guayas is joined by the Rio Daule and the navigable stream is known as the Rio Babahoyo. Fixed road bridges span the two rivers close N of their junction; navigable spans beneath the bridges have vertical clearances of 7.2 to 10.6m. An overhead cable, with a vertical clearance of 24m, and a submarine water main cross the river at the N end of Guayaquil.

Depths—Limitations.—The Rio Guayas is encumbered by a bar that extends NNW between Punta Mondragon and Puerto Balsa (2°35'S., 79°55'W.). There is a least depth of 3.7m at low water, soft mud, over the bar located 8 miles N of Puna. No. 4 lighted buoy is moored on the bar. A black and white striped lighted buoy is moored in the constricted channel and W of several submerged rocks about 2.5 miles NNW of Puna. Bajo de Mondragon (2°40'S., 79°55'W.), a drying mudflat, lies in the entrance of the Rio Guayas and at the E side of the channel. Roca de Santa Rita (2°28'S., 79°52'W.), with a depth of 0.3m, lies in mid-channel and is marked close W by a lighted buoy. There are many other dangers in and near the channel leading to Guayaquil. Buoys, shown on the chart, mark these dangers. The channel sometimes shifts and the buoys may be out of position. There are lights shown on the E and W shores and a lighted range, in line bearing 150°, is shown from Sitio Nuevo (2°19'S., 79°50'W.).

Caution.—Large quantities of debris, tree trunks and branches, silt, etc. are carried downstream on the ebb tide, particularly during the rainy season. Buoys marking the channel and adjacent dangers could be missing or out of position. Depths in the river channel change often and silting is a problem.

Numerous fishing craft may be encountered off the entrance of the river.

Guayaquil (2°12'S., 79°53'W.)

World Port Index No. 15270

2.33 Guayaquil, the port, encompasses the city of Guayaquil on the W bank of the Rio Guayas and the town of Duran (Alfaro) on the E bank with its adjacent river facilities. Ocean-going vessels anchor in the river off the city and work cargo with lighters. A quay, capped by stone, extends along the entire bank fronting the city. Finger piers along the quay are joined to floating stages used by local river boats. There are no large wharves or piers in the port except at and near the grain silos at the S end of the city.

Winds—Weather.—Windstorms are infrequent. Earthquakes occur occasionally. Guayaquil has a dry season from May to December and a wet season from January to the latter part of April. Humidity is high during the wet season. There is a weather advisory service at Guayaquil.

Tides—Currents.—The spring range at Guayaquil is 3.6m, the mean range is 3.3m, and the neap range is 1.8m. Between Punta Mondragon and Guayaquil, there is no regularity in the times of the tides, probably due to the winds and velocity of the river current.

Off Guayaquil, the tidal current has a rate of 3 to 4 knots; the ebb has a rate of 6 knots at times. Rates as high as 8 to 12 knots have been recorded in the river off Guayaquil during the rainy season. There is a difference of about 30 minutes in the duration of the flood and ebb currents, the flood being shorter. The mean duration of the incoming current is 4 hours 56 minutes, and that of the outgoing current is 7 hours 38 minutes. The ebb and flood currents do not commence until at least 10 minutes after high and low water, with an average of 20 to 25 minutes. Occasionally the interval is as great as 1 hour 30 minutes with the ebb current, in which case it is never greater than 10 minutes with the flood current. During the rainy season, from December to April, the flood current lasts only 3 hours.

Depths—Limitations.—In the N part of the city, there is a concrete wharf with a length of 152m (the old customs wharf) and with a depth of 4.5m at the pilings.

At Duran (2°10'S., 79°51'W.), there is a wooden wharf belonging to the Anglo Company, which is used to unload processed petroleum products. A wharf, continuing the above-mentioned one, belongs to the Aztra Company and is used for exporting molasses. Tankers usually berth heading N and with the port anchor down. The tidal current sets off the pier and at times attains a velocity of 6 knots.

Cipresa has a 25m long wharf, with a maximum depth of 8m. This wharf is equipped to handle bulk cement and liquid bulk items.

Minaoil has a 55m long wharf, with a maximum depth of 7.6m. It has ten tanks of 400,000 gallons each. The type of cargo handled at this wharf consists of oil for lubricants.

Molinos del Equador is equipped with a 78m long wharf; the maximum depth at the foot of the wharf is 9.7m. The type of cargo handled at this wharf includes wheat, grease, or oil.

Industrial Molinera has two wharfs with a length of 24m; the maximum depth is 10.6m. The type of cargo handled at this wharf consists of wheat, oats, and corn.

Timsa has an 18m long wharf. The maximum depth at the wharf is 10m.

La Favorita has a 15m long wharf. The type of cargo consists of bulk soy beans and crude oils.

In addition to these commercial wharfs, there are eight municipal wharfs along the oceanfront.

Vessels up to 183m in length and 7.1m draft can be accommodated in the port.

There are strong tidal currents at all river berths, as much as 7 knots velocity at spring tides, making it preferable to berth heading downstream.

Pilotage.—Pilotage is compulsory. Pilots board off Puna (2°44'S., 79°55'W.). Pilots generally pick ships up 0.5 mile to the NE of Mandinga Point. Pilots are on duty 24 hours. The request for a pilot must be sent by radio to the Guayaquil Port captain or to naval radio. The pilot can be contacted by VHF.

Anchorage.—Pilots select the proper anchorage off Guayaquil. The anchorage is often congested and the holding ground poor in spots. Ocean-going ships anchor 0.3 mile off the city, or in mid-stream. It is reported that vessels of 183m are

permitted to anchor, but the anchorage is unsuitable for vessels over 146m in length.

Off Duran, vessels can anchor, in 9m, allowing for swinging room. Tankers anchor off the S end of Isla Santay and either lighten up or fully discharge.

Vessels carrying explosives anchor, in about 7.3m, off the S end of Guayaquil.

Long rafts of balsa logs are floated down the river and constitute a danger to anchored vessels at night. Floating debris and quantities of hyacinths drifting downstream may foul a ship's anchor chain. Due to the strong currents, it is advisable to be prepared to use the engines when necessary.

Directions.—Specific directions for the Rio Guayas to Guayaquil are not given as pilotage is compulsory and the channel is subject to silting and constant change. It was reported that vessels should arrive at Puna 3 hours before desired time of arrival at Guayaquil. Vessels can arrive at Guayaquil from 30 minutes before to 1.5 hours after HW at Guayaquil. Vessels leaving Guayaquil can sail from 1.2 to 2.2 hours after LW at Guayaquil.

It is preferable for vessels to berth heading S on the last of the flood tide, as there is a greater depth of water for turning the vessel; whereas, ships berthing heading N have to turn ship on departure soon after LW.