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**SECTOR 5** — CHART INFORMATION

## SECTOR 5

### WEST COAST OF MEXICO—CABO CORRIENTES TO RIO SUCHIATE

**Plan.**—This sector describes the W coast of Mexico and adjacent islands from Cabo Corrientes to the Rio Suchiate. The descriptive sequence is SE.

#### Cabo Corrientes to Manzanillo

**5.1 Cabo Corrientes** (20°24'N., 105°43'W.), which derives its name from the currents encountered in the vicinity, is a rocky headland with a flat top, 154m high. It may be identified by a white, rocky patch located on the side of the slope and several reddish-brown rocks lying at the base. The land close behind this cape rises to a height of 610m. The wooded slopes of the mountains in this vicinity are green during the rainy season and dark brown in the dry season. From the S, the cape appears bold and projecting, but it is not so prominent from the N and W. It is also reported to be radar prominent. A main light is shown from a stone tower with a dwelling, 15m high, standing on the cape.

**Winds—Weather.**—During the summer, the current between Cabo Corrientes and Bahia de Manzanillo has a variable rate, but always sets NW along the coast, being stronger near the land than offshore and increasing in strength as the cape is approached. The tidal currents are superimposed on the current off the cape causing the velocity at springs to range from nominal to about 2 knots.

Along the lower Mexican coast, the prevailing direction of the trade winds is NW, tending to parallel the coast. In the Gulf of Tehuantepec, strong N winds, known as "Tehuantepec," are often encountered during the cooler months. Land and sea breezes are characteristic of the W coast of Mexico. The sea breezes during the day are from the SW quarter. At night, the land breeze blows with less regularity in direction and force.

There are wet and dry seasons along this section of the coast. The rainy season extends from May to November and the balance of the year constitutes the dry season. The yearly rainfall averages 820mm at Manzanillo, 1,300mm at Acapulco, and 1,780mm in the Gulf of Tehuantepec. Much of the rainfall along this coast occurs in the form of thunderstorms or heavy showers which are most frequent in the afternoon. The largest monthly amount of rainfall is recorded in September and is due to the increased activity of tropical disturbances as well as the more N position of the low pressure belt.

**Caution.**—Between Cabo Corrientes and Puerto Angel, it has been reported that the features along the coast are difficult to identify.

**5.2 Punta Ysatan** (20°20'N., 105°41'W.), located 3 miles S of Cabo Corrientes, is a grayish, rocky point with a sandy beach on both sides. This point appears to project from the coast and should not be mistaken for Cabo Corrientes.

**Rocas Cucharitas** (20°18'N., 105°41'W.), a group of low rocks on a beach, lies about 3.5 miles S of Punta Ysatan. A low



**Cabo Corrientes Lighthouse**

reef extends up to about 0.3 mile seaward from this group of rocks and forms conspicuous breakers.

**Punta Ipala** (20°14'N., 105°36'W.), marked by a light, is located 6 miles SE of Rocas Cucharitas and consists of a bold-faced, gray bluff with several above-water rocks lying off its W side. The intervening coast is formed by a white, sandy beach.

Anchorage can be taken by small vessels in a depth of 9m within a cove lying on the SE side of the point. This cove provides shelter from all except S and SE winds, but care should be taken to avoid several rocks that lie close off a beach on the W side. Large vessels may anchor in a depth of 18m, good holding ground, about 0.5 mile offshore and WNW of a white house standing 2 miles SE of the point.

The coast between Punta Ipala and Punta Roca Negra, 32 miles SSE, is steep-to and backed by high, wooded hills in the interior. A pyramid-shaped hill, which is 279m high and easy to identify, rises 3 miles inland, 12 miles SSE of Punta Ipala.

**Punta Roca Negra** (19°45'N., 105°20'W.), a low bluff, is located under a peculiar black knob, 200m high, which forms the W extremity of a short range of hills. The black knob is easy to identify and forms a good landmark.

Roca Negra, 14m high, lies about 1 mile W of Punta Roca Negra and is marked by a light. It may be safely passed within 0.3 mile.

The coast between Punta Roca Negra and Punta Rivas, 15.5 miles SE, consists mainly of sandy beaches with a wooded background. A hill, 352m high and radar conspicuous, rises 4 miles NE of Roca Negra. A rocky bluff, which resembles an island when viewed from the W, is located 4.5 miles NW of Punta Rivas.

**Bahia Chamela** (19°33'N., 105°07'W.) is entered between Punta Rivas and Punta Monte Plano, 5.5 miles SE. Several islands lie within this bay which provides protected anchorage from November to June. During the remainder of the year, SE and SW gales send heavy seas rolling into the bay.

Two prominent peaks, 1,043m and 1,425m high, rise 11.5 miles and 16 miles ENE, respectively, of Punta Rivas.

Gueguenton, the W most peak, has a very peculiar shape and can be identified from a great distance during clear weather. A hill, 386m high with yellow bluffs close under it, stands on the S side of the bay, 11.5 miles SE of Punta Rivas. It may be used as a landmark if the mountains are obscured.

Isla Colorado and Isla Passavera, two conspicuous islands, lie 1 mile offshore near the middle of the bay. Isla Passavera, the N island, is 57m high and has prominent perpendicular, white cliffs. Isla Colorado, named for its reddish appearance, is slightly lower than Isla Passavera. Isla Novilla, a small islet, lies close N of Isla Colorado.

Isla Cocinas, a small and round islet, lies 0.7 mile SE of Isla Colorado. Several other small islands lie between this islet and the shore of the bay.

Anchorage can be taken anywhere between Punta Perula, located 0.5 mile E of Punta Rivas, and Isla Passavera. The best anchorage lies in a depth of 11m about 0.5 mile offshore in the NW part of the bay. This anchorage is sheltered from all except S winds and better protected against the swell. The village of Chamela is situated at the head of the bay. Small vessels can anchor in depths of 7 to 9m close E of Isla Cocinas and about 0.7 mile from the village.

**5.3 Punta Farallon** (19°24'N., 105°03'W.), marked by a light, is located 8 miles S of Punta Monte Plano and is low and rocky. The intervening coast consists of a series of rocky bluffs. A conspicuous small, rocky islet lies close off the point. Anchorage, sheltered from SE winds, can be taken in a depth of 18m about 0.2 mile offshore, 0.5 mile N of the point.

The coast between Punta Farallon and Punta Hermanas, 11 miles SE, consists of a sandy beach backed by a lagoon. The entrance to the lagoon lies 2.5 miles NW of Punta Hermanas.

**Los Frailes** (19°18'N., 104°57'W.) are two prominent needle-shaped rocks. They stand close together, 1 mile offshore, midway between Punta Farallon and Punta Hermanas. These rocks are of moderate height and stand out clearly from the coast. The inner rock has a conspicuous white top and is the sharper of the two.

Roca Tonina, low and steep-to, lies about 1.5 miles W of Punta Hermanas. The passage lying between this rock and the coast is foul.

Isla Pajaros, a square and perpendicular island, lies 0.3 mile SW of Punta Hermanas. It is 46m high, reddish-brown in color, and has a white top. A large, sharp rock lies close off the S side of the island and appears to be part of it.

**Punta Hermanas** (19°16'N., 104°53'W.) is the outer, bluff headland of a peninsula which is connected to the mainland by a narrow and sandy neck. Two prominent high hills stand on the peninsula. Foul ground extends up to 0.5 mile E of the point.

**5.4 Bahia de Tenacatita** (19°15'N., 104°15'W.) is entered between Punta Hermanas and Cabeza de Navidad, 4.5 miles SE. It is deep, spacious, and provides sheltered anchorage in the inner reaches for vessels of any size.

Roca Centro, 3m high and steep-to, lies about 0.5 mile E of Punta Chubasco, a projecting point, located midway along the W shore of the bay. A rock, with a depth of 1.2m, lies in the

middle of the channel leading between Punta Chubasco and Roca Centro. A shoal, with a depth of 7.3m, lies about 0.3 mile N of Roca Centro. Except for these rocks and shoals, all of the other dangers in the bay lie within 0.2 mile of the shore.

**Cerro de Navidad** (19°13'N., 104°50'W.) is located at the S end of Isla Iglesias, the central and largest of a chain of islets and rocks that extend 0.8 mile S from the coast. This headland, 122m high, is prominent when seen from any direction, but appears wedge-shaped from the S.

During the rainy season, the best anchorage is in a depth of 18m about 0.2 mile from the sandy beach at the head of the bay. During the dry season, the best anchorage is in the NW part of the bay, within Punta Chubasco.

The coast between Cerro de Navidad and Punta Bahia, 6 miles E, is lined by a series of rocky bluffs backed by high, wooded land.

**Punta Bahia** (19°13'N., 104°44'W.) is a high, white point with a chain of rocks extending about 0.3 mile SE from it.

**Volcan de Colima** (19°35'N., 103°37'W.) is the W extremity of the volcanic chain that traverses Mexico from E to W. This mountain is 3,847m high and rises 49 miles NE of Manzanillo.

**Nevado de Colima** (19°32'N., 103°38'W.), an extinct volcano, is 4,265m high and its summit is usually snow covered. This peak can be seen from a considerable distance during clear weather.

**5.5 Bahia de Navidad** (19°13'N., 104°43'W.) lies between Punta Bahia and Punta Graham. A sandy beach fronts the head of this bay and numerous buildings stand along its shores. Depths decrease from 42m at the entrance to 11m about 0.3 mile offshore.

**Punta Graham** (19°11'N., 104°42'W.), the S entrance point, is located 2.5 miles SE of Punta Bahia and marked by a light. It is 22m high and, like many other points along this coast, may appear as an island when first sighted. Roco Cono, a high rock of reddish-color, lies close off the W side of the point, but is not easily identified from any distance. A detached rock, 3m high, lies 0.4 mile SW of the point.

During the dry season, sheltered anchorage can be taken in a depth of 13m to the NNE of the rocks fronting Punta Bahia. More exposed anchorage can be taken in a depth of 18m to the ESE of the same rocks. Anchorage in the SE part of the bay is not recommended.

The coast between Punta Graham and Piedra Blanca, 12 miles ESE, is backed by a sandy beach with a lagoon lying behind it. Between Piedra Blanca and Punta Carrizal, 2 miles E, the coast is backed by a series of bluffs fringed by rocks.

A conspicuous airport is situated near the coast, about 12 miles WNW of Manzanillo. By day, a prominent group of low-storied white buildings can be seen standing alone. At night, bright white working lights are shown from the airport area.

**5.6 Piedra Blanca** (19°06'N., 104°30'W.), a steep-to islet, lies 1 mile offshore. This islet is 79m high and the deposits of sea birds give it a very white and conspicuous appearance. The passage lying between the islet and the rocks fronting the coast is deep.

**Punta Carrizal** (19°05'N., 104°27'W.), a bluff point, is marked by a light. A conspicuous high rock and several other detached rocks lie close off its seaward side.

**Punta de Juluapan** (19°05'N., 104°24'W.) is located 2.5 miles E of Punta Carrizal and two small bays, separated by a high point, lie between them. A group of seven steep-to and detached rocks, 1.5 to 6m high, lies centered 0.5 mile SSE of Punta de Juluapan and is known as Los Frailes. A light is shown from a structure standing on the SE most rock.

**Bahia de Santiago** (19°06'N., 104°23'W.) is entered between Punta de Juluapan and Punta de Santiago, 2.3 miles E. It provides anchorage in depths of 14 to 18m in the W and E parts, about 0.5 mile offshore. A prominent islet, fronted by shallow water, lies 0.1 mile W of Punta la Audiencia, a point located close inside the entrance to the bay. Three detached shoals, with depths of 5.4 to 5.7m, lie about midway between the entrance points of the bay and care should be taken to avoid them.

**Bahia de Manzanillo** (19°04'N., 104°21'W.) is entered between Punta de Santiago and Punta Ojo de Agua, 2.5 miles SE. This bay is fronted by a steep-to and sandy beach at the head, which separates it from Laguna de San Pedrito. Depths in the bay decrease from 48m at the entrance to 10m near the head. The town of Manzanillo stands in the S part of the bay. A small boat harbor, enclosed by breakwaters, lies near Punta Salagua, on the NE side of the peninsula that forms Punta de Santiago.

### Manzanillo (19°03'N., 104°20'W.)

World Port Index No. 15770

**5.7** The port of Manzanillo lies in the SE corner of Bahia de Manzanillo and extends into Laguna de San Pedrito. The outer part of the harbor is protected on the W side by a breakwater that extends 650m NE from the shore. The breakwater at the E side of the outer part extends 270m WSW from the shore and lies on the N side of an access channel which leads to the inner part (San Pedrito).

**Winds—Weather.**—The rainy season begins in June and ends in November. The dry season usually lasts from December to May.

The bay is safe from all winds except those from between W and SW, but these do not occur between November and June. Gales are infrequent, but severe storms may be encountered occasionally in the bay. These storms are rarely experienced during the dry season. The prevailing winds are from the NE between March and May, from the S and E between July and October, and from the NW between November and February.

**Tides—Currents.**—The tides rise about 0.7m at springs and 0.5m at neaps.

**Depths—Limitations.**—The Pemex N Pier, a T-headed dolphin jetty, lies on the SW side of the W breakwater. The main berth is 117m long and has depths of 12.8 to 13.4m alongside. Tankers of up to 80,000 dwt can be accommodated.

Pemex S Pier, a dolphin berth, is 272m long and has a depth of 12.8m alongside.

Muelle de la Armada, a naval wharf, is 150m long and has a depth of 5.2m alongside.



Entrance to Manzanillo



Manzanillo Harbor

Muelle de Cabotaje, a coastal quay, fronts the town. It is 310m long and has depths of 4.3 to 6.1m alongside.

Muelle Fiscal Wharf, a general cargo facility, projects N from the shore and provides three berths. The N berth is 58m long and has a depth of 9.7m alongside, the E berth is 236m long and has depths of 7.3 to 9.4m alongside, and the W berth is 216m long and has depths of 6.8 to 9.7m alongside. Mooring buoys are situated within 160m of the head of this wharf.

There is a container terminal, with a 250m long berth and a depth of 14m alongside.

Vessels of up to 200m in length and 13m draft can be handled in the outer harbor.

San Pedrito, the inner harbor, can accommodate vessels of up to 30,000 dwt and 12m draft. The access channel has a controlling depth of 13m. Muelle Fiscal, which includes a container terminal, provides 1,000m of berthage with a depth of 10m alongside.

**Aspect.**—A high radio tower stands 1.8 miles NNE of the head of the E breakwater.

Cerro de Juluapan (Table Mountain), a prominent flat-topped peak, is 825m high and rises 7.5 miles NW of the town. Cono

del Buque Perdido, a prominent cone-shaped peak, is 464m high and stands about midway between Cerro de Juluapan and the coast to the SW. Vigia Grande, a prominent hill, stands W of Manzanillo. It is 218m high and surmounted by a large, conspicuous white cross.

The entrance channel is indicated by a lighted range which may best be seen on the chart.

**Pilotage.**—Pilotage is compulsory. Pilots can be contacted by VHF and normally board about 1 or 2 miles from the breakwater. Vessels should send an ETA at least 24 hours in advance. Occasionally, pilots cannot board during periods of bad weather. If required, pilots, with prior arrangements, will board vessels up to about 5 miles seaward of the port.

**Anchorage.**—Anchorage can be taken in depths of up to 24m in the N part of the bay. The recommended anchorage lies in depths of up to 37m, mud and sand, about 1.2 miles NW of the breakwater head

Temporary anchorage can be taken inside the outer harbor in depths of 11 to 16m, mud, to the S of a line extending between the breakwater heads.

## Manzanillo to Acapulco

**5.8 Punta Campos** (19°01'N., 104°21'W.), a bluff headland, is located at the S extremity of the hilly land that extends S from Manzanillo and forms the W shore of Laguna de Cuyutlan. A main light is shown from a prominent tower, with adjacent buildings, standing on the point and a conspicuous chimney stands 1.5 miles E of it.

Roca Vela lies close S of the point. This rock is 34m high and appears as a sail from a distance.

The coast between Punta de Campos and Punta Cabeza Negra, 45 miles SE, consists of a gray, sandy beach upon which the sea breaks heavily. A detached and steep-to rock, 1.5m high, lies about 0.5 mile offshore, 18.5 miles NW of Punta Cabeza Negra. It is the only known off-lying danger along this part of the coast.

**5.9 Punta Cabeza Negra** (18°35'N., 103°43'W.), marked by a light, is 170m high and formed by a cliffy and densely-wooded peninsula. When viewed from the SE or the NW, it appears as an island joined to the mainland by a low isthmus. Roca Pelicano, a small white rock, lies close off the NW side of this peninsula and good anchorage can be taken in a depth of 18m about 0.5 mile NE of it.

Foul ground extends up to 0.8 mile offshore, about 3 miles ESE of Punta Cabeza Negra.

**Punta Tejupan** (18°21'N., 103°31'W.) is located 18.5 miles SE of Punta Cabeza Negra and three small islets extend up to 0.8 mile W of it. Vessels with local knowledge can anchor close NW of these islets, but there is little shelter. Foul ground, upon which the sea usually breaks, extends up to about 1.5 miles W from this point.

A prominent table-topped mountain, 1,220m high, rises 4 miles inland, midway between Punta Cabeza Negra and Punta Tejupan.

**Punta San Telmo** (18°20'N., 103°31'W.), a rocky bluff, is located 2.5 miles SSE of Punta Tejupan. A light is shown from a square tower, 12m high, standing 1.5 miles ESE of this point.

The coast extending for about 3 miles SE of Punta San Telmo consists of a series of rocky bluffs terminating in a sugarloaf rock, 23m high.

**Caution.**—During the day, both Punta Tejupan and Punta San Telmo can be passed at a distance of 2 miles. However, these points should be given a wide berth at night because of their lowliness and the variable currents in this vicinity.

**5.10 Piedra Blanca** (18°15'N., 103°22'W.), a prominent white rock, is 33m high. It lies close off Punta Piedras Blancas, a bluff, which is located 8 miles SE of Punta San Telmo. This rock, together with the white bluff behind it, forms an excellent landmark.

**Bahia de Maruata** (18°15'N., 103°21'W.), small and open, lies 0.8 mile E of Piedra Blanca and is used occasionally by vessels. A white beach lines the N shore and four islets lie close off a rocky bluff at the W end of the bay. A prominent wooded and cone-shaped peak, 652m high, stands 3.5 miles N of the bay. Anchorage can be taken in a depth of 12m, mud, about 0.3 mile offshore.

Paps de Tejupan, two peaks, are about 1,700m high and rise 14 miles NNE of Bahia de Maruata. The N peak is wooded all the way to the top, whereas the other is almost bare. Due to the high mountain ranges rising behind them, these peaks are difficult to identify from some directions.

The coast between Bahia de Maruata and Ensenada de Pichilinquillo, 12 miles ESE, consists of a series of prominent, bold bluffs intersected by a sandy beach, 3.5 miles long. The Rio de Coalcoman enters the sea 7 miles W of Bahia de Maruata. A small stream falls over a cliff 2.5 miles W of Ensenada de Pichilinquillo and leaves a yellowish-white deposit, which is visible from a considerable distance to seaward.

**Ensenada de Pichilinquillo** (18°12'N., 103°07'W.), an open bay, lies close W of Punta Lizardo and provides anchorage for small coasters. A rocky islet, 30m high, lies 0.8 mile off the W shore of the bay, but is difficult to identify. Anchorage can be taken in depths of up to 18m near the entrance. Smaller vessels can obtain better shelter in depths of 9 to 10m about 0.3 mile off the sandy beach at the head of the bay.

**Punta Lizardo** (Punta Iguana) (18°11'N., 103°07'W.), a dark headland, is about 1 mile wide. This point is thickly wooded, 30m high, and several detached rocks lie close off its seaward face.

The coast between Punta Lizardo and Buffadero Bluff, 22.5 miles ESE, consists of a series of bluffs with an unbroken stretch of sandy beach, 13 miles long, in the middle.

**5.11 Buffadero Bluff** (18°03'N., 102°45'W.), marked by a light, is reddish in color and has a rock lying at its base with a blow hole through which the water spouts. A prominent peak, 440m high, stands 4 miles WNW of the bluff. It descends in a gentle saddle-shaped slope to a knob, 293m high, and then slopes to the shore.

The coast between Buffadero Bluff and Punta Mangrove, 33.5 miles ESE, is backed by several bluffs for the initial 16 miles and then by an unbroken sandy beach for the remaining distance. The Rio Carrizal enters the sea 12 miles E of Buffadero Bluff and the village of Chula is situated 5 miles WNW of its mouth.

**Punta Mangrove** (Punta Cayacal) (17°55'N., 102°12'W.), a low and round point, is located 33 miles ESE of Buffadero Bluff. It is covered with mangroves and palms, but is difficult to identify. The point is marked by a light and a racon.

The delta of the Rio Balsas extends from Punta Mangrove to Bahia de Petacalco. This river, one of the longest and largest in Mexico, discharges into the sea through three mouths. During the rainy season, the discharge usually discolors the sea surface for up to 10 miles offshore. This discoloration has been observed extending up to 22 miles seaward at times.

**Caution.**—The depths lying off the delta of the river are very irregular and subject to constant change.

Breakers have been reported to exist about 2.5 miles S and about 2 miles SE of Punta Mangrove.

### Lazaro Cardenas (17°56'N., 102°10'W.)

World Port Index No. 15765

**5.12** Lazaro Cardenas, a new and developing port, lies within the delta of the mouth of the Rio Blasas. It serves a steel mill and an industrial complex, and is connected to the national railway system. The harbor is protected by N and S breakwaters.

**Winds—Weather.**—During the rainy season (July to October), occasional squalls occur.

**Depths—Limitations.**—The entrance channel is 200m wide and dredged to a depth of 14m. It leads NW into a turning basin, with a diameter of 700m, which is dredged to a depth of 14m. Several harbor basins may be entered from this turning basin.

The Grain Terminal is 250m long and has a depth of 13.7m alongside.

The Metal and Minerals Wharf provides 650m of berthage with depths of 12.8 to 14m alongside.

The Fertimex (fertilizer) Quay provides 509m of berthage with depths of 12.2 to 13.7m alongside.

The Container Terminal is 284m long and has a depth of 13.7m alongside.

The General Cargo Quay provides 504m of berthage with a depth of 10m alongside.

The Pemex Tanker Terminal is 200m long and has a depth of 14m alongside.

Vessels of up to 80,000 dwt, 267m in length, and 13.2m draft can be accommodated in the port. The limiting entrance draft may have to be reduced due to swell during the rainy season.

**Aspect.**—A main light is shown from a cylindrical tower, 40m high, standing near the W side of the entrance channel. A lighted buoy is moored 2 miles S of the light, at the E side of the anchorage area.

The entrance channel is marked by lighted beacons and indicated by a lighted range which may best be seen on the chart.

A large container crane stands in the vicinity of the harbor. From a distance, the industrial complex and the steel mill can be seen above the low land of the delta. At night, industrial flames, smoke, and working lights can be seen from a distance of 25 miles. Several prominent towers are situated close W of the harbor entrance.



Lazaro Cardenas

**Pilotage.**—Pilotage is compulsory. Pilots can be contacted by VHF and board about 2 miles S of the harbor entrance. Vessels should send an ETA at least 24 hours in advance. Vessels over 200m in length and 10.6m draft must enter during daylight only.

**Anchorage.**—Vessels may anchor in depths of 20 to 36m, good holding ground, within a designated area, which lies S of the entrance and may best be seen on the chart.

**5.13 Bahia Petacalco** (17°59'N., 102°05'W.), an open bay entered NE of Punta Mangrove, has a very uneven, lumpy, and shifting bottom. Vessels should use caution when entering this bay or approaching the shore.

The coast between Bahia de Petacalco and Isla Grande, 29 miles SE, consists of a steep-to and sandy beach. Punta Trancones, the only headland along this stretch, is 165m high and is located 9 miles NW of Isla Grande.

**Isla Grande** (17°40'N., 101°40'W.), 51m high, is irregularly shaped, covered with brush, and marked by a light. When viewed from seaward, it appears more like a headland than an island. A rock, with a least depth of 1.5m, lies about 0.6 mile N of the N extremity of the island.

Bahia Isla Grande, lying between Isla Grande and the mainland, is open to the NW. Anchorage can be taken in depths of 7 to 11m anywhere within this bay.

**Punta Ixtapa** (17°40'N., 101°39'W.) is the W extremity of Isla de Apies, a small island, which is 66m high and connected to the mainland by a narrow isthmus at LW. Monte Ixtapa, 220m high, rises 1.3 miles NE of this point.

Islas Blancas, a group of rocks and islets, lies across the central part of Bahia de San Juan de Dios, which is entered close E of Isla de Apies. These dangers, 6 to 46m high, are very prominent. They appear white when the sun shines on them, but brown at other times. Vessels can safely pass within 0.3 mile of the outer dangers of the group.

**5.14 Bahia de Zihuatanejo** (17°37'N., 101°33'W.), located 6 miles ESE of Punta Ixtapa, forms a small, but excellent harbor. It is easy to enter and deep water lies close off the rocks on either side of the entrance. The bay is open to the SW and a heavy swell often rolls in. The land around the bay, except at its head and along the E shore, rises abruptly from the beach to high, towering peaks. A village stands at the head, but is not visible until well inside the entrance. Anchorage can be

taken as convenient in depths of 11 to 18m, soft mud, with good holding ground.

Roca Negra, 14m high, lies 1 mile S of Punta Garrobo, the E entrance point of the bay. This rock is steep-to on all sides and marked by a light.

**Morro de Petatlan** (17°32'N., 101°27'W.), 195m high and covered with brush, is connected to the mainland by a low, wooded isthmus.

**Bahia de Petatlan** (17°35'N., 101°30'W.), lying N of Morro de Petatlan, is sheltered from all winds except those from between SW and NW. Good anchorage can be taken in depths of 9 to 18m, hard sand, about 0.6 mile N of Punta Gorda, the W extremity of Morro de Petatlan.

Rocas Potoci (White Friars), a group of whitened islets and rocks, lies centered 1.3 miles W of Punta Gorda. A deep passage, 1 mile wide, leads between the group and the point.

**5.15 Punta Japutica** (17°23'N., 101°10'W.), located 19 miles SE of Punta Gorda, is low, black, and rocky. The intervening coast consists of an unbroken stretch of sandy beach. The point is easily recognized, being the only rocky projection along this stretch of shore. A prominent patch of bright and clear sand, surrounded by bushes, lies 1 mile E of the point and a large coconut grove stands close E of it. A light is shown from a structure standing near the point.

Breakers have been observed off Punta Japutica during heavy weather.

**Morro de Papanoa** (17°16'N., 101°03'W.), located 9.5 miles SE of Punta Japutica, is the W most of four bluffs which line this stretch of the coast. It is 160m high and densely covered with brush and small trees. Morro de las Animas, a large rock, lies about 0.5 mile offshore, 3 miles N of Punta de Papanoa, the N extremity of Morro de Papanoa.

Bahia de Tequepa, lying N of Morro de Papanoa, provides excellent anchorage in a depth of 20m about 0.5 mile from the shore. This bay provides shelter against all winds except those from between SW and NW.

A conspicuous radio mast stands on the summit of Monte Tequepa, 3.5 miles NE of Morro de Papanoa.

The coast between Morro de Papanoa and the entrance of Bahia de Acapulco, 70 miles ESE, consists of an almost continuous stretch of steep-to sandy beach intersected by several small streams which flow into the sea during the rainy season. The land behind the coast is low, but farther inland, it rises progressively higher. A mountain range, with peaks up to 3,660m high, stands 41 miles NNW of Bahia de Acapulco.

**Paps de Coyuca** (17°24'N., 100°05'W.), formed by two distinct conical peaks of almost equal height, rises 34 miles NNW of Bahia de Acapulco. The peaks stand 1 mile apart and the tallest is 3,229m high.

The mountain peaks form excellent landmarks when visible, but are usually obscured by clouds, especially during the rainy season. At other times, they are clearest in the early morning.

This section of the coast may be safely approached and anchorage can be taken in depths of 18 to 27m about 0.5 mile offshore.

**5.16 Isla Roqueta** (Isla Grifo)(16°49'N., 99°55'W.), 107m high, lies off the W side of the entrance to the bay and is



**Isla Roqueta Lighthouse**

separated from the mainland by Boca Chica, a narrow and clear passage. Punta Coyuca, the W extremity of the island, is fronted by detached rocks on its W side. A tower, 46m high, surmounts the N extremity of the island, 0.5 mile E of Punta Coyuca. Punta Siclata, the S extremity of the island, is located 0.8 mile ESE of Punta Coyuca. A light is shown from a structure standing 0.2 mile NNW of this point. A racon and a signal station are situated at the light.

El Morro, an islet, is 15m high and lies close N of the NE extremity of the island. La Yerbabuena, a rock, lies about 0.3 mile ESE of the islet. It is 2m high and marked by a light. A reef, which breaks, extends about 200m W from this rock and is steep-to on its E side. The passage leading between La Yerbabuena and Isla Roqueta should not be attempted.

Boca Chica, the passage leading N of Isla Roqueta, is deep and clear, but its use by large vessels is prohibited because of the numerous pleasure craft normally encountered in the vicinity. Punta Lorenz, the N entrance point of this passage, is marked by a light. A detached shoal, with a depth of 4m, and a rock, with a depth of 4.9m, lie close SW and about 0.8 mile NNW, respectively, of the light.

**5.17 Bahia de Acapulco** (16°50'N., 99°53'W.) is considered to be one of the finest harbors on the W coast of Mexico. The high, encircling mountains provide considerable shelter and are visible for a great distance to seaward. The entrance channel, known locally as Boca Grande, has a width of more than 3 miles and provides ample depths for large vessels. Alongside berthing facilities are provided within Bahia de Santa Lucia which lies in the NW part of Bahia de Acapulco. The former bay is entered NW of Punta Grifo, which is located 1 mile NNE of the NE extremity of Isla Roqueta. Las Dos Piedras, formed by two white rocks, is marked by a light and lies off the point which divides the head of Bahia Santa Lucia into two parts.

**5.18** The head of Bahia de Acapulco, to the E of Bahia Santa Lucia, is fronted by several above-water dangers which lie within 0.3 mile of the shore. Farallon del Obispo, a rocky

islet, is 31m high and forms the most prominent danger in this vicinity. It is light gray in color, with dark patches, and is prominent. Several groups of rocks lie close offshore, about 0.5 mile E of Farallon de Obispo, and may best be seen on the chart.

Rocas de San Lorenzo, a chain of rocks, extends 0.3 mile SE from a point on the shore located 0.8 mile WNW of Farallon de Obispo. Roca La Seria, a dangerous rock, and a shoal patch, with a depth of 7.6m, lie 0.5 mile SW and about 0.2 mile SSE, respectively, of the outer end of the chain.

The E side of the bay as far S as Punta Guitarron is steep-to within 0.3 mile of the shore. A wreck, with a depth of 11m, lies about 0.5 mile N of Punta Guitarron. An oil pier is situated 0.4 mile E of Punta Guitarron and has a depth of 4.3m alongside its head. A naval pier, situated close N of the oil pier, is 90m long and has depths of 3.7 to 9m alongside.

**Punta Diamante** (16°47'N., 99°52'W.), the W extremity of a high promontory, is located 1.5 miles SE of Punta Bruja. It is faced by yellow cliffs and fronted by a reef. The promontory is reported to appear as an island from a distance of about 8 miles to seaward. A rock, with a depth of less than 1.8m, is reported (1952) to lie about 0.4 mile SSW of the point.

Puerto Marques, a small and sheltered inlet, is entered close N of Punta del Diamante. It recedes 1.5 miles E and has general depths of 7 to 36m. All of the dangers within this inlet lie less than 0.3 mile offshore and can easily be avoided.

## Acapulco (16°51'N., 99°54'W.)

World Port Index No. 15760

**5.19** Acapulco lies within a small bay in the NW part of Bahia de Santa Lucia. The city is the most popular resort in Mexico and the harbor has facilities for cargo and cruise vessels.

**Winds—Weather.**—The sea breeze is well defined during the dry season. It usually sets in from the SW at about noon, freshening and becoming more W during the afternoon, but fading to a calm at dusk. Later, there is a land breeze which is more irregular both in direction and force.

The rainy season lasts from June to the end of October. During December and January, the temperature is usually pleasant. However, during the latter part of the dry season, the heat over the land is intense and constant. During the rainy season, winds from the E and SE prevail.

**Tides—Currents.**—The tides rise 0.6m at springs and 0.3m at neaps.

Off Acapulco and for some distance to the E, the current sets ESE and attains a rate of 0.5 knot to 3 knots.

**Depths—Limitations.**—The port is entered via Boca Grande, the channel leading between Isla Roqueta and the mainland.

The main facilities are situated on the N side of Bahia Santa Lucia. The passenger wharf has 206m of berthage with a depths of 10 to 11m alongside. The Fiscal Wharf has 198m of berthage with a depth of 8.9m alongside. The Commercial Wharf has 150m of berthage with a depth of 4.5m alongside, and the Fishing Wharf has 173m of berthage with a depth of 4m alongside.

Vessel of up to 206m in length and 10.7m draft can be accommodated alongside.

**Aspect.**—The rocky headlands located on either side of the entrance of Bahia de Acapulco are the only projections to break the long stretch of sandy beach that extends from Morro de Papanoa. Cerro del Corcovado, an excellent landmark when not obscured, is 1,231m high and stands 21 miles ENE of the bay.

Two conspicuous hotels stand near the coast, 2.5 miles E of Punta Diamante. A conspicuous illuminated cross stands on the E side of the bay entrance. A prominent illuminated television mast stands on the crest of the hills, 3.5 miles ENE of the city. A conspicuous radio mast stands on a hill, 0.3 mile W of Punta Grifo. Fuerto San Diego, a prominent fort, surmounts a point located 1 mile NW of Punta Grifo.

**Pilotage.**—Pilotage is compulsory and available at any time. Pilots can be contacted by VHF and board about 1 mile SW of the harbor entrance. Vessels should send an ETA at least 72 hours in advance with a confirmation 24 hours in advance.

**Anchorage.**—Large vessels usually anchor in depths of 26 to 33m close ESE of Fuerto San Diego. Small vessels usually anchor in depths of 18 to 20m about 0.5 mile SSW of Fuerto San Diego.

The quarantine anchorage lies off Punta Grifo, at the entrance to Bahia Santa Lucia. All anchorage positions are advised by the pilot.

**Caution.**—Anchorage is prohibited in the vicinity of the naval facility at Icacos.

It has been reported (1997) that lighted aids to navigation are difficult to see and that many visual aids may be obscured by hills and cliffs.

## Acapulco to Bahia de Puerto Angel

**5.20** The coast between Punta del Diamante, on the SE side of the approach to Bahia de Acapulco, and Punta de Acamama, 60 miles E, consists of a continuous sandy beach backed by several lagoons.

A low, sandy, and bush covered point, which is marked by heavy breakers, extends from the coast, 16 miles E of Punta del Diamante. The entrance to Laguna Papagayo, into which the Rio Papagayo flows, lies close E of this point. During the rainy season and for some time afterwards, a heavy deposit from the lagoon discolors the water for several miles offshore. Vessels should not approach within 1 mile of the point.

An aeronautical light is shown from a structure standing 5.5 miles ESE of Punta del Diamante.

**5.21 Nexpa** (16°38'N., 99°13'W.), a village, stands 22 miles E of the mouth of the Rio Papagayo. It is situated close W of the mouth of the Rio Nexpa and, although small, is the largest habitation along this stretch of coast. A tall, wooden cross stands close E of the village and is prominent from seaward. A light is shown from a structure standing 1 mile E of the entrance to Laguna Nexpa.

**Punta Acamama** (16°32'N., 98°52'W.), located 20 miles E of the mouth of the Rio Nexpa, is a low, rocky point. It is fronted by several detached rocks and marked by a light. A line of heavy breakers, with depths of 7 to 11m at its outer edge, extends up to about 1 mile SE of the point.

**Bahia Dulce** (16°32'N., 98°50'W.) lies between Punta Acamama and the mouth of the Rio Dulce (Rio Ometepec), 8 miles ESE. The latter river is usable only by small craft and lighters. A village stands near the mouth.

The coast between the Rio Dulce and Morro Maldonado, 14.5 miles SE, consists of an unbroken stretch of sandy beach.

**5.22 Punta Maldonado** (16°20'N., 98°35'W.), a headland, is 2 miles wide, but only projects slightly from the general line of the coast. A light is shown from a prominent structure standing on Punta El Recodo, the NW extremity of this headland. Several white cliffs, up to 61m high, stand about 1 mile E of the headland. They are prominent and are the only such cliffs along this part of the coast.

Close inshore of Punta Maldonado, the flood current sets N and W with the ebb current setting in the opposite directions. The currents attain rates of 0.5 knot to 2 knots. It is reported that the current sets WNW during the rainy season.

**Caution.**—In the vicinity of Punta Maldonado, forest fires, which usually occur at the end of the dry season, are liable to cause so much smoke as to obscure all the land behind the coastline. This smoke may cause mariners to overestimate their distance from the land. Also, with the rising sun, the shadow cast beyond the line of breakers makes the beach appear farther off than may actually be the case. At this time of the year, it is recommended that vessels pass Punta Maldonado at a distance of not less than 8 miles.

Heavy tide rips have been observed about 6 miles SW of Punta Maldonado.

**Sierra Fuerte** (16°38'N., 98°15'W.), a prominent castle-like mountain, has a cone-shaped peak at each end and stands 26 miles NE of Punta Maldonado. The E peak is 1,168m high and the W peak is 1,052m high.

**Tartar Shoals** (16°18'N., 98°36'W.), a dangerous group of rocky patches, has depths of 2.7 to 8m and lies centered about 2 miles SW of Punta El Recodo. Seaward of this group, the depths are irregular for some distance to the W, but increase rapidly to the S and SW.

**Rio Verde** (15°58'N., 97°48'W.), the largest river along this section of coast, is obstructed at its mouth by a great quantity of debris and an impassable bar. When seen from the E or W, the land in the vicinity of the river mouth appears as a low, sandy point covered with trees and fringed by heavy breakers. During and after heavy rains, the discharge from the river discolors the water for a considerable distance to seaward.

**5.23 Punta Galera** (15°57'N., 97°41'W.), marked by a light, is located 6 miles E of the mouth of the Rio Verde. It is a bold, barren, isolated, and rocky headland which is connected to the mainland at the W side by a low, narrow strip of land. Laguna de Chacahua is entered close N of the point. A detached rocky shoal, with a depth of 1.8m, lies about 0.3 mile SSE of the point and the sea occasionally breaks on it. A detached reef, with rocks 3 to 5m high, lies about 0.5 mile E of the point.

Bahia de Chacahua lies between Punta Galera and Morro Hermoso, 7 miles E. The shore of the bay rises to a ridge which is covered with dense undergrowth and stunted trees. Large

amounts of debris are deposited in the bay and form uneven and shoal ground to the W of the entrance.

Morro Hermoso is a rounded bluff, 255m high, with a steep, barren, and reddish-colored S face. A light is shown from a structure standing on Cerro Hermoso, which rises behind the bluff. When viewed from the E or W, this bluff appears like an island. Good anchorage can be taken anywhere in Bahia de Chacahua in depths of 11 to 18m.

**5.24 Alcatraz** (Piedra Blanca) (15°55'N., 97°21'W.), small and rocky, lies about 0.3 mile offshore. This islet is whitish in color and two above-water rocks lie close E of it. A sharp, rocky bluff, 27m high, rises 1 mile W of the islet.

A detached rock lies 0.5 mile offshore, 3.5 miles W of Alcatraz. It has a depth of 2.7m and the sea occasionally breaks on it.

Two conspicuous points, which resemble piers, project from the coast, 3 miles E of Alcatraz. The Rio Manialtepec flows into the sea about 6 miles E of Alcatraz. The mouth of this river can be recognized by a few huts standing on the beach at the E side of the entrance and a small village situated 1 mile inland.

**Acantilados de Escondido** (15°51'N., 97°05'W.), located 16 miles E of Alcatraz, consists of several perpendicular, rocky bluffs. These bluffs are grayish in color on their seaward sides and 15 to 30m high. A bright yellow patch located about midway along the bluffs is prominent from the W.

**Bahia Escondido** (15°50'N., 97°04'W.) is entered between Acantilados de Escondido and Punta Escondido, 3 miles SE. It is open to the SW, but provides excellent anchorage with good holding ground. A light is shown from a structure standing on the W side of the bay. Cerro del Ocote, a conspicuous mountain, is 659m high and stands 5 miles NNE of the bay.

Piedras de la Marina, a group of rocks up to 12m high, lies within the bay, about 1 mile E of Acantilados de Escondido. A rocky shoal, with a depth of 6.4m, lies about 0.2 mile W of the S most rock. An obstruction has been reported to lie close SW of this shoal.

Anchorage can be taken in depths of 18 to 23m to the SSW of Piedras de la Marina.

**5.25 Punta Sicatela** (15°48'N., 97°00'W.), a low and sandy point, is located 2 miles SE of Punta Escondido. It is covered with mangroves and fronted by shallow depths, which are usually marked by heavy breakers. The Rio Sicatela flows into the sea close W of the point.

Punta de Rocas projects from the coast, 10 miles E of Punta Sicatela. This point is fronted by shallow depths which are marked by heavy breakers.

The coast between Punta de Rocas and Bahia de Puerto Angel, 20 miles E, consists of a sandy beach, which extends for the first 15 miles. The coast then rises abruptly to a series of high bluffs. The W most bluff is 78m high, prominent, and bold. It is covered with dense foliage except on its seaward face, which consists of brown and yellowish rocks.

**Roca Blanca** (White Rock) (15°39'N., 96°33'W.), a white and rocky islet, lies about 0.4 mile offshore, 2.3 miles W of Bahia de Puerto Angel. Roca Negra (Black Rock), a small

rock, lies about 0.3 mile W of Roca Blanca. The small bay lying N of these rocks is foul and should not be entered.

**5.26 Bahía de Puerto Angel** (15°39'N., 96°31'W.) (World Port Index No. 15740), a small harbor, provides shelter from November to May to small craft with local knowledge, but is exposed to the S. The bay is entered between a rocky islet, 30m high, lying on the W side and a bold bluff, 88m high, located on the E side.

Bufaderos, a bluff headland, is located 0.2 mile NNW of the E entrance point and forms the W side of a prominent hill, 61m high. A pole beacon, 4m high and surmounted by a white cross, stands on the summit of this hill.

Another islet, 30m high, lies off the W side of the bay and reduces the entrance fairway to a width of about 180m. Anchorage, sheltered from all except S winds, can be taken by small vessels in depths of 7 to 13m in the inner part of the bay. Large vessels can anchor in the outer part depth of up to 17m. At times, a heavy swell sets into the bay. A large loading platform, with a depth of 4.6m alongside, projects from the E shore of the bay, to the NE of Bufaderos.

A light is shown from a structure standing on Punta Izuca, which is located 0.5 mile W of Bahía de Puerto Angel.

### Bahía de Puerto Angel to Puerto de Salina Cruz

**5.27** The coast between Bahía de Puerto Angel and Bahía de Sacrificios, 15 miles E, consists of several rocky bluffs with strips of sandy beach between them. Inland, the coast is heavily wooded, but low and flat.

**Gulf of Tehuantepec** (15°00'N., 92°00'W.) lies S of the Isthmus of Tehuantepec, the narrowest part of Mexico. This gulf contains a great expanse of water and indents the coast between Bahía de Puerto Angel and Barra del Suchiate, 256 miles ESE.

The shores of the gulf are backed by high mountains. Cerro de Leon, 3,139m high, is prominent and rises 30 miles NE of Bahía de Puerto Angel. The mountains decrease from this peak to heights of less than 900m at the head of the gulf. They then increase again to Volcan Tacana, which is 4,064m high and stands 36 miles NNE of Barra del Suchiate.

**Tides—Currents.**—During the season of strong N winds, the currents in the gulf are influenced by the wind. When a N wind is blowing, the current sets N and E along the W shore and W along the E shore. At other times, the current sets in the opposite directions. This is caused by the violence of the strong N winds which lowers the water at the head of the gulf and produces a flow along each shore to fill the vacancy. When the N winds moderate or cease, the reverse action takes place. The water at the head of the gulf is then forced out along both shores by the return of the water previously forced out by the strong wind. These currents have been observed to extend as far E as Champerico and as far W as the Rio Verde.

**Caution.**—A designated dumping area lies along the coast and is limited by the following coordinates: 13°24'N, 96°16'W; 13°24'N, 95°22'W; 12°40'N, 96°16'W; and 12°40'N, 95°22'W. Authorization to use this area must be granted by the Mexican Authorities.

Less depths than charted, resulting from heavy silting, may be encountered in the harbors within the gulf.

**Bahía de Sacrificios** (15°41'N., 96°15'W.), a very small and confined bay, is sheltered from the E by Isla Sacrificios and suitable only for small craft. Passage between the island, which is 24m high, and the mainland is not recommended. Foul ground extends up to about 0.4 mile offshore, 1 mile W of the bay.

The coast between Bahía de Sacrificios and Cerro Morro, 70 miles ENE, is fronted by rocky bluffs, which rise close inland to mountain ranges. Detached rocks and reefs front all the points along this stretch and vessels should give them a wide berth.

**Isla Cacaluta** (15°42'N., 96°10'W.), 67m high, lies 0.2 mile offshore, 4.5 miles E of Isla Sacrificios. The intervening coast consists of a series of high bluffs.

**Punta Bufadero** (15°43'N., 96°08'W.) projects from the coast 2.3 miles NE of Isla Cacaluta. A light is shown from a prominent framework structure standing on this point. A blowhole in one of the rocks fronting the point spouts water and produces a sound like a whale that can be heard for a considerable distance in calm weather.

**5.28 Puerto Huatulco** (Guatulco) (15°43'N., 96°08'W.), a small and confined harbor, is entered between Punta Manzano, located 2.5 miles NE of Isla Cacaluta, and Punta Rosas, 0.4 mile NNE. The head of this harbor provides small vessels with good anchorage and is protected from SW winds, which occur most often between April and October.

Piedra Blanca, a rock, is 27m high and lies 0.2 mile SE of Punta Rosas. A reef, with several rocks barely above-water on it, extends up to about 0.2 mile ENE from Piedra Blanca. The passage lying between this reef and the reef extending from Punta Rosas should not be attempted.

**Bahía de Santa Cruz** (15°44'N., 96°07'W.), lying E of Punta Rosas, provides anchorage as convenient in depths of 9 to 18m.

**5.29 Bahía Tangola-Tangola** (15°46'N., 96°06'W.), lying E of Bahía de Santa Cruz, is 0.6 mile wide between the entrance points and contains several small, rocky islets. Good anchorage, with care, can be taken in depths of 9 to 18m, sand and shell, in the bay, but a considerable swell sets in from the S.

Isla Tangola-Tangola, lying close off the E entrance point of the bay, is prominent. The top of this island is covered with heavy growth and its outer side consists of a cliff formed by brownish stone.

The land along this stretch of the coast is backed by several ranges of foothills, which rise to the high mountain ranges in the interior. Cerro de Zadan, a bell-shaped mountain, is prominent and reddish in color. It is 1,727m high and stands 12 miles N of Bahía Tangola-Tangola. Cerro de Leon, the tallest peak in this vicinity, is 3,139m high and stands 22 miles NNW of the same bay.

The coast between Bahía de Santa Cruz and Punta Ayutla, 19 miles ENE, consists of a series of headlands fronted by steep cliffs.

**5.30 Punta Ayutla** (15°52'N., 95°47'W.), a bold and cliffy point, is 30m high and forms the E extremity of Morro Ayutla,

a headland, 82m high. A light is shown from a prominent square tower, 14m high, standing on this headland.

Ranger Rock, a detached rocky shoal, has a least depth of 2.7m and lies about 0.5 miles NE of Punta Ayutla.

Bahia Grande, entered close E of Morro Ayutla, is open to winds from the E and S, but provides safe anchorage in all seasons. The best anchorage lies in a depth of 13m in the W part of the bay.

**Islas Estrete** (15°56'N., 95°36'W.) is a barren, rocky, and white islet lying 12 miles ENE of Punta Ayutla. It is formed by two large rocks, of about equal size, and fringed by several reefs. A deep passage leads between this islet and the mainland.

A prominent dome-shaped bluff, with two cone-shaped rocks fronting its base, is located 8 miles E of Isla Estrete. A large rock, awash, lies centered 0.7 mile seaward of this bluff, but the sea seldom breaks on it. Bahia de Bamba, entered close NE of the bluff, is foul and should not be entered.

**Punta Chipehua** (16°01'N., 95°22'W.), a prominent headland, is located 13 miles ENE of Isla Estrete. It consists almost entirely of an immense sand dune projecting about 1 mile from the general line of the coast. From the W, this point is conspicuous and appears as a bold, dark cliff with a belt of sand over the top. A conspicuous knife-edged ridge, up to 450m high, rises close behind the point and extends about 0.5 mile NW. It is almost perpendicular on the E side.

**Bahia Chipehua** (16°03'N., 95°21'W.) is entered between Punta Chipehua and Punta de Guelagichi, 5.5 miles NE, and has a depth of 36m in the entrance. Although this bay is open to winds from between NE and S, it is considered to be a good anchorage in all seasons. A heavy swell often sets into the bay during new and full moons.

There is good holding ground in all parts of the bay, but the best anchorage lies in depths of 9 to 18m in the W part, about 1 mile N of Punta Chipehua

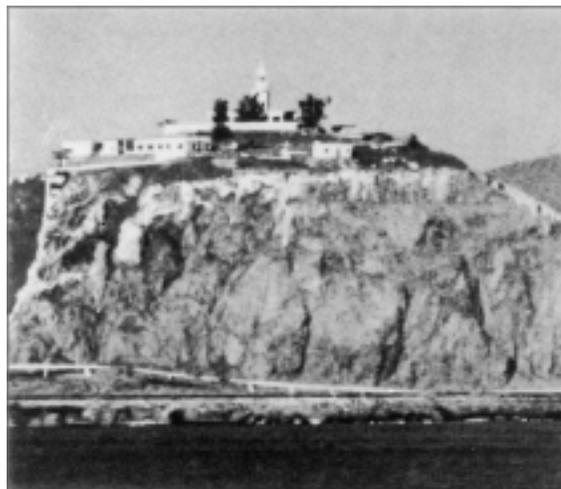
Bahia Conejo and Bahia de Salina Marques lie NE of Bahia Chipehua and are separated by Morro de Salina Marques. Cono Hermoso, an isolated and conical hill, is 93m high and stands at the head of Bahia Conejo.

**Morro de Salina Marques** (16°10'N., 95°12'W.), a round and rocky projection, has an almost perpendicular cliff rising at its E side. A main light is shown from a conspicuous tower with a dwelling, 14m high, standing on the summit of this projection and a group of tanks is situated close NW of it. A prominent radio mast is also reported to stand on the projection.

**Pico Shadani** (16°12'N., 95°14'W.), 326m high, rises 3 miles N of the head of Bahia de Salina Marques. A prominent rock, 18m high, surmounts the summit of this hill and resembles a house. Pico Tecuani, 675m high, rises 1.8 miles W of Pico Shadani and is prominent.

**5.31 Salina Cruz Offshore Terminal** (16°10'N., 95°12'W.) lies in Bahia de Salina Marques and consists of three SPM buoys, which are connected to the shore by submarine pipelines.

No. 1 SPM lies in a depth of 22.9m, 2 miles ENE of Morro de Salina Marques, and can handle vessels of up to 65,000 dwt.



**Morro de Salina Marques Lighthouse from SW**

No. 2 SPM lies in a depth of 23.8m, 1 mile ENE of Morro de Salina Marques, and can handle vessels of up to 65,000 dwt.

No. 3 SPM lies in a depth of 28m, 1.7 miles SE of Morro de Salina Marques, and can handle vessels of up to 250,000 dwt, 350m in length, and 21.3m draft.

Pilotage is compulsory and available during daylight only. Pilots can be contacted by VHF and board about 1 mile SE of No. 1 SPM.

**5.32 Bahia de Salina Cruz** (16°10'N., 95°11'W.), a slight indentation, lies between Morro de Salina and Punta Ventosa, 3 miles E. During the hurricane season (May to October), this bay is exposed to S winds and considerable heavy swells. During November and March, unpredictable and intense N winds, known as Tehuantepecers, blow without warning.

**Punta Ventosa** (16°10'N., 95°09'W.) consists of a bold and rocky projecting headland, which is surmounted by Cerro Morro, 139m high. Several rocks and small islets front this headland and the coast to the W. The remaining stretch of coast, as far SE as Barra del Suchiate, consists almost entirely of a low and sandy beach backed by a continuous line of shallow lagoons. Between these lagoons and the mountains inland, the terrain is generally low and wooded. A few scattered hills rise from the coastal plain at the head of the gulf, but none are prominent.

The currents in this vicinity are very irregular, both in direction and force. They sometimes set E at rates of 0.5 knot to 2.5 knots, but within 12 hours, they may set as strongly in the opposite direction.

Off Bahia de Sacrificios, the current has been observed to set N and E at a rate of 2 knots during strong N winds.

**Cerro Tres Picos** (16°11'N., 93°38'W.), 2,422m high, stands 70 miles E of the head of the gulf and can easily be seen in clear weather from a distance of about 90 miles. This peak appears from a distance as a cone towering above the surrounding mountains. However, from Barra de Tonala, 21 miles SW, it appears as three peaks, the middle one being the sharpest and highest.

**Puerto de Salina Cruz (16°10'N., 95°12'W.)**

World Port Index No. 15730

**5.33** Puerto de Salina Cruz lies in the NW part of Bahía de Salina Cruz. The port has facilities for general cargo, container, bulk, and tanker vessels. In addition, there is a small naval base. The outer harbor is protected by two breakwaters and is approached by a dredged channel.

**Winds—Weather.**—In the vicinity of the Gulf of Tehuantepec, which includes Puerto de Salina Cruz, the N winds are particularly strong. These winds, known locally as Tehuantepecers, generally prevail from October through April and at times blow with a force that exceeds force 8. There is less than one day per month of such winds from May to September. These winds may last several hours or several days, are liable to raise a high sea, and may be felt up to 100 miles offshore. The onset of these gale force winds may be indicated by a brief periods of rain from arched squall clouds followed by quickly clearing or cloudless skies. The barometer cannot be relied on to give any prior warning.

**Tides—Currents.**—The tides rise about 1.1m at springs and 1m at neaps.

The currents in the entrance of the outer harbor are usually weak and variable, but a current has been experienced at times setting W at rates of up to 3 knots.

**Depths—Limitations.**—The entrance channel leading into the outer harbor is dredged to a depth of 12m. The channel leading into inner harbor is dredged to a depth of 9.7m.

The Container Wharf, at the W side of the outer harbor, is 240m long and has a depth of 10.7m alongside. Generally, vessels of up to 200m in length and 9.6m draft can be accommodated in the outer harbor.

An LPG Wharf lies at the E side of the outer harbor and can handle vessels of up to 30,000 dwt, 197m in length, and 10.4m draft.

The SE side of the inner harbor provides 480m of berthage with depths of 7.3 to 10m alongside. The SW side of the inner harbor provides 460m of berthage with depths of up to 10m alongside. Generally, vessels of up to 180m in length and 9.1m draft can be accommodated in the inner harbor.

**Aspect.**—The entrance channel is indicated by a lighted range which may best be seen on the chart.

Two prominent radio towers, situated close together, stand on the E side of inner harbor.

**Pilotage.**—Pilotage is compulsory for all foreign vessels and Mexican vessels over 500 grt. Pilots can be contacted by VHF and board about 0.6 mile SSE of the head of the E breakwater. Normal hours of operations are 0600 to 1800.

**Regulations.**—A Vessel Traffic Service (VTS) has been established in the approaches to the port. Vessels must contact the VTS 1.5 hours prior to arrival, stating ETA, draft, and last port of call. Any vessels intending to load gas or oil must also contact PEMEX on VHF channel 9.

Vessels must contact the VTS when 6 miles off the port; these vessels are then classified as "arrived vessels." The VTS will then provide pilotage instructions, anchorage positions, and berthing instructions.

All vessels must maintain a continuous listening watch on VHF channel 6.

**Anchorage.**—Anchorage can be taken outside the breakwaters, clear of the entrance range, and no closer than 0.5 mile from the coast. The holding ground is moderate and the anchorage positions are assigned by the port authorities.

**Directions.**—An IMO-adopted Traffic Separation Scheme (TSS) lies in the approaches to the port and may best be seen on the chart. This TSS consists of two parts:

1. A recommended approach route from the S for vessels over 500 grt arriving at, or leaving, the port of Salina Cruz.
2. A recommended approach route from the SW for tankers proceeding to, or coming from, the offshore terminal.

A Precautionary Area has been established at the junction of these S and SW approach routes.

**Caution.**—The entrance channel is subject to silting, but regular dredging is carried out.

**Puerto de Salina Cruz to Rio Suchiate**

**5.34 Bahía Ventosa (16°10'N., 95°08'W.)** lies close E of Punta Ventosa. The Rio Tehuantepec flows into the sea 2.3 miles NE of the latter point. Heavy breakers extend up to about 1 mile offshore in the vicinity of the mouth of this river. The city of Tehuantepec stands 10 miles above the river entrance.

The coast between Bahía Ventosa and Boca de San Francisco, 23 miles E, is low, brush covered, and backed by a series of large lagoons. The white dome of the church situated at San Mateo del Mar, about midway along this stretch of coast, and the cupola tower of the church situated at Santa Maria, 7 miles farther E, are conspicuous.

Boca de San Francisco, the entrance leading into the large lagoons, is marked by heavy breakers which extend up to 0.5 mile offshore. A prominent white sand dune, 6m high, stands on a low spit of land, 0.5 mile W of this entrance.

A stranded wreck lies close W of the W entrance point of Boca de San Francisco and is reported to be radar prominent.

The coast between Boca de San Francisco and Barra de Tonala consists of a low, sandy beach backed by a large lagoon. Lights are shown from structures standing along the shore 3.5 miles W, 16 miles E, and 35 miles E of Boca de San Francisco

**5.35 Barra de Tonala (16°00'N., 93°57'W.)**, a bar, lies 49 miles ESE of Boca de San Francisco and obstructs an entrance leading into the lagoon. It is marked by breakers which extend up to 0.8 mile offshore. Anchorage can be taken in a depth of 22m about 0.5 mile seaward of these breakers.

**Puerto Arista (15°56'N., 93°50'W.)**, a small town, is situated 8 miles ESE of Barra de Tonala and marked by a light. It was formerly a commercial port for the town of Tonala, 9 miles inland. Anchorage can be taken in a depth of 18m to seaward of a group of houses with red roofs. The holding ground is good, but vessels often lie broadside to the swell.

**Paredones de Soconusco (15°51'N., 93°41'W.)**, a group of hills, attains a height of 610m and stands 10 miles SE of Puerto Arista. Cerro San Bernardo, 925m high, rises near the N end of this group, 5 miles inland. This mountain and the hills are conspicuous, appearing green in the wet season and brown in the dry season.

The coast between Paredones de Soconusco and Barra de Zachapulco, 61 miles SE, is backed by low, wooded terrain, which



**Puerto Arista Lighthouse**

rises close inland to a mountain range. Barra de Zachapulco fronts the entrance to a lagoon and is marked by breakers extending up to 0.3 mile offshore. From this entrance, the coast extends 20 miles SE to Barra de San Jose and then 19 miles SE to Puerto Madero.

**Puerto Madero** (14°42'N., 92°27'W.) (World Port Index No. 15710) lies on the SE side of the Gulf de Tehuantepec and serves as the port for the city of Tapachula, which stands 15 miles inland. It also provides extensive fishing facilities.

**Depths—Limitations.**—The harbor is entered between two parallel rubble breakwaters, which lie 340m apart and extend 750m SW from the shore. The entrance fairway is 80m wide and has a controlling depth of 8.5m. The channel leading to the fishing quay has a dredged depth of 7m.

The main commercial quay is 150m long and has a depth of 8.5m alongside. The fishing quay and naval pier have a depth of 7m alongside. Vessels of up to 165m in length, 25m beam, and 8m draft can be accommodated.

**Aspect.**—The entrance fairway is marked by an outer lighted buoy and indicated by a lighted range.

**Pilotage.**—Pilotage is compulsory. Pilot can be contacted by VHF and board about 0.5 mile off the entrance. Vessels should send an ETA 48 and 24 hours in advance.

**Anchorage.**—Anchorage may be obtained in depths of 12 to 16m, mud with good holding ground, between 0.5 mile and 1.5 miles SSW of the entrance.

The coast between Puerto Madero and the Rio Suchiate, 13 miles SE, is backed by a continuous stretch of lagoon, which is separated from the sea by a narrow strip of land. The Rio Suchiate marks the approximate boundary between Mexico and Guatemala and separates the towns of Tecun Uman, the terminus of the Guatemalan railroad, and Suchiate, 3 miles W.