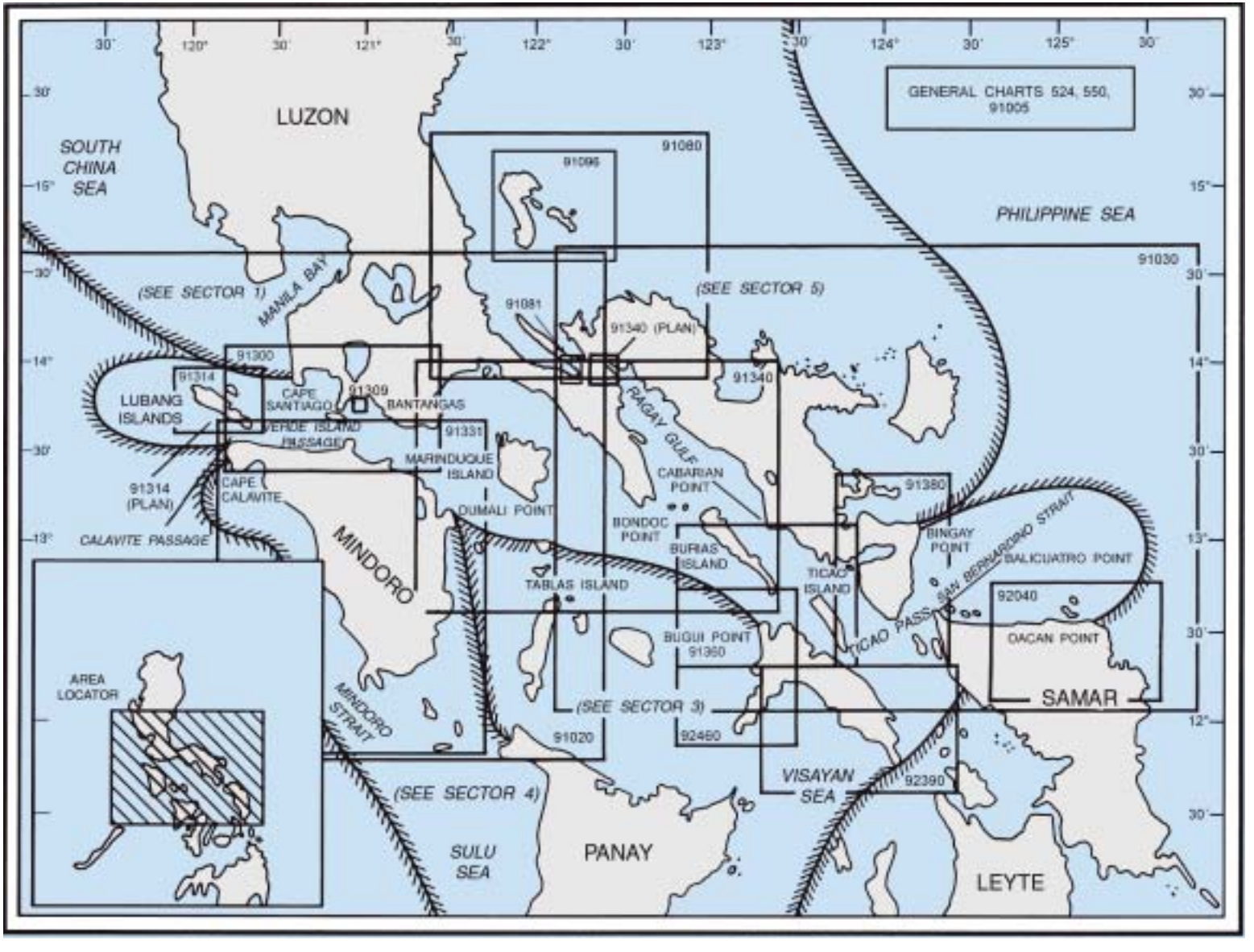
Select "See Sector" to be Hotlinked to that Sector



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **2** —CHAR T INFORMATION

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SECTOR 2

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SOUTH COAST OF LUZON

Plan.—This sector describes the coasts, islands, and dangers along the recommended route from the Verde Island Passage through the San Bernardino Strait.

This description includes the Lubang Islands, the N and NE coasts of Mindoro, the S coast of Luzon, Marinduque, Burias Island, Ticao Island, NE side of Masbate, and the N coast of Samar. The arrangement is from W to E.

General Remarks

2.1 Winds—Weather.—The climate of Batangas is subtropical. The directions of the prevailing winds are NE from October through April, SE in May, and W changing to SW from April through September. The average wind velocity is about 3 knots.

Batangas Bay is affected by about 16 percent of the typhoons passing over the Philippine Islands. The typhoon season is usually from August to December, although occasional strong typhoons pass over this area in May and June.

In general, the winds in Ragay Gulf follow the monsoons, and the monsoons draw strongly up and down the gulf. The land breezes are often very squally in Ragay Gulf.

The wind off Marinduque follow the monsoons generally, and the Northeast Monsoons blow strongly down toward the N coast of Marinduque. The land breezes are often squally in the vicinity of Marinduque.

The N coast of Samar is exposed to the full force of the Northeast Monsoon which often blows at gale force, accompanied by torrential rain and a very heavy swell.

The channel between the Lubang Islands and the SW coast of Luzon is the subject at times to heavy offshore squalls between the hours of 0400 and 1000.

Rough seas are encountered in Calavite Passage during the Northeast Monsoon, which, although interrupted to the NE by the high land of Luzon, strikes the heights of N Mindoro and blows hard through the pass and off Cape Calvite. Strong winds also draw through Calavite Passage during the Southwest Monsoon.

Fog and rain, although encountered at all seasons of the year, are particularly prevalent during July, August, and September.

Tides—Currents.—The Verde Island tidal current passes S along the W coast of Luzon and deflects some of its water into Manila Bay. It continues along the coast as far as Punas Point and then divides into two branches.

One branch sets NE around Tayabas Bay and N and E of Marinduque and through Mompog Pass. It then reunites with the other branch.

This branch passes SE along the Mindoro coast as far as **Dumali Point** (13° 07'N., 121° 33'E.), then continues E and S of Marinduque as far as the Bondoc Peninsula.

It then meets the flood current from the Pacific entering through San Bernardino Strait. It has been observed that upon arrival off Bondoc Point with a fair current a reverse current has been experienced in passing its meridian.

The N part of the Verde Island current, which follows round Balayan and Batangas Bays, reunites with the main current in the vicinity of Verde Island.

It produces violent rips and eddies in that part of the channel beteen Malabrigo Point and Escarco Point.

Strong tidal currents, rips and whirlpools are found in San Bernardino Strait and in its approaches. The tidal currents attain a rate of 4 to 8 knots in the narrow part of the strait between Calintaan Island and Capul Island and cause strong eddies and whirlpools.

The tidal currents in the wider part of the strait spread out and lose some of their force. The tidal currents in Biri Channel, Ticlin Strait, and in the passes connecting San Bernardino Strait with Samar to the SE, namely Naranjo Pass and Dalupiri Pass, are described with the particular pass.

Verde Island Passage (13° 35'N., 121° 00'E.), described beginning in paragraph 2.9 (N side) and paragraph 2.18 (S side), lies between the SW side of Luzon and the N side of Mindoro. The passage connects the South China Sea with the deep channels off the S side of Luzon. The passage is divided by Verde Island. These navigable passages are known as North Pass and South Pass.

The channels between Verde Island Passage and the strait of San Bernardino are for the most part deep and clear of dangers in the fairway. The islands in the vicinity are mostly high, rugged, and steep-to.

There is insufficient information pertaining to the set of the current through Verde Island Passage. The currents are variable and often indefinite and depend to a great extent on the variation of the wind.

The current is generally W from November to May; E from July to October.

A Traffic Separation Scheme, best seen on the chart, has been established in Verde Island Passage; this TSS is not IMO-approved.

San Bernardino Strait (12° 35'N., 124° 12'E.), described beginning in paragraph 2.101, lies between the SE extremity of Luzon and the NW part of Samar. The strait is wide, deep, and free from dangers in the fairway. It connects the Pacific Ocean with the deep channels leading to Manila, via Verde Island Passage, and to Cebu.

The usual route taken by vessels bound from Manila or W Luzon ports to San Bernardino Strait is through Verde Island Passage, then S of the Tres Reyes Islands, SW of Marinduque, then between Burias Island to the N and Masbate and Ticao Islands to the S.

The route continues round the SE end of Luzon, and between it and the NW extremity of Samar.

Lubang Islands

2.2 These are a group of six islands which lie off the NW end of Mindoro and the SW end of Luzon.

Cabra Island Light

Cabra Island (13˚ 53'N., 120˚ 02'E.) is marked by a light on its W extremity. The light is reported to give a good radar return up to 21 miles.

The W island of the Lubang Island group is flat-topped, wooded, steep-to on the SE side and about 61m high. The N and NE sides are reef fringed, extending out for a distance of 91m.

A stranded wreck, conspicuous on radar, lies 1 mile SE of the light.

Lubang Island (13˚ 48'N., 120˚ 10'E.) is the largest and most important of the group, attaining an elevation of 600m near the middle, but is low at each extremity. When the island is approached from S, the NW extremity of the high land just mentioned may be mistaken for the end of the island.

A vessel has reported that when approaching Lubang Island from the SW, there are a number of bright lights from a small town near the NW end of the high side of the island. Lights were visible at a distance of 45 miles.

Lubang Island was reported to give a radar return in excess of 40 miles.

The channel between Cabra Isla and Lubang Island is 1.5 miles wide; it is deep and clear of dangers. The flood current sets N and the ebb current S in the channel.

Two conspicuous domes are located on a mountain in approximate position 13˚ 47.3'N, 120˚ 08.7'E.

The coasts of Lubang Island are fringed by a reef which extends up to 0.5 mile offshore in some places. The SW side of the island is rocky, and indented by Tagbac Cove, Gontin Bay, and Tabafin Bay, serving some protection from the Northeast Monsoon as opposed to the several bays on the NE and E side of Lubang Island which are difficult to enter due to the many reefs and shoals.

Lubang (13˚ 52'N., 120˚ 07'E.), the principal town, is situated on the N side of the island. It stands on the edge of a fertile plain.

A shoal, with depths less than 6m, extends about 0.5 mile offshore abreast the town.

Landing is difficult in front of the town because of the coral reef that fringes the coast. The reef breaks close W of the town, allowing small boats to pass in good weather at certain stages of the tide. Vessels proceeding to Lubang should steer for the town, bearing about 166˚, until the SW point of Ambil Island is in range with the first point E of Port Tilic, bearing 122˚, at which time the vessel should heave-to, about 1.5 miles offshore.

2.3 **Afuera Shoal** (13˚ 52'N., 120˚ 11'E.), with depths of from 2.1 to 18.3m, lies in a position about 3.75 miles E of Lubang.

A detached coral patch, with a least depth of 6.7m, lies about 2.75 miles ESE of Lubang.

Port Tilic (13˚ 49'N., 120˚ 12'E.) is entered about 5 miles SE of Lubang, sheltered from all winds, and is completely protected from the sea. The holding ground within Port Tilic is good, but the small anchorage area is restricted to small vessels with local knowledge.

A light marks the W side of the entrance to the port.

The narrow entrance, between the reefs on either side, is open to the NNW and has depths of 18 to 26m.

A drying reef divides the head of the port into two small, but good anchorages. The W shore of the port can be approached until the anchorage off the W entrance point is reached, where there are depths of from 6 to 9m, mud and sand.

Tilic (13˚ 49'N., 120˚ 12'E.) (World Port Index No. 58340), a small settlement on the W side of the port, is of some

importance since most of the trade between Lubang Island and the mainland passes through the town.

2.4 Tagbanan Point (13° 48'N., 120° 15'E.) is located about 3 miles SE of the E entrance point to Port Tilic. Balakias Bay (Baliquias Bay) is entered immediately N of Tagbanan Point.

Tumbaga Point (13° 44'N., 120° 17'E.) lies about 4 miles SSE of Tagbanan Point. A bank, with depths of less than 11m, extends 0.8 mile NE from Tumbaga Point.

Another spit, with a depth of 8.2m over its outer end, extends 0.3 mile SE from the same point.

Looc Bay (13° 43'N., 120° 16'E.) is entered between Tumbaga Point and Pauican Point, about 1.5 miles S. The head of the bay is encumbered with reefs and shoals, which prevent direct access to the shores. Looc, a small village, stands on the W shore of the bay.

Vessels with local knowledge will find anchorage just inside the entrance to the bay, in from 18 to 37m, good holding ground. Small vessels in the inner anchorage, near the head of the bay, are protected from E winds by the reefs in the middle of the bay.

Shoal banks extend 0.6 mile N and 0.45 mile NE from Pauican Point.

Talinas Island (13° 42'N., 120° 18'E.) lies on foul ground which extends 0.35 mile E from the point.

A shoal, with a depth of 6.4m, lies 4 miles E of Pauican Point. Two 12.8m patches lie 2 miles ENE and ESE, respectively, of the same point.

2.5 Manog Point (13° 40'N., 120° 16'E.) is the S extremity of Lubang Island.

Tabajin Bay (13° 42'N., 120° 14'E.), open to the W and SW, is entered between **Yapusan Point** (13° 43'N., 120° 13'E.) and a point about 2.5 miles ESE. The latter point, which is fronted by a reef as far as 0.5 mile W, is located about 2 miles NNW of Manog Point.

There is anchorage for small vessels, sheltered from the Northeast Monsoon, about 0.25 mile offshore in the N part of Tabajin Bay, in a depth of 18m.

Detached shoals, with depths of 8.2m and 12.4m, lie in the NW part of the bay, about 0.5 mile offshore and about 1 mile SE of Yapusan Point. Landings can be made on a sandy beach at the head of the bay.

Gontin Bay (13° 44'N., 120° 12'E.), an open roadstead, is entered between Yapusan Point and **Gontin Point** (13° 44'N., 120° 10'E.), about 2.75 miles NW. The bay is open to all but N and E winds and provides only fair weather anchorage, in 18.3m or less, about 0.25 mile from the shore.

A detached shoal, with a depth of 10.9m, lies 0.75 mile SE of Gontin Point.

Nosoque Point (13° 45'N., 120° 09'E.) is located 1.25 miles WNW of Gontin Point. Pinagdagatan Point lies 1.75 miles further WNW.

Tagbac Cove (13° 50'N., 120° 05'E.), open to the SW, is located about 1.25 miles SE of **Palapag Point** (13° 51'N., 120° 05'E.), the W extremity of the island. Vessels with local knowledge can take anchorage, sheltered from the Northeast Monsoon, on the SW side of the cove in a break in the coastal reef, in a depth of 28m.

The land in the vicinity is low and there are no prominent landmarks. The reefs show plainly and no difficulty should be experienced in finding a convenient anchorage.

The village of Tagbac is located on the N side of the cove.

Sala Point (13° 52'N., 120° 05'E.), the N extremity of the island, lies 1.25 miles NE of Palapag Point.

2.6 Ambil Island (13° 48'N., 120° 18'E.), separated from Tagbanan Point, on the NE side of Lubang Island, by Ambil Pass, about 1 mile wide, is about 755m high and conical in shape.

The shores are irregular and several open bays lie between the projecting points. The NE side of the island is high and rocky. An open bay, with depths of from 18 to 22m, shoaling to 9.1m near the fringing reef, lies on the coast.

The W side of the island has a narrow peninsula extending about 1 mile W, with an open bay lying on each side of it. The bay on the N side is fronted by shoals and has irregular depths.

The bay on the S side is restricted by reefs which extend about 0.3 mile offshore.

A shoal, with a depth of 4.5m, lies in mid-channel between the reefs, thereby limiting the space available for anchorage.

The shores of the remainder of the island are steep-to and are generally inaccessible.

Anchorage can be taken near the head of the bay on the NE side of the island, about 0.5 mile offshore, in a depth of 14.6m.

Ambil Pass (13° 47'N., 120° 16'E.), the channel between the E side of Lubang Island and the W side of Ambil Island, is about 1 mile wide. There is a least depth of 7.3m in the fairway. The fringing reefs on either side contract the channel to a width of about 0.65 mile.

A shoal, with a least depth of 12.4m, lies in the S entrance of the channel in a position about 1.5 miles WSW of **Antucao Point** (13° 47'N., 120° 19'E.).

In the passage, the flood current sets S and the ebb N.

Antucao Point (13° 47'N., 120° 19'E.) is the S extremity of Ambil Island. A shoal, with depths of 8.2 to 18.3m, lies from 0.25 to 0.75 mile E of the point.

Colasi Point (13° 47'N., 120° 20'E.) lies about 1.5 miles ENE of Antucao Point. Detached shoals, coral, with charted depths of 14.6m, are located about 0.75 mile SE of the point.

Tambo Point (13° 48'N., 120° 20'E.) lies about 1.25 miles N of Colasi Point. Detached shoals, with depths of from 13 to 18m, lie about 0.75 mile ENE of the point.

2.7 Mandaui Island (13° 50'N., 120° 20'E.), 84m high, lies about 0.75 mile NNE of Mahaba Point, the NE extremity of Ambil Island.

The NE side of the island is steep-to. A reef extends about 183m S from SW side of the island, with depths of less than 6m extending about 0.15 mile farther SW.

The channel between Mandaui Island and Ambil Island is about 0.3 mile wide, with a least depth of 9m in the fairway.

Malavatuan Island (13° 52'N., 120° 21'E.), 76m high, covered with brushwood, lies about 1.5 miles NNE of Mandaui Island. The channel between the two islands is about 1.5 miles wide, with depths of from 28 to 42m in the fairway.

A shoal, with a depth of 10.9m at its outer end, extends about 0.5 mile NW from the island. A shoal, with a depth of 11.5m, lies about 1 mile NW of Malavatuan Island.

Two shoals, each with a least depth of 12.8m, lie about 1.8 miles ENE and 3.75 miles NNE, respectively, of the island. A shoal, with a depth of 11.5m, lies about 0.25 mile SE of the S extremity of the island.

A shoal, about 4 miles long and with depths of from 8.5 to 14.6m, lies about 2.5 miles NNW to 4.5 miles N of the N extremity of Ambil Island.

Detached shoals, with depths of 12.8 to 18.3m, extend from 1 mile NNE to 2.25 miles ENE of the N extremity of Ambil Island.

Ambil Shoal (13° 50'N., 120° 15'E.), with a least depth of 6.4m, coral, lies 1 miles N of the W extremity of Ambil Island.

Detached shoals, with depths of 6.7m, lie about 0.5 mile WNW and N, respectively, of the W extremity of the island.

An isolated patch, with a depth of 7.3m, lies 0.85 mile WNW of the W extremity of Ambil Island.

Caution.—Vessels drawing more than 5.5m should not attempt to pass between Ambil Shoal and the NW coast of Ambil Island.

2.8 Golo Pass (13° 41'N., 120° 18'E.), the channel between the SE extremity of Lubang Island and Salangan Point, the NW extremity of Golo Island, is 0.3 mile wide. A reef, with some rocks awash, lies in mid-channel and divides the pass into two separate channels.

These channels are only about 183m wide and their use is not recommended because of the strong currents and tide rips in their vicinity.

Golo Island (13° 39'N., 120° 23'E.) is 292m high and is separated from the SE extremity of Lubang Island by Golo Pass, described earlier. The N and S sides of the island are fringed by a narrow reef and depths of less than 18m extend as far as 0.5 mile offshore.

The E end of the island is fronted by reefs and shoals as far as 0.5 mile. A shoal, with depths of less than 18m, extends 0.75 mile S from Tanawan Point, the SE extremity of the island.

Tanawant Point Light, a concrete tower, 11m high, stands on the point.

Talaotao village is situated 1 mile N of Tanawan Point.

Verde Island Passage—North Side (Luzon)

2.9 Balayan Bay (13° 50'N., 120° 48'E.) is entered between Cape Santiago and Bagalangit Point, about 13 miles ESE. The bay indents the SW coast of Luzon about 11 miles in a N direction. Balayan Bay, which is very deep with a mud and sand bottom, is clear of dangers.

The shores are so steep-to that a vessel must approach very close to get within a depth of 22m.

The flood current sets N and the ebb S in Balayan Bay.

Caution.—A dangerous wreck was reported (2000) to lie 6.6 miles SSW of Cape Santiago Light.

Pagapas Bay (13° 50'N., 120° 40'E.) is entered between the NE face of Cape Santiago and San Pedrino Point, about 3.5 miles NE. The bay indents the SW side of Balayan Bay to a distance of about 3.5 miles in a NW direction. The Santiago River empties into the head of the bay.

The bay is very deep and its shores are fringed by a narrow reef. There are two small openings in the fringing reef at the head of the bay, each about 0.1 mile wide, where small vessels with local knowledge can obtain sheltered anchorage.

Anchorage can be taken by vessels with local knowledge, in a depth of about 27m, SE of the reef off the mouth of the Santiago River. This anchorage is more or less restricted and becomes rough in NE winds.

San Pedrino Point (13° 51'N., 120° 43'E.), the N extremity of Pagapas Bay, is 224m high and is densely wooded. It is fringed by a reef which extends 91m from the shore.

2.10 Balayan (13° 56'N., 120° 44'E.), a small town at the mouth of a small river, stands on the N shore of Balayan Bay about 5 miles N of the E extremity of San Pedrino Point.

The diurnal range of the tide at Balayan is about 1.2m.

A coral reef extends about 0.25 mile offshore in front of the town, on the outer edge of which are several shoal spots that bare at low tide.

Carabao Rock, with a depth of 0.6m, and Balaong Rock, with a depth of 2.7m, lie respectively, 0.7 mile ESE and 0.6 mile SE of the prominent yellow church tower in the town. The 20m curve fronts the town at a distance of about 0.4 mile.

A light is shown in a position about 0.6 mile E of the church tower. The light has been reported obscured from seaward by trees and houses.

Vessels with local knowledge can take anchorage in a position about 0.3 mile offshore, with the light structure bearing 329° and the dome of the church bearing 295°, in depths of from 15 to 18m.

Smaller vessels can take anchorage close to the reef in a position with the light structure bearing 329°, distant about 0.35 mile, in a depth of 9 to 13m.

A harbor was under construction about 3 miles E of Balayan. When completed, this harbor will provide berthing facilities for vessels up to 50,000 dwt, supplying fuel to the nearby coal-fired power station.

Lemery (13° 53'N., 120° 55'E.) and Taal are towns located on the W and E banks, respectively, of the Pansipit River, which empties on the E shore of Balayan Bay about 10 miles N of Bagalangit Point. The church at Taal, standing on a hill behind the town, and the church at Lemery, with twin metal-domed towers, are prominent.

A light is shown from the beach at Lemery, in a position about 0.2 mile N of the N side of the river mouth.

The light is partly obscured by houses and is difficult to distinguish from seaward.

There are no dangers outside the 20m curve, which fronts the mouth of the river and Lemery at a distance of about 0.3 mile. The Pansipit River has a depth of 2.1m over its bar at HW.

Vessels can take anchorage about 0.4 mile W of the light, in 18.3 to 29m. Smaller vessels can anchor closer in, according to their draft, anywhere off the town of Lemery.

Bagalangit Point (13° 43'N., 120° 52'E.), the W extremity of Calumpan Peninsula, is a rocky bluff, 135m high. The point is fringed by a narrow reef, which extends around the SW part of the peninsula nearly to Cazador Point, the S extremity of Calumpan Peninsula.

2.11 Maricaban Island (13° 39'N., 120° 53'E.), lying about 1.5 miles S of Cazador Point, is separated from it by Maricaban Strait. Mount Casapao, 447m high and covered

with tall grass, stands near the E end of the island. A prominent peak, 306m high, stands near the W end.

The coast of Maricaban Island is bordered by rocks, islets, and dangers.

Two rocky islets, Caban and Sombrero, lie off the NW end of the island.

Caban Island (13°41'N., 120°50'E.) is 87m high and covered with bushes. Layaglayag Shoal, with a depth of 3.5m, lies about 0.25 mile N of Caban Island.

Sombrero Islet (13°42'N., 120°50'E.), 43m high, lies about 0.75 mile NW of Caban Island. This oval shaped island is covered with low bushes and is very prominent.

It is surrounded by a reef, on which lies some above and below-water rocks.

Sepoc Point (13°41'N., 120°50'E.), the NW extremity of the island, is a steep, rocky headland, 36m high. The point appears as an island from a distance, but it is connected with the main part of the island by a narrow rocky isthmus about 1.5m high.

A rock, with a least depth of 1.5m, lies about 1 mile SW of Sepoc Point. A channel, about 0.75 mile wide and with a depth of 11.9m in the fairway, lies between this shoal and the W extremity of Maricaban Island.

2.12 Port Maricaban (13°41'N., 120°50'E.) is formed by the narrow strait between Maricaban Island and Caban Island.

The port can be entered either from the N or from the E, but the passage from the N is preferable. The harbor is about 0.5 mile wide in its N entrance between the shoals fronting the shore on either side, but narrows to a least width of about 45m in its S part.

Great depths are found in its wider part, and depths of over 37m are found in the fairway in its narrower part. It is sometimes used as a harbor of refuge for small vessels which anchor off the small village of Maricaban, and moor to the shore and to each other to prevent swinging.

The village stands on Maricaban Island in a position about 0.1 mile W of the S extremity of Caban Island.

Maricaban Strait (13°41'N., 120°53'E.) lies between the S side of Calumpan Peninsula and the N side of Maricaban Island. It is deep in the fairway and clear of dangers, but the tidal currents set strongly through it.

Caution.—A reef, with rocky heads awash, extends about 0.15 mile N from the middle of the N side of Maricaban Island, about 1.5 miles S of Cazador Point.

Culebra Islet (13°38'N., 120°57'E.) lies about 0.25 mile SE of the SE side of Maricaban Island. The islet is covered with trees, the tops of which are about 29m high.

The shore is rocky, with boulders and corals, except at the N extremity, which is coral sand. The channel between the islet and Maricaban Island is about 183m wide and has a depth of 11m in the fairway.

Malajibomanoc Islet (13°38'N., 120°58'E.), locally known as Pulong Balahibo, lies about 0.75 mile E of Culebra Islet. It is low and covered with trees, the tops of which are about 10.6m high.

Shoal water extends from the W side of this islet and from the E side of Culebra Islet, leaving a clear passage about 0.2 mile wide, with depths of from 20 to 35m.

The islet is marked by a light which is shown from a concrete tower. A wreck was reported about 1 mile E of the islet.

2.13 Batangas Bay (13°43'N., 121°00'E.), entered between Cazador Point and Matoco Point, about 9 miles ESE, is deep and clear of dangers. The bay indents the coast up to a distance of 7.5 miles.

Some rocks lie close off Cazador Point and a steep-to reef extends about 183m E from its E side. The coast between this point and the entrance to Mainaga Cove, about 6 miles NE, is steep, rocky, and wooded. It can safely be passed at a distance of 0.5 mile.

Mainaga Cove (13°46'N., 120°57'E.) provides anchorage for small craft seeking shelter from strong SW winds, in depths of 18 to 29m, mud.

Mainaga Cove Light is shown from a concrete beacon, 3m high, standing near the head of the cove.

Four anchor berths, in depths greater than 37m, are reported to have been established in Mainaga Cove. These are situated about 1 mile ENE, 1.25 miles E, 0.75 mile E, and 1 mile SSE of Mainaga Cove Light.

A concrete pier, with a depth of 6m at its head, lies at the head of the cove. A new wharf and fish processing plant are under construction.

The Batangas Bay Terminal pier lies 2.5 miles NE of Mainaga Cove. The head consists of three breast dolphins each 80m apart and two mooring dolphins.

Vessels up to 213m in length, with a draft of 11.9m, can be accepted. The pier extends 290m from the shore.

Pilotage is reported to be compulsory. Pilots board off Batangas.

2.14 Bauan (13°48'N., 121°00'E.), a small town at the head of Batangas Bay, is located about 3.5 miles ENE of Mainaga Cove. A conspicuous white church with a dome stands in the town. The town is connected by railroad with Manila.

It was reported that a copra loading platform was located off Bauan. Vessels of 12.2m draft and 40,000 dwt could berth at the mooring dolphins in front of the platform.

The platform is connected to the shore by a conveyor belt with a loading capacity of 500 tons per hour. Fresh water is available at the berth. Pilots are embarked off Batangas.

There is anchorage for small vessels within 0.2 mile of the N shore of Batangas Bay, between Cota village, S of Bauan, and Santa Clara Pier, Batangas.

2.15 Batangas (13°45'N., 121°03'E.) (World Port Index No. 58320), the principal town in the bay, is located on the W bank of the Calumpan River, about 0.75 mile inland. The port area is known as Santa Clara.

The port is the base port of the Port District of Batangas; therefore, pratique and customs clearance may be granted locally.

Quarantine officers will normally board with the pilot, or off the oil wharf. Customs Inspectors are provided through the Manila Customs Bureau.

There are no dangers in the immediate approach to Batangas or in the vicinity of the anchorages off the pier at Santa Clara. The 20m curve fronts the shore in the vicinity of the port area

at a distance of a little over 0.75 mile. The bar of the Columpan River is about 0.15 mile wide and shallow.

Winds—Weather.—The climate is marine tropical and is characterized by gentle winds. The prevailing winds are from the S and SE from June through September.

Tides—Currents.—The tidal range varies from 2.7 to 7.5m. The tidal currents set parallel to the shore, the flood current setting SE and the ebb current setting NW, but the rate is mostly weak.

Depths—Limitations.—The Caltex Cargo Wharf, 2 miles NW of Batangas, is 305m in length, with a T-head 84m long, and a reported depth of 14m alongside.

The Caltex Oil Wharf, situated 0.4 mile WNW of the cargo wharf, lies in a 126° to 306° direction. The wharf extends 305m S into the bay and ends in a "T" with its S face 83m long. The Main S berth has 12.1m alongside and a mooring buoy 79m from each end.

Night berthing is possible. It is reported that tankers up to 300,000 dwt, 230m in length, can be accommodated.

A jetty for coastal vessels lies 0.2 mile SE of the Caltex Cargo Wharf. The jetty extends 130m SSW from the shore.

The root of the Santa Clara Pier, a three-fingered pier extending 0.15 mile from the shore, lies about 1.25 miles SW of the coastal vessel jetty.

Pier 1 is 127m long and 15m wide, with depths from 5 to 15m. Pier 2 is 105m long and 15m wide, with depths from 5 to 9.5m. Pier 3 is 84m long and 15m wide, with depths ranging from 4 to 7m.

The piers are protected by timber-pile fendering. Depths shoal rapidly along the sides of the piers.

The Shell Refinery Wharf, 2.5 miles SSE of the Santa Clara Pier, consists of 5 jetties for the berthing of large tankers. It extends seaward for a distance of 0.2 mile.

The depth alongside No. 1 Jetty is 9.3m and No. 2 Jetty is reported to be14m. Tankers up to 31,000 dwt and 9.3m draft can be accommodated at Jetty No. 1, and vessels of up to 120,000 dwt with a 14m draft are accepted at Jetty No. 2.

The LPG Terminal is at No. 2 Jetty. Jetty No. 3 can accommodate vessels with a maximum dwt of 20,000, depth 9.3m and maximum loa 165m. Jetty No. 4 can accommodate vessels with a maximum dwt of 320,000, depth 23m and maximum loa 348m.

The Pacific Flour Mill Pier lie close S of Shell Refinery Piers. There are two piers extending about 250m SW from the shore, with a berthing face of 160m at the S pier and of 93m at the N pier. Vessels up to 30,000 dwt, with a maximum beam of 30m and a maximum draft of 10.9m, can be accommodated.

Purefoods Flour Milling Corporation has constructed a 40m long pierhead at the seaward end of a causeway, two breasting dolphins, and two mooring dolphins, with an overall length of 120m. Vessels up to 40,000 grt, with a maximum draft of 11.5m, can be accommodated.

Aspect.—The dome of the Batangas Church is very prominent, as are the Shell Oil and Caltex Oil refineries.

A prominent aluminum-painted water tank stands 2.25 miles NNW of Batangas. A radio mast stands 1 mile ESE of Santa Clara Pier.

The buildings at Caltex Refinery are prominent and include a chimney 95m high, and a conspicuous flare, 15m high, about 0.45 mile W of the chimney.

Pilotage.—Pilots are available at Batangas and pilotage is compulsory for all vessels engaged in foreign trade.

Masters should give at least 48 hours advance notice to their local agents to permit the dispatch of a pilot from Manila, if necessary, in time to meet the vessel.

Various craft are used to bring the pilot alongside of a position about 1.25 miles WSW of the Shell Oil wharf.

The use of a tug for berthing and unberthing is required, although a tug will normally be available at Batangas.

Masters should advise their agents of their tug requirements by prior notice, as it may be necessary to dispatch a tug from Manila.

Vessels proceeding to the oil wharf at the Caltex Refinery should radio "Caltex Manila" their ETA as early as possible, but not less than 96 hours before arrival. The ETA should be amended subsequently if it varies more than two hours from the original estimate.

Anchorage.—Four anchorage areas, lettered A through D and best seen on the chart, are located W through SW from the pier. During the height of the Southwest Monsoon, vessels can anchor off the N side of Maricaban Island along Maricaban Strait.

Small vessels can anchor within 0.2 mile of the shore between Bauan and Batangas, in depths of from 22 to 26m, good holding ground.

Directions.—Vessels coming from the W may pass either N or S of Maricaban Island. Vessels, using the latter route, which is recommended, should pass about 2 miles S of that island and round Malajibomanoc Island at a distance of 1 mile. A direct approach can then be made to the pier.

Vessels approaching from the E can use either N Pass or South Pass of Verde Island Passage. After having passed Verde Island they should steer in mid-channel between Malajibomanoc Island and Matoc Point and then proceed directly to the pier.

Caution.—A restricted area, in which anchoring and fishing are prohibited, lies 0.75 mile off the Shell Refinery Wharves. A prohibited area lies 0.3 mile off the wharves.

Vessels must maintain a good lookout for small craft and fish traps when navigating the bay at night.

2.16 Matoco Point (13° 38'N., 121° 02'E.) is high, wooded, and precipitous. From Naboled Point, 1.75 miles NNE to Matoco Point, the coast is fringed with rocks, and a narrow, steep-to reef. The 9.1m curve lies close seaward of the reef, and there are depths of over 183m less than 0.5 mile off Matoco Point. The point is marked by a light.

The coast between Matoco Point and Malabrigo Point, about 13.5 miles E, is, for the greater part, high, rugged, and steep-to.

Arenas Point (13° 37'N., 121° 05'E.), about 2.5 miles ESE of Matoco Point, consists of sand and stones, by which it may be identified. The point is low and clear of dangers, and is marked by a light.

Rosario Point (13° 38'N., 121° 12'E.), about 7 miles E of Arenas Point, can be identified by the Rosario River, which flows out close NW of the point. A bar, with a depth of 0.9m, fronts the mouth of the river.

The town of Lobo is located about 1 mile NE of Rosario Point. A prominent white warehouse stands about 0.5 mile NNW of the point. There is a stone jetty near the warehouse

Malabrigo Point Light

which had a depth of 1.8m at its head. It is exposed to SW weather and at such times landing cannot be made.

Vessels with local knowledge can take anchorage about 0.15 mile offshore, with Malabrigo Point Light showing over Rosario Point, bearing 118°, and the prominent white warehouse bearing 036°, in a depth of 22m. Vessels should approach this anchorage cautiously as the water shoals rapidly.

Vessels with local knowledge can take anchorage during N winds anywhere between Matoco Point and Malabrigo Point, about 13.5 miles E. The shore is steep-to, and at less than 0.2 mile offshore the depths are from 15 to 24m, coarse sand and gravel bottom.

2.17 Malabrigo Point (13° 36'N., 121° 16'E.), marked by a light, is the SW extremity of the broad headland formed by the spurs of Mount Lobo, about 3.5 miles NE. Punas Point is the central point, and Malagundi Point, the E point of the headland.

The coast of the headland is of moderate height and well wooded. It is rocky between Malabrigo Point and Punas Point, and bordered by a sandy beach with rocks from there to Malagundi Point.

Locoloco Point (13° 39'N., 121° 25'E.) is about 6.75 miles NE of Malagundi Point. The coast is high and slightly indented in its E part by Sigayan Bay.

Vessels with local knowledge can take anchorage between Malagundi Point and Sigayan Bay, close offshore, as the coast is very steep-to. The bottom is generally coarse sand and gravel.

Sigayan Bay (13° 40'N., 121° 24'E.) lies close W of Locoloco Point. The NE shore of the bay is fringed by a narrow reef, which is covered at HW. Anchorage can be taken in the W part of the bay, fairly close to the shore.

Verde Island Passage—South Side (Mindoro)

2.18 Calavite Passage (13° 27'N., 120° 24'E.), which separates the NW end of Mindoro from the Lubang Islands, is deep and clear of dangers in the fairway. It should be understood that vessels using the passage must give the NW coast of Mindoro a berth of at least 2 miles.

The flood current sets NE and the ebb SW through this passage.

Cape Calavite (13° 27'N., 120° 18'E.), a low headland on the NW extremity of Mindoro Island, is reported to give a good radar return up to 19 miles and is marked by a light. This part of the coast is marked by some offshore rocks.

Itbu Point (13° 29'N., 120° 19'E.), located 2 miles NNE of Cape Calavite is high, rugged, and steep-to. Vessels with local knowledge can take anchorage during the Northeast Monsoon in a small bay S of Itbu Point, in a depth of 10m, sand, about 0.15 mile from the beach at the head of the bay.

From the offing, **Mount Calavite** (13° 29'N., 120° 24'E.), a large promontory occupying the NW extremity of Mindoro, rises to 1,521m. The summit of the mountain appears dome-

shaped from the W, but from N or S it appears as a long ridge, fairly level, and highest at its W end.

Del Monte Point (13˚32'N., 120˚25'E.) is sandy and steep-to. A conspicuous stranded wreck lies close to the shore in a position about 1 mile W of Del Monte Point.

Bagalayag Point (13˚31'N., 120˚34'E.), about 9 miles E of Del Monte Point, is a rocky bluff about 10.6m high.

The coast between this point and Bogio Point, about 9.25 miles E, is backed by densely wooded mountains about 610 to 1,067m high.

The shore between the two points is steep-to, especially between Baeto Point, located 5.5 miles E of Bagalayag Point, and Bogio Point, where it is almost precipitous.

2.19 Bogio Point (13˚29'N., 120˚43'E.) is at the end of the E slope of the 1,017m mountain, located about 2.5 miles SW of the point. The slope drops to a height of about 609m and is covered by a greenish-yellow grass.

The coast between Bogio Point and a point about 3.5 miles E is bordered by a wide sandy beach. The Cervantes River and the Matabang River, two small rivers, flow out through this sandy beach. The low land extends a considerable distance inland in the vicinity of these rivers.

A shoal, with a depth of 5.5m over its outer edge, extends about 0.125 mile N from the mouths of the Cervantes River and the Matabang River.

Vessels can take anchorage in a small bight off the mouths of the Cervantes River and the Matabang River, fairly close to the shore. This anchorage is an open roadstead and is known as Ilog Anchorage.

Eastward of the mouths of the two small rivers, as far as the mouth of the Camerong River, about 7.5 miles E of Bogio Point, there are numerous hills, partially wooded, that rise abruptly from the rocky coast to heights of 91 to 122m. Sandy beaches lie between the hills.

The coast is bold and almost precipitous between the mouth of the Camerong River and Talipanan Point, about 2.75 miles ENE.

Mount Talipanan, located about 0.75 mile SSW of **Talipanan Point** (13˚30'N., 120˚53'E.), is very conspicuous with a sharp, prominent peak.

Minolo Point (13˚31'N., 120˚54'E.), about 1.5 miles ENE of Talipanan Point, is covered with trees and on its E side is a beach. The shore is steep, and depths of 8 to 9m are found about 0.3 mile offshore in the vicinity of Minolo Point.

A cove is located about 0.5 mile E of Minolo Point and can be used as an anchorage by small vessels. The reefs fronting the shores of the cove reduce the anchorage area to a diameter of about 0.1 mile. A depth of 10.9m can be carried through the fairway of the entrance channel, and inside there are depths of from 15 to 22m.

2.20 Balateros Cove (13˚31'N., 120˚56'E.), located about 1.5 miles E of Minolo Point, is a small bight lying between two coral reefs. It is a haven where small vessels can take anchorage, in 29m, protected from winds of both monsoons.

Port Galera (13˚31'N., 120˚57'E.), which is practically landlocked, lies between Medio Island on the N, Paniquian Island on the W, and the W side of the projecting promontory on the S and E. The available space is greatly restricted by the shoals extending from the projecting points along its shore. There are two passages into the port, Northwest Channel and North Channel, on the SW and E sides, respectively, of Medio Island.

Northwest Channel is the recommended passage into Port Galera. The N entrance is only about 137m wide between the reefs and shoals on either side, but it widens inside to 0.15 mile.

A least depth of 9.6m is found in mid-channel along the entrance range. A rock, 18.9m high, lies on the edge of the reef fringing the SW side of Medio Island, at the outer entrance to the channel.

The flood current which enters Northwest Channel flows out through North Channel and then sets E, the reverse taking place with the ebb current. There is a strong race off North Point, the N extremity of Medio Island.

Medio Island (13˚32'N., 120˚57'E.) is 80m high and wooded. The NE side of the island is fringed by a reef which extends about 0.125 mile NE, with the 5.5m curve lying about 91m farther in the same direction.

A shoal, with a least depth of 2.7m, lies about 183m W of North Point, the bare and rocky N extremity of the island. A shoal, as defined by the 5.5m curve, extends as far as 183m from the NW side of the island.

2.21 Paniquian Island (13˚31'N., 120˚57'E.) is 61m high and wooded. The NW shore of the island is high and rugged. The S end of the island terminates in a narrow, sandy neck of land which connects the island with the N coast of Mindoro.

The island is fringed by a reef, except for a short distance on its N and W sides. A shoal, with depths of less than 6m, extends 137m offshore in places. Two sunken rocks lie near the outer end of a shoal extending about 0.3 mile N from a point located about 0.4 mile S of the W extremity of the island.

Telegraph Point, the NW extremity of the promontory extending NE from the N side of Mindoro, can be identified by a prominent white patch having the appearance of a sail on the side of the point.

The N side of the promontory between Telegraph Point and Escarceo Point, about 2 miles E, has a uniform appearance and is slightly indented.

A shoal, as defined by the 5.5m curve, extends about 0.125 mile N from the N side of the promontory. A detached shoal, with a least depth of 2.7m, lies about 0.3 mile NNE of Telegraph Point.

A light situated on the bluff of the promontory about 0.25 mile SE of the S extremity of Medio Island. A similar but unlighted beacon situated close SE of the light beacon. These beacons in range, bearing 125˚, lead through Northwest Channel, but caution is necessary as the range is not very sensitive.

2.22 Northwest Channel lies between the E side of Medio Island and the W face of the projecting promontory. The channel is about 137m wide between the 5.5m curve on either side. A least depth of 9.4m lies in the fairway. The E side of Medio Island is low and bordered by a narrow sand bank. A shoal, with a depth of 1.4m, lies in the middle of the S entrance to North Channel.

The channel on either side of this shoal has a width of about 91m. This channel is not recommended for large vessels.

Depths—Limitations.—A shoal, with depths of from 0.3 to 1.2m, extends almost 0.25 mile N from a point on the S shore located about 0.3 mile N of **Puerto Galera Light** (13˚30'N., 120˚57'E.).

Another shoal, with a least depth of 0.3m near its outer edge, extends about the same distance NW from the above point. A shoal, with a depth of 10m, lies about 0.3 mile N of this point. Another shoal, with a least depth of 6.4m, lies about 0.4 mile N of the same point.

A reef extends about 0.15 mile W from a position close W of the entrance beacons on the E shore of the harbor.

The 10m curve fronts the remainder of the harbor as far as 0.15 mile, and depths of less than 9.1m are found in the coves to the E of the entrance beacons.

Anchorage.—The principal anchorage lies in the N part of the port, in a position E of Paniquian Island, in depths from 18 to 22m. Exercise caution as the swinging room is considerably reduced by shoals extending from all sides.

Smaller vessels can take anchorage in a small bight in the S part of the port, in a position N of the town of **Puerto Galera** (13˚30'N., 120˚57'E.), in a depth of 10.9m. Small vessels can also anchor in a space about 0.2 mile wide, in a position E of the S extremity of Paniquian Island, in a depth of 16m.

There is also anchorage for small vessels in Little Balateros Cove, situated SW of the W extremity of Paniquain Island. The cove is formed between two coral reefs and two high wooded points, and is protected from winds of both monsoons.

Directions.—Vessels entering the port by Northwest Channel should bring the range beacons to bear 125˚, until abreast of the NE point of Paniquian Island, when the course should be gradually altered to the S for the anchorage in the middle of the N part of the harbor.

Small vessels with a need to use North Channel should round North Point at a distance of about 0.5 mile and then alter the course to the S and pass in mid-channel through North Channel.

Caution is advised in avoiding the shoal in the middle of the S entrance to the channel.

2.23 Escarceo Point (13˚31'N., 120˚59'E.), the NE extremity of the promontory extending NE from the N side of Mindoro, is rocky and covered with trees. The tidal currents set strongly off the point and tide rips are found in the vicinity. A light marks the E side of the point.

It is shown from a concrete house, 14m high.

Boaya Point (13˚30'N., 120˚58'E.), lying about 2 miles SW of Escarceo Point, is bold on its W side and is clear of dangers, with the 9.1m curve fronting it at about 137m.

Varadero Bay (13˚29'N., 120˚58'E.), entered between Boaya Point and Varadero Point, about 0.5 mile SW, affords sheltered anchorage during both monsoons, especially during the season of the Southwest Monsoon when the heavy squalls pass to the N. It is reported to afford better shelter than Port Galera, especially during bad weather.

A shoal, with a least depth of 2.7m, extends about 0.25 mile S from the N shore. Shoals, with depths of less than 9m, extend up to 0.2 mile E from the W shore of the bay.

Varadero Point is fringed by rocks, some of which dry, extending about 0.125 mile N of the point. The 9.1m curve fronts the point as far as 0.15 mile offshore.

Puerto Galera, a small village with a prominent church, stands on a narrow neck of land separating Port Galera from Varadero Bay. A light is shown from a hill at Puerto Galera.

Anchorage.—Vessels can take anchorage in the middle of the bay with Puerto Galera Light bearing 310˚, distant 0.4 mile, in a depth of 18.3m. Navigators are cautioned that during fresh NE weather the wind sometimes veers well E, causing a considerable swell at this anchorage.

Small vessels can take sheltered anchorage in the bight close W of Boaya Point, in a position about 183m offshore, in depths of 20m. Care must be taken to avoid the previously mentioned shoal in the N part of the bay.

2.24 Subaang Bay (13˚26'N., 121˚02'E.) is an open bight on the S side of South Pass. The shore is low and wooded with several small rivers flowing into the bay.

A shoal, with a depth of 6.4m over its outer end, extends about 0.25 mile NE, from a position about 4.5 miles SE of Varadero Point.

In windy weather, the bay becomes a dark red color due to the stirring up of the silt from the rivers along the coast.

A shoal, with a least depth of 3.5m near its outer edge, extends about 0.75 mile NE from the SW shore of the bay.

San Teodoro (13˚26'N., 121˚01'E.) is a small town located in Subaang Bay, about 4.5 miles SE of Varadero Point. The town can be identified by San Teodoro Hill, 198m high, close SW of the town and a hill, 286m high, 1.5 miles W of the town. Both hills are prominent.

Logs are shipped from this port during good weather, particularly between March to November.

Vessels can take anchorage, about 0.5 to 1 mile offshore, midway between the town and the Subaang River, located about 0.75 mile SE of San Teodoro, in depths of 18 to 37m. This anchorage is open and is not safe during the period from November to February, when the Northeast Monsoon is in full force.

Balete Point (13˚25'N., 121˚10'E.) is 36m high and well wooded. A shoal of coral and sand, bare at LW, lies with its N edge about 0.5 mile W of Balete Point.

Calapan Bay (13˚25'N., 121˚11'E.) is entered between Balete Point and Calapan Point, about 2.5 miles ENE.

The 20m curve fronts the shores of the bay at a distance of about 0.75 mile. Within this curve the depths for the most part are shoal and suitable only for small craft.

2.25 Calapan (13˚25'N., 121˚11'E.) (World Port Index No. 58540) stands close to the shore at the head of Calapan Bay. A prominent church is located in Calapan.

Calapan Bay, which is exposed to all winds from N through W, is not considered a safe port during the Northeast Monsoon. The recommended anchorage is in 13 to 18m, rocky bottom, with the church bearing 177˚, and the N extremity of Calapan Point, bearing 063˚. The holding ground is poor

Navigators are cautioned to use extreme care in approaching this anchorage, as the edge of the shore reef is steep-to and the bottom very irregular.

Vessels must be prepared to get underway immediately when strong winds from N through W occur, as the anchorage is unsafe at this time. Vessels with local knowledge can anchor close off the W face of Calapan Point during the Northeast

Monsoon, but the coast is steep-to and great depths are found close offshore.

Government Wharf, on the W side of Calapan Point, is T-headed and extends about 45m from the shore. The T-head is 33m long, with 3 to 5.5m alongside. The N end is broadened and provides a berth 30m long with a controlling depth of 3.6m alongside.

It is advisable to approach the pier from the N and berth port side-to. Improvements were planned to the port.

Tidal currents along the face of the pier run N on the ebb and S on the flood.

2.26 Calapan Point (13˚26'N., 121˚12'E.) is 88m high and wooded. The W and N sides of the point are clear of dangers, but the E side is fringed by a narrow, steep-to reef. Some white storage tanks and three wooden piers, one in ruins, stand on the E side of the point.

Baco Islands (13˚29'N., 121˚10'E.) are three islands which extend about 2 miles in a NE direction from a position about 2.75 miles N of Balete Point. The southwesternmost and largest island of the group is 90m high; the middle island is 70m high; and Baco Chico Island, the northeasternmost of the group, is 39m high.

A shoal, with depths of less than 3m, extends about 0.1 mile NE from the E extremity of the southwesternmost island. A reef, which dries, extends about 0.25 mile E from E side of the middle island. A shoal, as defined by about the 20m curve, extends about 0.3 mile SW from the SW side of Baco Chico Island.

The unmarked channels between the islands have sufficient depths in the fairway, but the strong tidal currents that prevail make it dangerous for a vessel to attempt transit.

A steep-to 2.4 and a 25m shoal lie 0.8 mile W and 0.65 mile WSW, respectively, of the S extremity of the SW island.

Silonay Island (13˚27'N., 121˚13'E.), 106m high, narrow and wooded, extends a little over 0.5 mile NNE from a position about 1 mile E of Calapan Point.

The NE side of the island is fringed by rocks which extend about 91m SE. A shoal, with depths of less than 6m, extends about 0.125 mile S from the SW end of the island.

2.27 Anaganahao Island (13˚26'N., 121˚13'E.), 30m high and wooded, lies about 0.5 mile S of Silonay Island. The island is fringed by rocks which extend 0.15 mile N from its N side, and 0.25 mile SW from its S side.

The channel between Anaganahao and Silonay Islands is about 0.25 mile wide between about the 10m curves on either side, and has a least depth of 12.5m in the fairway.

The tidal currents set strongly through this channel.

The channel between Anaganahao Island and Mindoro is about 0.2 mile wide between about the 10m curves on either side, and has a least depth of 10.3m in the fairway.

A depth of 11.6m lies about 0.4 mile SE of the N extremity of Calapan Point. Another patch, swept to a depth of 10.5m, lies 0.4 mile S of Anaganahao Island.

Verde Island (13˚33'N., 121˚04'E.), located about 4 miles NE of Escarceo Point, is steep-to and wooded, with a few sandy beaches.

There are two prominent peaks on the island. The higher and farthest N has an elevation of 417m.

Rocks, which dry, extend about 183m SE from the extremity of the island. Two reefs, with depths of 92m, lie 1 mile and 1.5 miles NW of the NW end of Verde Island.

The NE extremity of the island is marked by a light.

Vessels, with local knowledge, can take anchorage during S winds, in a bay on the N side of the island, in depths of 13 to 18m, close offshore.

Strong tide rips have been reported on the SE side of the island.

The current on the N part of the Verde Island Passage, which flows round Balayan and Batangas Bays, reunites with the principal current near Verde Island, producing violent tide rips and eddies in that part of the channel between **Malabrigo Point** (13˚36'N., 121˚15'E.) and Escarceo Point.

2.28 North Pass (13˚36'N., 121˚04'E.) lies between the N side of Verde Island and the S coast of Luzon between Matoco Point and Punus Point, about 15 miles E. North Pass has a least width of 2.75 miles and is deep and clear of dangers in the fairway.

Vessels bound for S Luzon ports, or for San Bernardino Strait, sometimes use the pass in preference to the recommended South Pass.

A traffic separation scheme has been established in Verde Island Passage. A traffic lane for E bound traffic passes S of Verde Island and the lane for W bound traffic passes N of Verde Island.

In the vicinity of Verde Island the width of each traffic lane is reduced to about 2 miles.

The separation scheme is not IMO-approved.

South Pass (13˚30'N., 121˚04'E.) lies between the steep-to S side of Verde Island and the N coast of Mindoro between Escarceo Point and Calapan Point.

South Pass has a least width of almost 4 miles and is deep and clear of dangers in the fairway. In the E approach of South Pass, the principal dangers are the three small wooded Baco Islands mentioned earlier.

Most of the inter-island maritime traffic uses the South Pass in transiting Verde Island Passage.

Mindoro—Northeast Coast

2.29 Naujan (13˚19'N., 121˚18'E.), a town located about 9 miles SE of Calapan Point, is on the W bank of the Baluagan River, about 1 mile inland. Only small boats can cross the bar at the river mouth.

The village of Estrella, the port for Naujan, is on the beach about 0.5 mile NE of the town. A large warehouse located on the beach is conspicuous from seaward.

Vessels with local knowledge can take anchorage, exposed to NE winds, about 0.5 mile NE of Estrella, in depths of 27m, mud.

Between Calapan Point and the mouth of the Lumangbayan River, about 13 miles SE, the coast is low, heavily wooded, intersected by several small streams, and fringed by a gray sandy beach.

This sector of the coast is clear of dangers, with the 20m curve lying about 0.75 mile offshore.

Anchorage can be taken almost anywhere close off this section of the coast, in depths of 27m, mud. The depths

decrease gradually toward the shore, except at the bar, which extends about 0.5 mile off the mouths of the Kawayan River and the Buluagan River, where the depth decreases from 18.3 to 1.8m in a distance of about 91m.

The **Lumangbayan River** (13° 17'N., 121° 21'E.), one of the largest rivers in N Mindoro, discharges about 4 miles SE of the town of Estrella. It forms the dividing line between the low land and the mountainous area to the SE. The small town of Lumangbayan is located on the coast N of the mouth of the river.

Vessels can take anchorage off the mouth of the Lumangbayan River, in a depth of 37m. The anchorage is marked by a log float with a white flag.

Mount Naujan (13° 15'N., 121° 21'E.), a prominent peak, is 420m high, and densely wooded. It lies about 1.5 miles S of the mouth of the Lumangbayan River, and about 1 mile inland. The summit lies at the W extremity of a flat ridge which slopes toward the N.

Another prominent peak, Dome Hill, which is shaped like a rounded dome and rising to 257m and densely wooded, is located about 2 miles NW of Mount Naujan.

Tujud Island (13° 15'N., 121° 25'E.), 45m high and wooded, lies about 0.25 mile offshore and 1 mile NW of Balingawan Point. Its coasts are formed by brown cliffs, except on its SW side. It is bold and steep-to on its seaward side.

A drying reef connects the SW side of the island to the coast of Mindoro. A detached rock, 4.5m high and surrounded by rocks awash, lies about 91m SW of the island.

2.30 Balingawan Point (13° 14'N., 121° 26'E.) offers a contrast to the other points in the vicinity, which rise gradually and continuously from the cliffs toward the interior. This point slopes down, forming a saddle which extends across in an E and W direction at a very slight elevation.

Anahauan Point (13° 11'N., 121° 27'E.), densely wooded and bordered by low cliffs and rocks, lies about 2.25 miles S of Balingawan Point. The coast between Tujud Island and Anahauan Point is very rugged and indented. The mountains close to the coast in this vicinity are densely wooded and attain an elevation of over 425m.

Pola Bay (13° 10'N., 121° 28'E.), entered between Anahauan Point and Dayup Point, about 4.25 miles SE, indents the coast to a distance of about 2.5 miles in a SW direction. The bay is reported to be deep and clear of dangers and the shores are generally steep-to.

Dayap Point (13° 09'N., 121° 30'E.), which is formed by the N extremity of a spur, is bordered by cliffs and large boulders. The spur extends N from a sharp and wooded peak, 426m high, located about 1.25 miles inland.

Tiguihan Cove is located about 2 miles SSW of Anahauan Point. The shores of the cove are fringed with reefs, leaving a small area near the entrance where small craft with local knowledge can take sheltered anchorage.

Tuntung Point, the rocky projection forming the S side of the cove, is located at the head of the bay in a position about 4 miles W of Dayap Point.

A prominent rock, 5.5m high, is located about137m SE of Tuntung Point. About 23m E of the above rock is a smaller rock about 0.9m high.

The Pola River and the Pula River flow into the head of the bay SE of Tuntung Point, and between their mouths is a gray sandy beach. The bar of the Pola River has a least depth of 0.6m, and the bar of the Pula River dries. A valley covered with light timber and mangroves lies between the two rivers and extends several miles S.

Pola, a small village, stands on the W side of the entrance to the Pola River. A large storehouse with a metal roof is prominent.

Depths of from 37 to 55m are found in the middle part of Pola Bay. The 20m curve lies close to the shores of the bay, except at its head where it lies close to 0.75 mile offshore in places.

A reef, on which there are several rocks from 0.6 to 0.9m high, and others awash, extends about 137m E from Anahauan Point and is visible from N or S.

This reef, which mostly dries, extends about 0.5 mile S from the point, and as far as 0.25 mile offshore. Dayap Point is clear of dangers, with the 20m curve lying close offshore.

Anchorage.—Large vessels can anchor about 0.5 mile offshore, in 27m, mud, with the storehouse at Pola bearing 230°, and the prominent 5.5m rock bearing 282°.

Small vessels can anchor closer inshore, in 18.3m, mud, with the storehouse bearing 248°, and the prominent 5.5m rock bearing 302°. These anchorages are open to the E and NE and are untenable during the Northeast Monsoon (October to March).

2.31 Dumali Point (13° 07'N., 121° 33'E.), located about 3.25 miles SE of Dayap Point, is bold, steep-to, and 73m high.

The coast between Dayap Point and Dumali Point is fringed by a narrow, coral reef which partly dries. This portion of the coast is steep-to and may be safely approached up to a distance of 0.5 mile. Dumali Point is marked by a light.

Mount Dumali, 761m high, and densely wooded to its summit, is prominent. It lies 2.5 miles W of Dumali Point.

Magnetic disturbances are reported to exist offshore between Dumali and Calapan Points. Variations of 4° W have been observed between Dumali Point and Calapan Point.

Luzon—Bantigui Point to Bondoc Point

2.32 Bantigui Point (13° 41'N., 121° 28'E.), a wooded headland 108m high, is a prominent landmark when entering Tayabas Bay. It is steep-to on its S and E sides, but its N side is fringed by a coral reef which gradually widens as it approaches Coloconto Bay.

Mount Banahao (14° 04'N., 121° 28'E.) is located about 23 miles N of Bantigui Point and 12 miles from the head of Tayabas Bay. It is a prominent landmark, 2,177m high, and conspicuous when not obscured by clouds.

Tayabas Bay (13° 50'N., 121° 40'E.) is deep and clear of dangers in its middle part and in its approach from the SW. It is generally exposed to S winds and offers no protection during the typhoon season.

Numerous shoals and dangers front the shores of the bay and the W face of Bondoc Peninsula.

These dangers all lie within the 37m curve which fronts the W side of the bay as far as 2.25 miles, the head of the bay as far

as 7.5 miles, and the W face of Bondoc Peninsula as far as 3.5 miles.

Coloconto Bay (13°42'N., 121°27'E.) is entered between the N side of Bantigui Point and Subuquin Point, about 2.25 miles NW. The bay is small in area and is predominantly foul. Just within the bay there is a small wooded islet.

The coast between Subuquin Point and the mouth of the **Malaquing Ilog River** (Nayon River) (13°49'N., 121°27'E.), about 5.5 miles N, and then to the mouth of the Tayabas River, about 10 miles further NE, is low and wooded. The shore consists of sandy beaches which are intersected by small rivers. San Juan, a small village, is situated about 4 miles W of the mouth of the Malaquing Ilog River. The W part of Tayabas Bay contains a number of shoals which lie 0.5 to 1.75 miles offshore.

The shorebank, which is steep-to and which has a least depth of 2.1m at its outer edge, extends about 0.75 mile offshore and 3 miles N from Subuquin Point.

Anchorage.—Vessels with local knowledge can take anchorage about 0.5 mile outside the entrance to Coloconto Bay where some protection from SW winds is afforded.

Vessels with local knowledge can take anchorage between Coloconto Bay and the mouth of the Tayabas River, in a position about 1 mile offshore, in 22m, mud.

Caution.—Reefs, with depths of 2.7 and 0.9m lie, about 1 mile SSE and 2.75 miles NE, respectively, of the S entrance point of the Malaquing Ilog River. The reefs and dangers are not visible because of the muddy water in their vicinity.

2.33 **Castanas** (13°53'N., 121°33'E.), a loading port for copra, lies about 12 miles NNE of Bantigui Point. The port can be identified by two warehouses on the beach and by three wooden loading jetties.

No fresh water, stores, or repairs are available. The nearest postal and telegraph office is at the Bucal Railroad Station, about 2.75 miles NE of Castanas. The nearest hospital and medical facilities are located at Lucena.

The 20m curve fronts the port as far as 0.5 mile offshore. A reef, which is not visible in the muddy water, extends about 91m from the coast.

Anchorage.—Vessels can take anchorage about 0.6 mile offshore, with Mount Mayabobo, 8.25 miles NW of Castanas, bearing 315°, Sariaya, a conspicuous village 4.25 miles E of Mount Mayabobo, bearing 339.5°, and Bantiqui Point bearing 206.5°, in depths of 22 to 26m.

This anchorage is well protected during the Northeast Monsoon, but during the Southwest Monsoon it is advisable to anchor two or more ship lengths to seaward.

Caution.—Vessels should approach the port only during daylight hours and during periods of good visibility. Vessels are cautioned not to approach the coast closer than 0.5 mile as the water is muddy and the sunken dangers are not visible.

2.34 **Tayabas Point** (13°54'N., 121°37'E.) is low and lies on the E side of the entrance to the Tayabas River.

The Tayabas River, which is about 0.5 mile wide at its entrance, is shoal and only used by small craft with local knowledge.

Tayabas River Entrance Light (13°54'N., 121°36'E.) is shown from a concrete tower, 9m high, standing at Pisingi on the W side of the entrance to the river. However, it was reported recently extinguished. A shoal, with depths of 5 to 9m, lies from 1 to 1.75 miles SSW of Tayabas Point.

Lucena (13°56'N., 121°37'E.), a town of considerable importance, is located between two small rivers in a position about 2.5 miles N of the coast. These rivers unite at their mouths and form the Tayabas River. Lucena is connected to Manila by railroad and bus. It is also connected to the general telegraph system.

Anchorage.—Vessels can take anchorage in a position S of the mouth of the Tayabas River, in a depth of about 12.8m, mud and sand, with Tayabas Point bearing 061°.

Smaller vessels can anchor closer in on the same bearing. This anchorage is protected from NE winds by Tayabas Point, and by a reef on which there are several rocks above water, extending about 1 mile SE from the point.

2.35 Between Tayabas Point and Bocboc Point (Bokbok Point), about 5.5 miles ENE, an extensive reef, which dries in places, extends as far as 3.75 miles S.

Pagbilao Bay (13°56'N., 121°43'E.) is entered between Bocboc Point and the W coast of Pagbilao Grande Island, about 2 miles E. The available anchorage area within the bay is reduced by reefs and shoals to a space about 1 mile in extent.

Angas Point, located about 2.25 miles N of Bocboc Point, is about 7.6m high, bare, and prominent. Pagbilao Church, located about 1.25 miles NW of Angas Point, is prominent and may be seen for a considerable distance.

Patayan Island, about 27m high and prominent, lies about 0.75 mile SE of Angas Point.

Pagbilao Grande Island extends about 3.5 miles N and 4 miles NE from its S extremity, which is located about 4 miles SE of Bocboc Point. Its S extremity is steep-to at a distance of about 0.15 mile.

Mud flats, passable by boats at HW, separate the N side of the island from the S coast of Luzon. Mount Mitra, the 161m summit of the island, stands on the NE side of the island.

Pagbilao Chica Island is joined, at its NW end, to the middle part of the E side of Pagbilao Grande Island by a narrow ridge of sand. The island extends about 2 miles S from its NW extremity. Mount Lipata, located near the S end of the island, is 182m high, and prominent.

A narrow but deep channel, with a least width of about 0.4 mile, passes between the E edge of the reef extending 3.75 miles SSE from Bocboc Point and the W edge of the reef fringing Pagbilao Grande Island.

Depths of 17 to 26m are found in the entrance channel, and depths of 9 to 15m are found in the S part of the bay.

The N part of the navigable portion of the bay, S of Patayan Island, has depths of over 6m.

Anchorage.—Vessels can take anchorage with the summit of Patayan Island bearing 347°, and Bocboc Point bearing 230°, in depths of 8m, good holding ground.

Smaller vessels can anchor further W where there is more shelter during SW winds.

Vessels approaching Pagbilao Bay should steer for the S extremity of Pagbilao Grande Island and then give the SW side of that island a berth of about 0.25 mile. Angas Point bearing 335°, and open W of Patayan Island, leads through the entrance

channel to the recommended anchorage. Care must be taken to avoid the reefs on both sides of the channel.

Caution.—It has been reported (1994) that the reefs to the W of Pagbilao Grande Island are not visible except at LW and with the morning sun. No buoys or lights mark shoal water.

2.36 Capulaan Bay (13°53'N., 121°47'E.) is entered between the S extremity of Pagbilao Grande Island and Lipata Point, the SW extremity of Pagbilao Chica Island about 1.5 miles E. The narrow head of the bay is fringed by reefs to a distance of nearly 1 mile.

Vessels can take anchorage during the Northeast Monsoon, in 9 to 22m, in the middle part of Capulaan Bay. Vessels should make the approach by steering for the S extremity of Pagbilao Grande Island, and then pass in mid-channel between that extremity and Lipata Point to the desired anchorage.

Port Laguimanoc (13°53'N., 121°49'E.), lying E of the Pagbilao Islands, is reduced by reefs and islets on both sides and at its head to a channel about 0.5 mile wide and 2 miles long.

The SE side of Pagbilao Chica Island is fringed by reefs as far as 0.5 mile E. Shoals, with depths of 3.6 and 2.7m lie, respectively, about 1 mile SSE and 0.75 mile SSE of Nang Point, the E extremity of Pagbilao Chica Island.

Mangayao Island is a small wooded island lying on the E side of the entrance to Port Laguimanoc, in a position about 1.25 miles E of Nang Point. It is surrounded by drying mud flats which connect it to the coast of Luzon at LW. The N side of the island is fringed by mangroves and its S side consists of a sandy beach. Tubig Point, the SW extremity of the island, is a low bluff surrounded by rocks.

A reef, which partly dries, extends 1.25 miles S from the S side of the island. Some above and below-water rocks stand on this reef.

High Islet, the first islet on the E side of the entrance, is small and 19.8m high. The islet is steep-to on its W side and is located in a position about 0.75 mile E of Nang Point and 0.75 mile NW off Tubig Point.

A reef extends about 0.25 mile S from the S side of the islet.

Calaba Islet, 12.2m high, lies about 0.35 mile N of High Islet. It is connected to the coast E and to Laguimanoc Point to the N by foul ground. The 5.5m curve fronts the W side of the islet at a distance of about 0.125 mile.

Talaban Islet, 11.9m high, narrow, and wooded, lies inside the navigable portion of the harbor in a position about 1 mile NNW of Calaba Islet.

Laguimanoc Point, the W extremity of the land on the E side of the harbor, is composed of low bluffs, which are fringed by rocks.

The point, which is 41m high and wooded, is located about 1 mile E of Restinga Point, the N extremity of Pagbilao Chica Island.

Padre Burgos is a small town on Laguimanoc Point.

Anchorage.—Vessels can anchor in the middle of the outer part of the harbor, in depths of from 13 to 15m, in a position about 0.5 mile S of High Islet. Small vessels can anchor closer inshore, in depths of from 6 to 9m, between Nang Point and High Islet.

Directions.—Vessels entering the port should bring Calaba Islet in range with Laguimanoc Point, bearing 357°.

This range leads into the outer part of the harbor where anchorage can be taken as convenient. Smaller vessels wishing to anchor farther in should stay on the above range until Tubig Point is abeam to starboard, at which time the course should be altered to 338°, with the W extremity of Talaban Islet lying dead ahead. Anchorage can be taken as convenient, according to the draft.

2.37 The E side of Tayabas Bay, between the entrance to Port Laguimanoc and Tuquian Point, about 29 miles SE, is low with a flat sandy beach fringed with reefs of varying width, and interspersed with mangroves.

Dangerous reefs and detached shoals lie as far as 2.5 miles off this stretch of coast. Vessels with local knowledge can take anchorage nearly anywhere along this coast, but the principal places are Unisan, Pitogo, and Macelelon.

Vessels not intending to call at these small loading ports should keep at least 3 miles offshore. A prominent bare red bluff marks a point located about 2 miles E of Mangayao Island.

Malatandan Point (13°51'N., 121°58'E.), about 9 miles SE of the E entrance point of Port Laguimanoc, is 54m high, bold, rocky, and wooded. The land in the vicinity is low and level. The W side of the point is steep-to, but from the S side, a coral reef extends about 0.5 mile S.

A dangerous reef, which is partly awash, extends about 1 mile SW from its NE extremity, which is located about 0.75 mile SW of Malatandan Point.

Detached shoals, with a least depth of 4.5m, lie about 2.5 miles WSW of the same point.

Calaylayan Bay (13°50'N., 121°58'E.) is entered between Malatandan Point and an unnamed point 1.5 miles SE.

The head of the bay is shallow, and there is a wide sandy beach which dries.

2.38 Unisan (13°50'N., 121°58'E.) (World Port Index No. 58290), a small town, stands at the head of the bay. A small river flows out into the bay in the vicinity of the port, but the depths over its bar are very shoal.

A light is shown at Unisan.

Vessels with local knowledge can take anchorage during the Northeast Monsoon, in a depth of 7m, soft mud. To approach this anchorage, vessels should bring the town to bear 035° and steer for it, anchoring as above, when Malatandan Point bears 332°.

Silancapo Point (13°48'N., 121°59'E.), about 2.5 miles SSE of Malatandan Point, rises to a height of 90m at a distance of about 1 mile inland. The point is low and fringed with mangroves at its extremity.

Shoals, with least depths of 12.8 and 11.9m, lie, 3.5 miles WSW and 1.5 miles S, respectively, of Silancapo Point.

Mabio Point (13°47'N., 122°03'E.), about 4.75 miles ESE of Silancapo Point, is low and covered with mangroves. A small river discharges about midway between the two points, and near its mouth are some prominent black rocks about 2.4m high.

A reef, with a depth of 7.3m, lies about 1.75 miles SW of Mabio Point. A shoal, with a least depth of 4.1m, lies about 2 miles W of the point and about 1.25 miles offshore. Shoals and foul ground lie between this shoal and the shore.

2.39 Pitogo (13°47'N., 122°05'E.), a regular port of call for coastwise shipping, stands at the head of a bight between Mabio Point and Pagbabaugnan Point, about 2.75 miles E.

The town stands on a point of land between the mouths of the small Lagalag River and the Mayuboc River. The church at Pitogo is a prominent stone building with a tower on its E side. A small stone mole extend SE from the town.

A light is shown from a concrete tower, 10m high, standing in the town.

The 10m curve fronts the town as far as 0.75 mile offshore. Within the curve are numerous shoals and reefs.

An extensive reef, which dries, lies about 1.25 miles SSW of Pagbabaugnan Point. A reef, with a least depth of 2.7m, lies 0.25 mile S of the W extremity of this reef.

Anchorage.—Vessels with local knowledge can take anchorage with the church at Pitogo bearing 045°, distant about 0.75 mile, in a depth of 9m. Small vessels can anchor closer in, but care must be taken to avoid the shoals in the inner part of the harbor.

Caution.—An uncharted coral reef was reported (1992) lying between 13°45'N, 122°03'E, and 13°42'N, 122°07'E.

A depth of 6.4m lies about 2.75 miles SW of Macalelon port.

2.40 Macalelon (13°45'N., 122°08'E.), a regular port of call for coastwise shipping, stands at the mouth of the small river of the same name, about 3.5 miles SE of Pitogo.

The coastal bank, which dries abreast the town, extends 1.25 miles offshore.

Macalelon Light is shown from a concrete tower, 9m high, on the N side of the entrance to the Macalelon River.

Several detached reefs lie within 2 miles of the coast in this vicinity. A reef, with a depth of 3.9m, lies about 2.5 miles SSW of Macalelon. A shoal, with a least depth of 2.7m, lies about 2 miles SSW of the town.

Vessels with local knowledge can take anchorage with the light structure bearing 046°, distant 1.75 miles, in a depth of 12.8m.

2.41 General Luna (Hingoso) (13°41'N., 122°10'E.) (World Port Index No. 58280), a regular port of call for coastwise shipping, stands on the coast about 4.25 miles SSE of Macalelon. General Luna Light is shown at an elevation of 15m. The 10m curve fronts this coast as far as 0.75 mile offshore.

A detached reef, with a least depth of 10m, lies about 2 miles WSW of General Luna. A chain of narrow reefs extends about 2.25 miles SE from a position about 1.5 miles SW of General Luna. A rock awash, stands near the SE end of this chain about 1 mile from the coast.

A channel, from 0.5 to 0.75 mile wide and with depths of over 9m, lies between this chain and the coastal bank.

Vessels with local knowledge can take anchorage about 1 mile W of General Luna, in a depth of 9m.

2.42 Tuquian Point (13°36'N., 122°12'E.), the SE entrance point of Tayabas Bay, is located about 5.5 miles SSE of General Luna. The point is low, covered with mangroves, and fringed by a reef which extends about 0.35 mile W and 0.65 mile S.

Tagabas Bay (13°36'N., 122°16'E.), a small and sheltered bay, is entered between Tuquian Point and Sandoval Point, about 3.5 miles ESE. The entrance to the bay is reduced to a width of about 0.5 mile by Puting Buhangin Shoal and the reefs extending about 0.75 mile S from a position about 1.75 miles E of Tuquian Point.

The bay has a depth of 12.8m in its entrance, and shoals gradually toward the head. The 5.5m curve fronts the head of the bay at a distance of about 1 mile.

Puting Buhangin Shoal, a narrow detached reef which dries, extends about 1.5 miles WSW from a position about 0.75 mile WSW of the W extremity of Sandoval Point.

A shifting sandbank on the E side of the reef dries to about 0.6m. A least depth of 5.5m lies at the W end of the reef, about 2 miles WSW of the W extremity of Sandoval Point. A narrow channel for small vessels separates the E side of this reef from the reef fringing Sandoval Point.

These shoals partially protect Tagabas Bay from SW seas.

Anchorage.—Tagabas Bay affords the safest anchorage for vessels with local knowledge on the Luzon coast between Port Laguimanoc and Ragay Gulf.

Directions.—Vessels entering Tagabas Bay should bring the N side of the W extremity of Sandoval Point to bear 090°, before Tuquian Point bears 000°. When the drying part of Puting Buhangin Shoal is abeam, the course should be altered to the NE and anchor according to draft.

2.43 Sandoval Point (13°35'N., 122°16'E.) is low, densely wooded, and fringed with mangroves. It is bordered by drying reefs which extend as far as 0.5 mile SW. The point is joined to the mainland by an isthmus which is less than 0.5 mile wide.

Catanauan Bay (13°35'N., 122°18'E.) is entered between the E extremity of Sandoval Point and Pala Point.

Except for the reefs fringing the shores, there are no dangers in the bay. Depths of 13 to 15m are found in the entrance to the bay. The 10m curve fronts the head of the bay at a distance of about 1 mile.

A reef, containing several rocks which dry to about 0.6m, extends about 0.35 mile SE from the E extremity of Sandoval Point.

A reef extends about 0.5 mile SW from the W face of Pala Point. The bay widens slightly and the reef narrows inside the entrance points, leaving a sandy beach along the shores of the bay.

Catanauan (13°36'N., 122°19'E.) (World Port Index No. 58270) is a large town situated on the E side of the mouth of the Catanauan River, at the head of the bay. A drying sandbar restricts the mouth of the river. A good landmark in the town is a church of gray stone with a small dome.

There is a small pier located close inside Pala Point, but it is reported to be partially destroyed and unusable.

Catanaunan is a port of call for local mail vessels. Catanauan Light is shown from a tower, 10m high, at the town.

Anchorage.—Catanaunan Bay is protected from the effects of the Northeast Monsoon, but is open to the Southwest Monsoon. Vessels may approach the bay with the light in the town bearing 023°, and anchor, in a depth of 9.1m, sand, about 1 mile distant. Small vessels can anchor closer in on the same bearing in accordance with their draft.

Between Pala Point and Ajus Point, about 2 miles SE, the coast is fringed by a reef as far as 0.5 mile offshore. A detached reef, which dries, lies about 0.5 mile SW of Ajus Point.

Mulanay (13˚31'N., 122˚24'E.), a small town, stands at the mouth of the Mulanay River, which indents the coast about 3 miles SE of Ajus Point.

Mount Maclayao, a broad, flat-topped, heavily wooded peak, is located about 2 miles E of the town. It is 378m high and rises slightly above the other hills in the vicinity.

Vessels with knowledge of the area can take anchorage protected from the Northeast Monsoon, with the church bearing 070˚, in a depth of 9m, sand, about 0.4 mile from the shore. Vessels should approach the anchorage on this bearing, and anchor when a large rock on the shore reef is abeam to port.

Lipata Point (13˚29'N., 122˚25'E.), located about 2 miles SSE of Mulanay, can be identified by its prominent white cliffs.

Ayoni Bay is a small open roadstead, located 6.5 miles SE of Lipata Point. A reef extends about 0.5 mile SW.

The water is reported to shoal gradually from 28m, mud, about 1 mile offshore, to a depth of 9.1m, sand, about 0.5 mile offshore.

Anchorage can be taken, sheltered from the Northeast Monsoon, about 0.5 mile offshore of this bight.

The coast from this bay, for about 6 miles S, is fringed by reefs, extending in places more than 0.5 mile offshore. Dangers, comprised of detached reefs with depths of 0.9 to 9.1m, lie 0.5 to 1.5 miles offshore.

2.44 Aurora (13˚21'N., 122˚31'E.), a small village partially obscured by trees, is located about 10 miles SE of Lipata Point. A prominent church is located in the N part of the village.

Two reefs, with depths of 8.7 and 9.1m lie, 1.25 and 1.75 miles W of Aurora church. The 10m curve lies about 0.75 mile W of the village. The depths decrease sharply toward the shore.

Vessels with local knowledge can take anchorage, during the Northeast Monsoon, about 0.75 mile offshore abreast the village, in depths of from 16 to 18m, mud and sand.

Small craft may anchor closer in by following the narrow channel through the coastal reef.

Vessels approaching from the N should keep at least 1 mile offshore until the church at the village bears 100˚. This bearing leads to the anchorage.

Vessels approaching Aurora from the W should pass S and E of Subunguin Reef, located about 3.25 miles WSW, and then approach the anchorage with the church bearing 068˚.

Subunguin Reef (13˚20'N., 122˚28'E.) is marked by a stranded wreck. The reef is about 1 mile wide and is steep-to on its W side. The wreck was reported not visible at a distance of 1 mile.

Subunguin Point (13˚18'N., 122˚30'E.), about 3 miles S of Aurora, is quite prominent and high. Mangroves fringe the point and a reef extends out almost 1 mile N and a short distance W.

Almost directly S of Subunguin Point, Aguasa Bay indents the peninsula. The head of the bay is fringed by a wide drying reef.

A detached reef, with a depth of 2.1m, lies off the entrance of the bay, about 0.9 mile SSW of a steep cliff. This cliff, which is nearly 30m high, stands on the SW side of Subunguin Point.

Small vessels can anchor in the middle of the bay, in depths of from 5 to 9m.

Pinamuntangan Bay (13˚15'N., 122˚30'E.) lies close N of Pinamuntangan Point, located 3 miles S of Subunguin Point. There are several detached shoals that lie in the N part of the bay about 0.35 mile offshore. There is a sandy beach at the head of the bay.

Pinamuntangan Point (13˚15'N., 122˚30'E.) is densely wooded, fringed with mangroves, and surrounded by a very narrow coral reef.

Bondoc Point (13˚10'N., 122˚36'E.), the S extremity of Bondoc Peninsula, is a prominent formation of limestone, with a bluff about 15.2m high, rising from a base of old coral; it is surrounded by a narrow reef.

The point is very bold, gray in color, and appears as a masonry structure. It is clear of dangers and steep-to.

Bondoc Head, about 405m high and prominent, is located about 1.5 miles NNW of the point.

Marinduque Island

2.45 Marinduque Island (13˚23'N., 121˚58'E.), which is separated from Bondoc Peninsula by Mompog Pass, lies E of the E entrance to Verde Island Passage.

The island is mountainous and well wooded. There are several prominent peaks on the island, but Mount Marlanga, 1,181m high is the highest; it is located in the S part of Marinduque.

There are five towns, all of which are settled, on the island's coast or near the coast and serve as sheltered anchorage according to the season.

The three harbors of refuge are Port Balanacan, Santa Cruz, and Masagasi Bay.

The coasts of Marinduque, with the exception of the NE, are for the most part steep-to, with the 20m curve lying as far as 1 mile offshore.

Mompog Pass (13˚33'N., 122˚12'E.) lies between Tuquian Point and Maniuayan and Mompog Islands. The channel has a least width of 3.5 miles in the fairway between Mompog Island and Puting Buhangin Shoal, mentioned earlier.

In Mompog Pass the flood current sets SE and the ebb NW, but caution is advised when navigating in this area because there are strong and irregular currents both in the pass and between it and Bondoc Point.

Marinduque Island—North Side

2.46 San Andres Islands (13˚34'N., 121˚51'E.) are two small islands, 39m and 41m high, extending about 1 mile W from Silangan Point, the NW extremity of Marinduque Island. There is no channel between the islands, and at very low tides the reef which connects them with the point dries. There are rips immediately to the W of the islands.

San Andres Point (13˚34'N., 121˚52'E.), the N extremity of Marinduque Island, is a small steep-to peninsula 270m high.

The N coast of Marinduque between San Andres Point and Santa Cruz Point, about 8.5 miles E, is rugged and very irregular. This section of the coast is divided into two bays by Trapichihan Point, located about midway between the two above points.

Sayao Bay, the W bay, indents the coast to a distance of about 1.5 miles in a S direction. A narrow reef fringes its shores, but the bay is deep and clear of dangers in its middle part.

Calancan Bay, the E bay, is fringed with reefs and is foul inside a line joining Trapichihan Point and Santa Cruz Point. The Banot Islands extend 2 miles E and 1 mile NE from Trapichihan Point.

Hakupan Island, which is the outer island of this group, lies about 1 mile NE of Trapichihan Point. It is high and bold but not prominent.

A shoal, with a depth of 7.8m, lies about 0.25 mile NNW of Hakupan Island. Lusok, a small village, stands near the SE corner of Calancan Bay.

Santa Cruz Point (13˚33'N., 122˚00'E.), the W point of the N entrance to Santa Cruz Harbor, is over 30m high, and prominent. The N side of the point is fringed by a narrow reef.

A shoal, with a depth of 4.5m, lies about 0.5 mile NW of the point. Reefs and foul ground, parts of which dry, extend about 3 miles ESE from Santa Cruz Point.

The E edge of this foul ground forms the W side of the N channel leading into Santa Cruz Harbor.

2.47 Santa Cruz Harbor (13˚30'N., 122˚04'E.) (World Port Index No. 58315) lies between the NE coast of Marinduque Island and the W and S coasts of Santa Cruz Island (described in paragraph 2.49). The harbor, which is deep and clear of dangers in the fairway, serves as a port of refuge and a port of call for coastal shipping.

Some copra is loaded at the port. Two shallow rivers, the Santa Cruz River and the Tagum River, discharge into the SW part of the harbor.

The town of Santa Cruz is located about 0.75 mile SW of the mouth of the Santa Cruz River.

Depths—Limitations.—Port Buyabud, which can be identified by its lengthy pier, is located on the S side of the mouth of the Santa Cruz River, in a position about 0.5 mile S of Tabignan Point, the new entrance point of the river. It is the loading place for the village of Santa Cruz.

The N entrance channel lies between the E edge of the foul ground and reefs extending 3 miles ESE from Santa Cruz Point, and the W side of the reef extending 0.5 mile N from the NW side of Santa Cruz Island. The channel is about 0.5 mile wide with depths of 24 to 50m in the fairway. Within the entrance the shore reefs are narrow and fairly steep-to on either side of the channel.

The E entrance channel lies between the S edge of the reef extending 0.35 mile SE from the SE end of Santa Cruz Island, and the N edge of a detached reef with depths of 4.5 to 5.5m, located about 1.25 miles E of Mango Point.

The entrance is about 0.25 mile wide, with a least depth of about 14.6m in the fairway. Within the entrance the shore reefs are narrow and fairly steep-to on either side of the channel.

During the rising tide a weak current sets in through the N channel and out through the E channel. The reverse occurs during the falling tide.

A light is located on the fringing reef on the W side of Santa Cruz Harbor, in a position about 4 miles SE of Santa Cruz Point. It has been reported that the light structure may be difficult to distinguish during the day.

The N entrance channel is marked by a pair of buoys moored on the edge of the fringing reefs 1.75 miles N of the light. Another buoy is moored 1.25 miles N of the light structure and marks the edge of the reef on the W side of the channel.

There is an ore pier at Balogo, about 0.4 mile N of the light structure. The T-shaped pier, 55.8m long, 13.8m wide with a depth alongside of 10.1m, can take vessels with a draft of 9m. The pier lies in a 317˚-137˚ direction at the head of a causeway 387m long, built out from the shore.

Pier No. 2 is 39m long and 12.6m wide. Concrete dolphins are provided off each end of the pier to take mooring lines.

Pilotage.—Pilotage is not compulsory. A pilot can be obtained from Manila if required.

Anchorage.—Vessels can take anchorage in the S part of the harbor, in a depth of 16.5m, soft mud, with the S extremity of Santa Cruz Island bearing 091˚ and the SW extremity of the same island bearing 335˚.

The usual anchorage for small craft desirous of communicating with Santa Cruz is SE of Tabignan Point.

Vessels awaiting a berth at the ore pier can anchor in mid-channel, abreast the pier, in depths of 27 to 29m, mud.

Directions.—Entrance into Santa Cruz Harbor should be attempted only during daytime.

Vessels entering via the N channel should not bring Santa Cruz Point to bear more than 270˚ until the E extemity of that island, bearing 130˚, in order to give the foul ground on the W side of the entrance a good berth.

When the light on the W side bears 189˚ steer for that, passing between the buoys marking each side of the reefs at the entrance until well inside, when a mid-channel course may be kept to the anchorage.

Ships bound for the ore pier can steer a course of 180˚ from a position a little over 2 miles N by W of the N end of Santa Cruz Light bears 186˚ at this position. Steer 180˚ for Tabignan Point until abeam or due W of the N end of Santa Cruz Island. Then steer 190˚ until abreast the 8.2m shoal off the W coast of that island. After that, a course can be shaped for the pier, docking portside to.

Vessels entering Santa Cruz Harbor via the E channel should steer for the light on the W side of the harbor bearing 282˚ until Mango Point on the S side of the channel is abeam. The course should then be altered directly for the recommended anchorage.

Caution.—Care must be taken to avoid the detached reef, with depths of 4.5 to 5.5m on the S side of the entrance to the channel.

A dangerous sunken wreck has been reported at the E entrance, about 1.8 miles E of Mango Point.

2.48 Tagum Point (13˚27'N., 122˚08'E.), about 3.5 miles SE of Mango Point, is high and rugged. Conspicuous are the Tagum Peaks that rise within Tagum Point in a steep slope.

The E and higher peak, located 0.75 mile NNW of Tagum Point, is 178m high, well defined from the offing and wooded. The W peak, located about 0.5 mile NW of the E peak, is 162m high, and covered with grass. These peaks appear sharp when viewed from the N.

Several shoals, with depths of from 6 to 9m, lie within 0.6 mile E and SE of the point. The 20m curve fronts the point at a distance of about 1 mile.

Marinduque Island—Off-lying Islands

2.49 Santa Cruz Island (13° 31'N., 122° 05'E.) is low, flat, and fringed by reefs which extend about 0.5 mile N from the NW point, and about 0.35 mile SE from the SE point. The SW part of the island is a mangrove swamp, and the remainder is cultivated land.

A concrete causeway extends 90m SSW, 0.75 mile W of the SE extremity of the island.

Maniuayan Island (13° 32'N., 122° 07'E.) is low, flat and wooded with coconut groves, and surrounded by extensive reefs. A detached reef is awash and lies about 0.5 mile NE of the NE extremity of the island. The channel between this island and Santa Cruz Island, which was just discussed, is 0.5 mile wide and has a depth of 12.4m in mid-channel.

A detached shoal, with a reef that dries on its SE side, lies on the W side of the channel in a position about 1 mile NNW of the E extremity of Santa Cruz Island.

Tagum Point, in range with the summit of the easternmost hill on Salomague Island, bearing 159°, will carry a vessel through this channel. In following this range S, when the S tangent of Santa Cruz bears 270°, change to 142° so as to provide a wide berth off the sunken wreck 0.9 mile SE of the SE point of Santa Cruz Island.

Mompog Island (13° 31'N., 122° 11'E.), the outer danger off the NE coast of Marinduque, lies about 9.5 miles E of Santa Cruz Point, the NE extremity of Marinduque. The island is 86m high, and is steep-to on its E side. Mompog is fringed on its N, E, and S sides by narrow, steep-to reefs. On the W side the reef is wider, and in places it continues to Maniuayan Island, lying about 2 miles W.

The channel between Mompog Island and Maniuayan Island is about 1.25 miles wide between the 10m curves fronting the islands. A least depth of 8.2m is found in the fairway.

The bottom is very rocky and irregular. The E extremity of Salomague Island in range, bearing 184°, with the third knoll on Salomague Point, the E extremity of Marinduque, leads through the channel between the two islands in a least depth of 11.3m.

Vessels are cautioned to keep closely on this range in order to pass E of the above-mentioned 8.2m patch.

Marinduque Island—East Side

2.50 Salomague Island (13° 25'N., 122° 08'E.) extends about 2 miles SSE from a position about 1.5 miles S of Tagum Point. The NW and SE extremities of the island are low, and fringed by reefs as far as 0.25 mile offshore.

The summit of the island, 73m high, is near the center of the island. On the SE side of the island is a brown, rocky cliff about 36m high.

The NE or seaward side of the island is fringed with reefs which extend about 0.3 mile offshore at the N end, tapering to the rocky cliff mentioned above.

Masagasai Bay (13° 25'N., 122° 07'E.), a port of refuge for small vessels, is formed by a large, irregular indentation in the coast of Marinduque, between Tagum Point and Salomague Point, about 5 miles SSE. The bay is almost entirely occupied by Salomague Island.

The channel between the island and the coast of Marinduque is narrow and shallow in the middle, W of the center of the island, but expands at either end into irregularly shaped basins of moderate size and depth.

Anchorage.—Small vessels can take anchorage in the northern end of the bay, W of the N end of Salomague Island, in depths of 7 to 9m.

Directions.—To enter Masagasai Bay a vessel should steer for the conical hill, 98m high, located about 2 miles W of the N extremity of Salomague Island, bearing 260°. When Tagum Point bears 017°, the course should be altered to 197° with the point directly astern, until the conical hill bears 284°, then a direct course may be steered for the anchorage.

Caution.—Entering through the S end is not recommended because of the narrow, intricate channel leading between the reefs.

2.51 Salomague Point (13° 22'N., 122° 09'E.), the E extremity of Marinduque, located about 1.5 miles S of the SE extremity of Salomague Island, is formed by low cliffs. The 20m curve fronts the point at a distance of less than 0.25 mile.

Torrijos Bay (13° 19'N., 122° 05'E.), a small bay, is entered about 4.25 miles SW of Salomague Point. It indents the coast to a distance of about 0.2 mile in a NW direction.

The bay affords shelter to small vessels, except from S and E winds. Torrijos, a small town, stands on the high ground on the W side of the bay. The school buildings in the town are visible from most directions.

The entrance points and the sides of the bay are fringed with coral, narrowing the entrance to a width of 0.15 mile, and contracting the inner part to a width of about 0.125 mile.

Small vessels can take anchorage in the middle of the bay, in a depth of 12.8m.

Marlanga Bay (13° 16'N., 122° 03'E.), an open bight, is entered about 4 miles SSW of Torrijos Bay. It indents the coast to a distance of about 1 mile in a W direction and is entered between Cabuyo Point and Panique Point, about 2 miles SSW. The bay is fully exposed to E winds and for the most part is very deep. Anchorage can be taken, in 22 to 27m, sand, about 0.4 mile from the S shore of the bay.

Marlanga Point (13° 13'N., 122° 02'E.), the SE extremity of Marinduque and located about 2.5 miles SSW of Panique Point, is a bold headland rising to a height of 280m about 0.2 mile inland.

Marinduque Island—South Side

2.52 Suban Point (13° 12'N., 122° 00'E.), the S extremity of Marinduque, is bold and steep-to. The land within the point rises steeply to Mount Marlanga, about 2.5 miles N.

Elefante Islet is a small, round, rocky islet located about 0.5 mile SSW of Subin Point. The islet is 117m high, sparsely

wooded, and steep-to on all sides. The mariner will find this a very prominent landmark, particularly when viewed from E or W.

Tidal currents set strongly through the channel between Elefante Island and the S coast of Marinduque.

Anchorage is available on a small shelf extending N from the islet, in 24m, sandy bottom, with the E extremity of the island bearing 180°.

Tres Reyes Islands (13° 14'N., 121° 50'E.) are a group of three small, densely wooded, uninhabited islands, lying about 1.75 miles from the SW side of Marinduque.

2.53 Baltasar Island (13° 14'N., 121° 49'E.), the outermost and highest island, is 108m high and lies about 4.5 miles SW of Catala Point. This point is located on the SW side of Marinduque about 10 miles NW of the S end of the island.

A light marks Baltasar Island. It is shown from a round metal tower, 19m high, standing on the summit of the island. Melchor, the middle island, is 76m high, and lies about 3.5 miles SW of the same point.

Gaspar, the inner island, is 82m high and lies about 1.75 miles SSW of the above point. The coasts of these islands are bordered by precipitous cliffs greatly underworn by the sea.

These cliffs are highest on the SW side of each island, where they reach a height of about 61m.

The two outer islands are steep-to, but a reef and rocks extend about 0.125 mile NE from the NE side of Gaspar Island.

The channels between the three islands are deep and clear of dangers. A shoal, with a depth of 8.5m, lies in the channel between Gaspar Island and the SW coast of Marinduque, about 0.75 mile S of Catala Point.

The channel between this shoal and Gaspar is about 0.8 mile wide and 44m deep in the middle; the channel between the shoal and Marinduque is about 0.5 mile wide and has a depth of 28m in the middle.

Gasan (13° 20'N., 121° 51'E.) (World Port Index No. 58310) is located on a low bluff, from 6 to 15m high, about 2 miles SE of **Obung Point** (13° 21'N., 121° 49'E.).

The most prominent building in the town is a white warehouse, with an iron roof, standing near the beach in the N part of the town. A hill, with a ruined fort, is located behind the town and is reported to be conspicuous.

Gasan Light is shown from a concrete tower, 10m high, in the town. The light is obscured by Tres Reyes Islands.

Anchorage.—There is anchorage about 0.5 mile W of Gasan, in depths of from 13 to 15m, sand, but it is only protected from the Northeast Monsoon. Smaller vessels may anchor closer in.

It is reported that there is better anchorage available, in a depth of 27m, with the conspicuous warehouse bearing 035°, Gasan Light bearing 114°, and Baltasar Light bearing about 191°.

These anchorages are untenable during the Southwest Monsoon.

2.54 Boac (13° 27'N., 121° 50'E.), situated about 1.5 miles in from the coast, is the principal town on Marinduque Island, and the capital of the Province.

The Boac River divides about 1 mile from the sea, the main stream flowing W and reaching the sea just S of **Lupac Point** (13° 27'N., 121° 49'E.).

This point, which is the W extremity of the island, is low, flat and sandy, and bordered by coconut palms.

The Laylay River, the smaller branch, flows SW and reaches the sea at the village of Laylay about 0.5 mile SE of the mouth of the Boac River.

The small village of Laylay is the usual landing place for Boac, and copra is loaded at the anchorage off the town.

Boac Light is shown from a concrete tower, 7m high, standing on the beach at the mouth of the Laylay River.

Postal, radio, and telegraph services are available at Boac but there are no repair services, stores, dry provisions, water, or fuel oil. Medical facilities are located at the Public Health Center at Boac, but only emergency cases will be treated.

The 20m curve fronts the coast at a distance of less than 0.5 mile in the vicinity of the mouths of the two rivers, but within this curve the water shoals rapidly.

The Boac River is reported to be continually shifting its bed, and to vary greatly in the amount of its discharge.

A depth of 22m lies about 1.25 miles WSW of the light, close within the 200m curve.

The usual anchorage for Boac is from about 0.25 to 0.35 mile W of Laylay Light, in depths of 22 to 27m. The anchorage, which is exposed to the Northeast Monsoon and the Southwest Monsoon, must be approached with caution as the water shoals very rapidly.

Ulan Point (13° 30'N., 121° 51'E.) is located about 3.5 miles NE of Lupac Point. It is fringed by a coral reef which extends about 0.35 mile offshore.

Ulan Bay, encumbered by reefs, is of no value to navigation. A good landmark is a prominent white tank which stands at the head of the bay.

Pamuntangan Point (13° 31'N., 121° 51'E.), lying about 1 mile NNE of Ulan Point, is 97m high 0.25 mile within its extremity and is well-wooded.

2.55 Port Balanacan (13° 32'N., 121° 52'E.) (World Port Index No. 58300) is made up of two small but perfectly protected anchorages to accommodate moderate-sized vessels. The harbor is backed by high hills, and except for one reef in the entrance, is free from dangers.

Directions.—To enter Port Balanacan an E course should be steered so as to pass about 0.3 mile N of Pamuntangan Point. When the light on the E shore bears 060°, the course should be altered to that bearing until the W extremity of Salvaria Islet is in range 019° with Pig Point, about 0.25 mile NNE.

This range leads to the outer anchorage. Vessels proceeding to the inner basin should continue on this range for a short distance and then pass fairly close W of Salvaria Islet and then NE to the recommended anchorage.

A narrow reef extends about 0.5 mile SSW from a position about 0.25 mile SSW of Tactacan Point. Agpisan and Ataa Islands are found on this reef lying 0.3 mile and 0.5 mile SSW, respectively, off Tactacan Point.

Both islands are dome-shaped, about 15.2m high, and wooded at their summits. Pinnacle Rock, 2.4m high, lies near the outer edge of the reef about 137m SW of Ataa Island.

Magdumug Islet, lying on the outer edge of a reef which extends about 0.2 mile S from a position about 0.5 mile SSE of Tactacan Point, is 44m high and wooded.

A light brown cliff, about 27m high, is located on the W side of the islet.

A detached reef, defined by the 5.5m curve, lies from 0.15 to 0.3 mile SW of the W extremity of Magdumug Islet. A rock, which dries, lies on its E edge. This reef does not show well. The S edge of the reef and the S side of the islet form the N side of the channel leading to the outer anchorage.

Bacood Bay, which slightly indents the SW shore of the entrance, lies between Pamuntangan Point and Bacood Point, about 0.5 mile ENE.

A ruined pier extends NW from Bacood Point. A rock, with a depth of 0.9m, lies about 91m NW of Bacood Point.

A pier extends N from the same point, and several mooring buoys are laid in this area of Port Balanacan.

Two dangerous sunken wrecks are reported to lie in this bay in positions about 0.2 mile and 0.3 mile WSW, respectively, of Bacood Point; these positions are also reported doubtful.

The E shore of the outer harbor between Bacood Point and Salvaria Point, about 0.75 mile NNE, is indented and fronted by shoals as far as 0.15 mile offshore.

The village of Balanacan stands on the E shore of the port, about 0.6 mile ENE of Bacood Point. A yellow bluff, about 7.6m high, stands about 0.15 mile N of the village.

Port Balanacan Light is shown from a tower, 8m high, standing close N of the prominent yellow bluff.

2.56 Salvaria Point (13° 32'N., 121° 52'E.) is located about 0.375 mile NNW of the village of Balanacan. A pier extends from the W side of Salvaria Point with a depth of 3.4m at its head. A stranded wreck lies about 183m SSW of Salvaria Point.

Salvaria Islet, small, rocky, and nearly awash, lies on the E side of the entrance to the inner basin in a position about 91m NW of Salvaria Point. Shoals and foul ground connect the islet to the shore E and S.

The narrow channel connecting the outer anchorage with the inner basin is about 54m wide and has a least depth of 11.5m in the fairway. The inner basin is contracted to a width of about 183m and a length of 0.3 mile by shoals fronting its shore as far as 0.3 mile offshore.

Anchorage.—Vessels can take anchorage about 0.15 mile E of Magdumug Islet, in depths of 20m, mud.

Anchorage can also be taken in the somewhat restricted inner basin in a position about 0.2 mile NE of Salvaria Islet, in depths of about 12.8m, mud.

Ragay Gulf

2.57 Ragay Gulf (13° 30'N., 122° 45'E.) indents the coast of Luzon in a NNW direction for about 60 miles and then narrows down to a width of about 6 miles at the navigable portion of its head. Ragay Gulf is generally deep and clear of dangers.

The shores are fringed by narrow coral reefs interspersed with sand and gravel beaches. The hills rise abruptly from the shore and are generally wooded.

At the head of the gulf the land slopes more gradually from 0.25 to 0.5 mile inland, and then rises steeply in ridges and valleys to the higher hills inland.

The gulf, with the Vinas River discharging into its head, nearly separates the SE part of Luzon from the main portion of the island.

The 20m curve, which fronts the head of the gulf as far as 2 miles, lies quite close to the W and E shores of the gulf. The outer coastal dangers, on the W side of the gulf, lie about 3 miles offshore, and those on the E side, about 2.5 miles offshore.

Ragay Gulf—West Side

2.58 Pagsanhan Point (13° 11'N., 122° 38'E.), located about 3 miles NE of Bondoc Point, is low, wooded, and fringed by a narrow reef. Two small detached reefs lie off the point. The outer reef is awash.

Close N of the point, the Pagsanhan River discharges, with a depth of 1.2m on its bar.

Arena Point (13° 14'N., 122° 42'E.) lies 4.25 miles ENE of Pagsanhan Point. Mount San Andres, 402m high, about 6 miles NNW of the point, and another peak about 1.75 miles farther N, are prominent due to their summits being covered with tall grass. The tidal currents are strong off Arena Point.

Sombocogon Bay (13° 16'N., 122° 41'E.), small in extent and mostly foul, slightly indents the coast about 2.75 miles N of Arena Point.

Alibijaban Island (13° 21'N., 122° 43'E.) is a narrow island lying 2 miles off the coast in a position about 6 miles N of Arena Point. The N and S ends of the island are both wooded, and 48m and 19.8m high, respectively.

The middle of the island, which is low and bordered with mangroves, causes the island to appear as two islands when viewed from the offing. The E and W sides of the island are fairly steep-to. The island is fringed with a coral reef which extends 0.75 mile S and 0.25 mile N.

Several detached shoals, with depths of from 2.3 to 7.3m, lie about 1 mile off the coast in an area 2 miles long and 0.25 mile wide, with the S extremity about 2.75 miles NW of the N extremity of Alibijaban Island.

Palad Reef (13° 27'N., 122° 42'E.) is located 4.75 miles N of Alibigaban Island and extends about 2 miles NNW.

A small cay, which dries 1.5m, stands near the middle of the reef. The channel between the reef and the coast to the W is about 2 miles wide and there are some shoals, with depths of 10 to 18m. A shoal, with a depth of 11.4m, lies about 2.5 miles NW of the cay.

Pusgo Reef (13° 30'N., 122° 38'E.), with a least depth of 2.7m, lies about 1.25 miles SSE of Pusgo Point, the SE extremity of the peninsula which forms the NE side of Port Pusgo.

2.59 Port Pusgo (13° 32'N., 122° 36'E.) is entered between the N entrance point of the Bigol River and Pusgo Point, about 2 miles NNE. The narrow inlet extends about 5 miles NW into the E side of Bondoc Peninsula. The W shore of the inlet and part of the E shore is fronted with mangroves.

Buhangin, a small village, stands on the NE side of the inner entrance to the port about 1.75 miles NW of Pusgo Point. The town of San Narciso stands at the head of the inlet.

The 5.5m curve fronts the W shore of the outer entrance to a distance of about 0.75 mile. The channel between this curve and the reef fringing the S and SW sides of the peninsula forming the E side of the inlet has a least depth of 6.4m.

It passes along the SW side of the peninsula, narrowing to a width of about 91m in the vicinity of Buhangin, and continues narrow to a position about 1 mile NW of the town. The inner part of the inlet N and W of this channel is very shoal.

Small vessels with local knowledge can take protected anchorage in the inner part of the inlet, about 0.5 mile NW of Buhangin, in depths of 7.3m, mud.

2.60 Gorda Point (13˚32'N., 122˚38'E.), located 1.25 miles NNW of Pusgo Point, is high and steep. The reef which fringes Port Pusgo continues around Gorda Point to the NW, extending 91 to 183m from shore.

Two detached shoals, with depths of 4.5m and 0.9m lie 4.5 miles and 5 miles, respectively, NW of Gorda Point.

Guinhalinan Point (13˚40'N., 122˚30'E.), about 11 miles NW of Gorda Point, is low and forms the S side of the entrance to the Guinhalinan River.

A shoal, with a least depth of 10m, lies about 5.75 miles E of Guinhalinan Point.

Peris Bay (13˚42'N., 122˚30'E.) is entered between Guinhalinan Point and Lian Point, about 4.5 miles NNE.

The bay indents the coast to a distance of about 2 miles in a W direction, and is fully exposed to E winds.

Lian Point (13˚44'N., 122˚31'E.) stands out on this part of the coast and rises to a height of 91m less than 0.5 mile from shore. The Peris River is a small stream discharging into the bay at a point 2.5 miles W of Lian Point.

A coral reef, which extends about 0.25 mile S from Lian Point, fringes the N side of the bay. The head of the bay is fronted by a mudbank to a distance of about 1 mile which considerably reduces the available space.

Vessels, with local knowledge, can take anchorage in the NW part of the bay, in depths of from 7 to 11m, mud.

A shoal, with a least depth of 3.6m, lies 2 miles N of Lian Point.

Capuluan Point (13˚49'N., 122˚31'E.), located 5 miles N of Lian Point, is low and bordered by mangroves. A prominent rock, which dries except at the highest tide, marks the outer end of a reef which extends 0.2 mile E from the point. A shoal, with a least depth of 0.3m, lies 1 mile E of the point. A shoal, with a depth of 2.7m, lies 0.5 mile E of Capuluan Point. The small coves on either side of the point are shoal and of no importance to navigation.

Capuluan Reef (13˚49'N., 122˚34'E.), which dries 1.5m, lies about 2 miles E of Capuluan Point. The channel between the reef and the dangers off the point is 1 mile wide, deep, and clear of dangers in the fairway.

2.61 Guinayangan (13˚54'N., 122˚27'E.), about 6.5 miles NW of Capuluan Point, is the largest town in Ragay Gulf. Small vessels can obtain anchorage about 1.25 miles ESE of the town, in a depth of of 5.5m, mud.

The **Vinas River** (13˚55'N., 122˚27'E.) is entered between Guinayangan and Sibalun Islet, about 2.5 miles ENE. The river, which has a depth of 2.4m over its outer bar, extends about 4 miles NW to its narrow inner entrance.

The channel leading into the river is very narrow and lies between extensive mudbanks which extend from both shores and partially dry. Local knowledge is necessary when entering the river.

The 9.1m curve extends across the mouth of the Vinas River, at the head of the gulf, from a position about 3 miles SE of Guinayangan. Within the curve the depths decrease gradually and are very shallow in the vicinity of the town.

Acha Reef, with a depth of 0.5m, lies about 3.25 miles E of Guinayangan. The reef is steep-to, but a shoal extends over 1 mile S from the shore to the N, with a depth of 0.3m at its outer end.

Caution must be exercised when navigating in this vicinity, as the water is often muddy and the shoals cannot be distinguished.

2.62 Sibalun Islet (13˚55'N., 122˚30'E.) is located about 2.5 miles ENE of Guinayangan. The islet is a coral reef overgrown with trees, some of which are from 12 to 15m high. At high tide, the islet is connected to the shore by a long narrow sand bar.

Tagkawayan Bay (13˚56'N., 122˚33'E.) is entered between Awasan Point and Mambulao Point, about 1.5 miles E. The bay indents the NE corner of the gulf about 2.5 miles. The greater part of bay is shoal.

Tagkawayan (Tagcawayan), a small lumber port, stands at the head of the bay. It is connected by rail with other Luzon towns. Lumber is rafted out to ships in the anchorage. There is a telegraph station, and the sawmill maintains direct radio communications with Manila.

Vessels with local knowledge can take anchorage just inside the entrance points, in depths of 9 to 13m, mud. The anchorage is protected from all but SW winds by the surrounding high hills.

Ragay Gulf—East Side

2.63 Catabangan Bay (13˚52'N., 122˚37'E.), indenting the coast about 6 miles SE of Tagkawayan Bay, is entered between Kilbay Point and Bagutayoc Point. The shores of the bay are fringed with coral.

Between the entrance points of the bay, approximately in the middle, there is a shoal with a depth of 12.4m.

Throughout the greater part of Catabangan Bay, there are depths of over 18.3m.

Catabangan (13˚53'N., 122˚38'E.) (World Port Index No. 58230) is a small loading port located on the S side of the Catabangan River about 2.5 miles NE of Bagutayoc Point. The port is reported to be the site of a sawmill.

The S entrance point of the Catabangan River is marked by a concrete pole, 9.7m high.

Vessels with local knowledge can take anchorage off the mouth of the river, in depths of from 11 to 15m.

Omon Point (13˚48'N., 122˚41'E.), SE of Catabangan Bay, is quite high, clear, and steep-to. When entering Ragay Bay from N this point can be safely rounded within 183m.

Ragay Bay (13˚48'N., 122˚42'E.) indents the coast about 1.75 miles in a NE and E direction, and is entered between Omon Point and Otoc Point on the Luzon coast.

Four small rivers flow out into the bay but are all shallow and nearly closed by sand bars at LW.

The town of Ragay, which is connected to the general telegraph system, is located about 2.5 miles inland from the head of the bay.

Vessels with local knowledge can take anchorage on the E side of the bay, in depths of from 11 to 18m.

2.64 Port Ragay (13° 51'N., 122° 39'E.) (World Port Index No. 58220) is situated about 5 miles NW of Ragay Bay. It is a small loading port, exporting logs and some copra.

Caima Bay (13° 43'N., 122° 49'E.), which is open to the W, indents the coast about 4 miles. The shores of the bay are fringed by coral, and a narrow strip of mangroves extends along the beach.

Otoc Point (13° 47'N., 122° 43'E.), is the W extremity of Saboon Island, which is separated from the mainland by a narrow channel which dries. Foul ground, with a rock awash near its outer end, extends about 0.75 mile W from the point.

Anchorage.—Vessels with local knowledge can take anchorage, in depths of 14.5m, NE of Bantuin Point. This anchorage is protected by the point and by Carabang Island and Galvaney Island during the Southwest Monsoon.

Anchorage can also be taken SW of Binahaan village, about 1 mile offshore, in depths of from 9 to 15m, mud.

The village is located about 4.5 miles NE of Bantuin Point.

Bantuin Point (13° 39'N., 122° 48'E.), 164m high, extends about 1.5 miles from the coast. It has a conspicuous sharp peak near its extremity which is steep-to on its seaward side and looks like an island from a distance.

A prominent 493m peak is located about 4 miles SE of Bantuin Point. It is reported that a white scar on its side is conspicuous, and the peak is visible from nearly all parts of the gulf.

Carabang Island, 59m high, lies on a narrow reef which extends 1.25 miles NW from Bantuin Point. The island is steep-to on its seaward side.

Galvaney Island, 73m high, and a large rock 12.2m high NW of it, lie on the reef extending from Bantuin Point.

These dangers are steep-to on the gulf side, but there is foul ground between them and the point.

Tanuan Point (13° 31'N., 122° 58'E.), about 13 miles SE of the prominent point of Bantuin Point, is the location of the town of Dalopaon.

Vessels can take anchorage off Dalopaon, but rather close in because of the great depths.

2.65 Pasacao Anchorage (13° 30'N., 123° 03'E.), a loading area for logs and copra, lies between Pasacao Point and Refugio Island. The shore of the cove is fringed by a reef with sand and mud covering it.

Pasacao, a small town, stands on the N side of the bight about 0.75 mile N of Pasacao Point. A 44m pier, with a warehouse, has a depth of 2.1m alongside. No fresh water, stores, or provisions are obtainable. A resident government health officer is in attendance. There is a telegraph station in the town.

Refugio Island, 61m high, is fringed by a steep-to reef that extends about 137m S from its S side. The channel between the island and the coast NE of it is deep and clear of dangers, but is reduced to a width of about 0.2 mile by a reef extending about 0.25 mile SW from the shore.

Vessels with local knowledge can take anchorage in depths of 5 to 9m, mud, but is open to the SW. At times a choppy sea sets in and makes cargo-handling operations extremely difficult.

Jamuraon Bay (13° 26'N., 123° 10'E.) is located about 8.5 miles SE of Refugio Island. This open bight is entered between Sibono Point and Tongon Point. The town of Jamuraon stands at the head of the bay. Sibono Point is quite easy to identify as it has two peaks contrasting sharply against the higher ground inland.

Vessels with local knowledge can take anchorage off the small town of Jamuraon, in depths of 5 to 11m, but it should be noted that outside the coastal bank the bottom drops off steeply.

Tongon Point (13° 23'N., 123° 12'E.) can be identified by the precipitous bluff, about 61m high, on its S side.

The N side of the point is low.

Caurusan Point (Kaurusan Point) (13° 21'N., 123° 12'E.), about 2.5 miles SSE of Tongon Point, can be identified by its pyramidal shape, the tall grass on the S side of its extremity, and the steep valley S of it.

Coguit Point (13° 18'N., 123° 14'E.), about 3.5 miles SSE of Courusan Point, is low and covered with brushwood. It is bordered by a sandy beach and fringed by a reef extending about 0.25 mile offshore.

A conspicuous grass-covered hill lies between the point and the higher ridge inland.

Bedal Point (13° 16'N., 123° 16'E.) is fringed by a narrow reef. A detached reef lies awash, about 0.25 mile S of the point. It is located about 2.5 miles SE of Coguit Point.

2.66 Pantao Bay (13° 12'N., 123° 19'E.), small in area and which indents the coast in a SE direction, lies immediately NE of Caunbalan Point. The bay affords good anchorage for small vessels with local knowledge, but is exposed to the NW. A light-colored cliff, 36m high, stands on the top of a grass-covered ridge about 2.5 miles N of Pantao Bay. It is a good landmark.

Caunbalan Point (13° 11'N., 123° 18'E.) serves as a good landmark for vessels in this area as it is quite high with a number of large rocks at the foot of the cliffs.

The point is fringed by a coral reef. Mount Pantao, 460m high, is located about 3.25 miles ESE of Caunbalan Point and is easily identifiable.

Apud Reef (13° 09'N., 123° 17'E.) stands on a shoal, as defined by the 9.1m curve, which extends about 1.5 miles NW from a position close NW of the point. Apud Reef is an extensive reef that bares over an area about 1 mile long and 0.5 mile wide. A rock lies, awash at LW, about 0.75 mile NW of the main reef.

The channel between the reef and the point is about 0.3 mile wide. A shoal, with a depth of 4.9m, lies in mid-channel NW of Apud Point to which it is connected by a ridge covered by somewhat deeper water. The narrow channel lying to the W of the 4.9m shoal has a depth of 14.6m.

Vessels with local knowledge can take fairly good protection in Mabato Bay eastward of Apud Reef, but vessels should anchor well toward the point.

Apud Point (13°09'N., 123°17'E.), located about 2.75 miles SSW of Caunbalan Point, is low, covered with mangroves, brushwood, and scattered coconut palms.

2.67 Macoto Point (13°09'N., 123°17'E.), located about 5.5 miles S of Apud Point, is bold and prominent. Three wooded hills on the point, the highest 73m, and the low land between them, give the point the appearance of an island from N or S.

Bagadamolag Islet, very small in extent, lies 0.25 mile SE of the point close off the fringing reef. A shoal, with a depth of 4m, lies nearly 1 mile NW of Macoto Point.

Cagmanaba Bay (13°03'N., 123°17'E.), a slight indentation in the coast close S of Macoto Point, affords shelter for small vessels, with local knowledge, from all winds except from S. A hill 32m high is close to the shore near the head of the bay, and Mount Caburauan, 473m high, about 2 miles inland, serves as useful marks for vessels in this vicinity.

Cabarian Point (13°01'N., 123°19'E.), the E entrance point of Ragay Gulf, is low and wooded. It is fringed by a reef about 183m wide. The point may be identified by a 93m high hill located about 0.5 mile N of the point. A shoal, with a least depth of 18.3m, lies 1 mile W of the point.

The coast continuing E of Cabarian Point is described beginning in paragraph 2.75.

Burias Island, Burias Pass, and Off-lying Islands

2.68 Burias Island (13°00'N., 123°06'E.) lies in the entrance to Ragay Gulf. The island is predominately mountainous, thinly wooded, and has a steep coast. The shores are bordered by coral reefs, and there are a few stretches of sandy beaches.

The slope of **Mount Enganoso** (12°52'N., 123°14'E.) may be mistaken for the extremity of the island, a misunderstanding which has caused the loss of several vessels. Mount Enganoso is the highest point on Burias Island, 428m high.

Burias Pass (13°00'N., 123°15'E.), a wide and deep channel, connects Ticao Pass with Ragay Gulf and separates the E side of Burias Island from the S coast of Luzon.

The least width in the pass is between **Cabarian Point** (13°01'N., 123°19'E.) and Siargao Point, located about 7.5 miles SW.

Caution.—Navigators must exercise caution when approaching Burias Island from the W during periods of low visibility, such as often occurs with the Southwest Monsoon, because the SE end of the island may not always be visible.

2.69 Templo Island (13°09'N., 122°52'E.), 74m high, extends about 3 miles NNW from a position 2.5 miles NW of Cueva Point, the NW extremity of Burias Island.

There are some detached rocks on the reef which fringes the S shore of the island, and also on the reef which extends 0.5 mile NE from the N end.

Sombrero Islets (13°09'N., 122°50'E.) consist of two small islets lying close together on a narrow reef, which extends 1.75 miles NNW from a position about 1.5 miles WSW of the SW extremity of Templo Island. The N and smaller islet is 32m high and the larger islet is low and covered with brushwood.

Arena Islet (13°09'N., 122°48'E.) lies on a circular reef, about 0.5 mile in diameter, in a position about 2.5 miles WNW of Sombrero Islets. A narrow shoal, as defined by the 5.5m curve, extends 0.5 mile NE from the islet. A shoal, with a depth of 14.6m at its outer end, extends 1 mile N from the islet.

Inaguaran Shoal (13°11'N., 122°48'E.) constitutes the northwesternmost danger in this area. The shoal is located about 1.75 miles N of Arena Islet and has a least depth of 5.8m.

A clear and deep channel, about 0.75 mile wide, lies between this shoal and the N edge of the shoal bank extending N from Arena Islet.

Tinalisayan Islets (13°09'N., 122°56'E.), which are low and sandy, lie on a reef located about 2.5 miles N of Cueva Point, the NW extremity of Burias Island.

A channel, about 0.5 mile wide, with a least depth of 12.8m in the fairway, lies between Tinalisayan Islets and the W extremity of Busing Island, about 1.25 miles SE.

Tanguingui Islet (13°11'N., 122°56'E.), fringed by a reef, is located about 1.25 miles NNE of Tinalisayan Islets. The channel between this islet and Tinalisayan Islets has several shoals, the least depth being 4.5m.

A steep-to shoal, with a depth of 6.4m, lies about 0.75 mile N of Tanguingui Islet, with a deep passage between.

A detached shoal, with a least depth of 2.7m, lies about 2.25 miles N of Colorada Point, the N extremity of Burias Island.

Anima Sola Islet (13°13'N., 123°03'E.) is a small islet 34m high, located about 5 miles NE of Colorada Point.

Burias Island—West Side

2.70 Port Busin (Busing) (13°08'N., 122°58'E.), important as being a typhoon anchorage, lies between the NW side of Burias Island and the S side of Busin Island (Busing Island).

Busin Island, 80m high and wooded, is fringed by a reef which dries in places. Shoal water, as defined by the 5.5m curve, extends over 0.5 mile W and NW from the W side of the island.

The coast of Burias Island that forms the S side of the port is indented by several coves. These coves are for the most part foul, but deep water lies close off their entrance points.

The W entrance to the port, which is narrow and tortuous, lies between partially drying reefs extending from both shores. A least depth of 9.6m is found in the fairway.

The recommended N entrance to the port, which is also narrow, lies between the rather steep E side of Busin Island and the coast of Burias Island. Depths of over 18.3m are found in the fairway. This entrance can be identified by Colorada Point, the N cape of Burias Island, which shows yellow patches among the trees that cover it.

The massive bluffs near the entrance are also prominent.

San Pascual is used by small inter-island vessels. There is a pier close N of the town, 146m in length. There is a depth of 2.4m at its head.

Anchorage.—Vessels with local knowledge can take anchorage NW of the town of San Pascual, in depths of from 13 to 18m, mud.

Directions.—Vessels entering Port Busing, via the recommended N channel, should round Colorada Point at a distance of 0.3 mile and keep in mid-channel between Burias Island and Busin Island to the anchorage.

Small vessels entering Port Busin via the W channel, should bring the conspicuous white cliff on the W end of Busin Island to bear 070° and make the approach on that bearing.

This course leads clear of the reef fringing the N face of Cueva Point. When about 0.5 mile from the cliff, the course should be altered to the SE, and a mid-channel course should be steered up the narrow and crooked channel to the anchorage.

Guinduganan Bay (13°02'N., 122°58'E.), a small cove, indents the coast close E of Guinduganan Point. The coast between Cueva Point and Guinduganan Point is indented in its N part by Alimango Bay, a small cove. A shoal, with a depth of 2.1m, and a rock awash, lie in the entrance to the bay. A shoal, with a least depth of 4.9m, lies about 0.5 mile SW of Cueva Point.

Ilog Bay (13°00'N., 123°04'E.), a small cove, indents the coast about 1 mile close SE of Mangrove Point.

Malapingan Point (12°51'N., 123°12'E.) is located 12.5 miles SE of Mangrove Point.

Nabasagan Bay (12°51'N., 123°13'E.), a small cove, lies close E of Malapingan Point. The village of Nabasagan stands at the head of the bay.

A rock awash, with several other shoals, as defined by the 5.5m curve, extends about 1.5 miles SW from the coast from a position about 1.5 miles NW of Malapingan Point.

Caution.—Vessels are advised to keep well offshore in this vicinity.

2.71 **Mount Enganoso** (12°52'N., 123°14'E.), is 1.5 miles E of Nabasagan and is the only good landmark on the coast.

Gorrion Islet (12°49'N., 123°16'E.), located about 3 miles SE of Nagasagan Bay, lies on a coastal reef about 4.75 mile offshore.

The coastal reef extends for 4 miles SE of the islet and a bank, with depths of less than 9m, extends 1 mile offshore.

The coast between Malapingan Point to Aguja Point, with about 14 miles between, is fringed by reefs, with the exception of the last 5 miles, which is bold and steep-to.

The 10m curve lies about 1 mile offshore along this stretch of coast.

Aguja Point (12°42'N., 123°23'E.), the SE extremity of Burias Island, is bold and steep-to. The land within the point gradually slopes down from Mount Sagurum, which has an elevation of 221m.

Burias Island—East Side

2.72 The NE extremity of Burias Island, between Colorada Point and the entrance to Port Busainga, about 3.5 miles SE, is indented by Laurente Bay. This bay, which is open to the N and E, is mostly foul.

Shoals extend 0.75 mile offshore in the E part of the bay. Several reefs lie awash in this shoal area.

Port Busainga (13°07'N., 123°02'E.), an excellent typhoon anchorage for small vessels, is entered between Piedras Point, 3.75 miles SE of Colorada Point, and Boca Point, 0.15 mile further S.

The shore on either side of the narrow entrance channel is fringed by reefs and indented by several small coves which dry at LW. The channel leading into the inner anchorage is about 91m wide at its narrowest point. About 1 mile within the entrance points the harbor opens out to a width of over 1 mile, but is very shallow.

The diurnal range of the tide is 1.7m.

Boca Islets lie on the outer edge of a reef which extends about 0.35 mile E from the coast N of Piedras Point. The N and larger islet is 17m high and wooded. The smaller one is 13.7m high and covered with tall grass.

A reef, which dries, extends nearly 137m N from Medio Point, located on the SE shore of the port, in a position about 0.5 mile SW of Boca Point.

Anchorage.—Vessels with local knowledge can take anchorage about midway between Esterio Point, located about 0.35 mile SSW of Boca Point, and a point on the opposite shore about 0.15 mile NNW, in depths of 22m, mud. Small vessels, with local knowledge, can anchor, in 3.6m, in the inner part of the port.

Port Busainga is suitable only for small vessels, as the swinging room and turning room is extremely limited.

The channel leading to the inner anchorage is 91m wide at its narrowest part.

2.73 **Dampalan Bay** (13°02'N., 123°06'E.), which is encumbered by reefs, is entered immediately W of Casameyon Point, located about 6.5 miles SE of Port Busainga. The bay can be identified by the junction of the wooded hills N of Bagabarco Point, located about 2 miles NW of Casameyon Point, and the lower grass-covered hills S.

Nonoc Bay (12°56'N., 123°11'E.), entered between San Pinetan Point and Siargao Point, 5.75 miles further SE, is mostly foul, and is formed by a slight indentation in the coast. A reef, which dries, extends 2 miles NW from Siargao Point, and a reef, parts of which dry, extends 2 miles SE from San Pinetan Point.

The entrance between the extremities of these reefs is foul, with detached reefs and shoals, but small vessels with local knowledge can find shelter inshore of these dangers in 24 to 26m, mud.

2.74 **Port Boca Engano** (12°47'N., 123°19'E.), a small cove which indents the coast about 1 mile, is entered between Castillo Point, located about 7.75 miles SE of Siargao Point, and Tres Marias Point, about 0.6 mile ESE. There is an extensive shoal, parts of which dry, in the middle of the entrance.

The entrance to the E channel is about 91m wide with a least depth of 8.7m. The W channel is deep and about 137m wide at its entrance, narrowing to a least width of 183m inside.

An extensive reef, covered with mud, extends about 0.5 mile NW from the head of the cove.

Anchorage.—This port is not recommended as an anchorage. The depths are considerable, the bottom is hard, and there is little swinging room.

The land around the inlet is low offering little protection from the wind during the monsoons.

Small vessels, with local knowledge, can take anchorage with the NW tangent of Tres Marias Point, bearing 038° distant 0.35 mile, in depths of 29m, hard mud.

Vessels should make the approach to the port with the bold bluff of Castillo Point bearing 235°, until the tangent to Tres Marias Point bears 118°, then steer 156°, taking care to avoid

the shoal at the entrance and anchor in the position given above.

Luzon—Cabarian Point to Tagiran Point

2.75 Solitario Islet (13°01'N., 123°21'E.) is located about 2 miles E of Cabarian Point, previously described in paragraph 2.67, and 0.5 mile offshore. A shallow reef connects the islet with the shore. The 20m curve fronts the shore in the vicinity as far as 1.25 miles offshore. Vessels are advised to stay well S of this 10.3m islet to avoid the shoal water extending off this coast.

Panganiran Bay (13°02'N., 123°25'E.) is a large bay indenting the coast and open to the S, located 5 miles E of Cabarian Point, Bagalayog Point, located about 4.75 miles ENE of Cabarian Point, is prominent, and affords some protection to a vessel anchoring close E or W of it.

Several small villages are scattered along this coast, of which Magradongdong, about 1.5 miles E of Bagalayog Point, is the most important. It is distinguished by a metal roof building.

Catundulan Point (12°56'N., 123°32'E.), 10 miles SE of Bagalayog Point, consists of bright sand cliffs varying in height from 18 to 33m. The point is wooded with the exception of one small patch of tall grass near the cliff on the SW side. Sunken coral heads and a reef, which dries, extend nearly 0.125 mile SW and S from the point.

Tinanogan Bay (12°56'N., 123°33'E.), which indents the coast to a distance of about 1 mile, is entered between Catundulan Point and Pampang Point, about 2.5 miles ESE. The bay has a flat sandy beach which dries for a distance of about 0.5 mile from its head. There are no dangers in the outer part of the bay, and the 20m curve fronts the shore as far as 0.75 mile.

Pampang Point is composed of light-colored cliffs about 12m high, but is not prominent.

Donsol (12°54'N., 123°35'E.) (World Port Index No. 58210), a small loading port for copra, stands on the E side of the mouth of the Donsol River, about 1.75 miles SE of Pampang Point.

The port is an open roadstead, as the river is navigable only by small vessels.

Several galvanized iron-roofed buildings identify the town. The mouth of the river is fronted by sand banks and fish traps extending about 0.5 mile offshore.

The depth over the bar at the mouth of the river is about 0.6m.

Donsol Light is shown from a wooden framework tower, 10m high, standing on the SE side of the river entrance.

A rock awash lies about 0.25 mile SW of Donsol Light.

Anchorage.—Vessels can anchor about 1 mile SSW of the light, in depths of 35m. The anchorage is exposed to both the Northeast Monsoon and the Southwest Monsoon.

2.76 Dumaquit Point (12°52'N., 123°39'E.), located about 4 miles ESE of Donsol, is covered with tall grass and small trees, and shows a level profile almost to the 9m vertical cliffs at its extremity.

A shoal, with a depth of 7.3m, lies about 1 mile SSW of the point.

Port Putiao (12°53'N., 123°40'E.) is entered between Dumaquit Point and Cutcut Point, about 2.5 miles E. The N part of the port is known as Pilar Bay. The Malbug River discharges into the head of the bay. Pilar, located 3.5 miles NNE of Dumaquit Point, is the most important town on the bay.

A reef, which dries, extends nearly 0.5 mile SE from Dumaquit Point. The shores of the port are foul and the entire bay is shallow. A narrow unmarked channel, with a least depth of 2.4m, leads to the anchorage off the town of Pilar. A light is shown from the W entrance point.

Small vessels with local knowledge can take anchorage with the church at Pilar bearing 030° and Punahuan Island, 0.5 mile S of Pilar, bearing 080°.

2.77 Port Panlatuan (12°52'N., 123°42'E.), a shallow bay, is entered between Cutcut Point and Bantigui Point, about 2.75 miles SE. The bay is largely encumbered with shoals and reefs. Mecapiot Bay, the NW arm of the port, is an excellent typhoon anchorage for small vessels drawing less than 3.7m.

The N arm of the port is narrow and of little importance. The small town of Panlatuan stands on Panlatuan Point, on the W side of the port, in a position about 1 mile NE of Cutcut Point.

A shoal, with two rocks lying awash on its outer end, extends nearly 0.75 mile SSE from Cutcut Point. A reef, which dries, extends 1.25 miles W from the E shore, just inside the outer entrance. Bantigui Point is low, rocky, and wooded. It terminates in clay cliffs and a gravel beach. Bantigui Point is fringed by a reef extending about 0.2 mile S.

Small vessels with local knowledge can take anchorage, in a depth of 3.6m, mud, about 0.25 mile NW of Panlatuan Point.

Sorsogon Bay (12°55'N., 123°55'E.), the largest and best harbor in S Luzon, is entered between Banktigui Point and Magallanes, a small-port about 5.5 miles ESE.

The bay indents the coast as far as 17 miles in an ESE direction.

The entrance to the bay is divided into three channels by Malaumauan Island and Bagatao Island. The main channel, which is about 1.25 miles wide, lies between the two islands.

Caution.—The channels between these islands and the coast of Luzon are narrow and encumbered with shoals.

The navigable channel, which has depths of over 12.8m in the fairway, is reduced to a width of about 0.6 mile between the 9.1m curve on either side. The 9.1m curve fronts the head of the bay as far as 7.5 miles, and the 5.5m curve fronts the head of the bay as far as 3.75 miles.

The channel sides of the islets on the N side of the channel within the outer entrance are steep-to, and vessels have only to keep in mid-channel to be clear of all dangers.

2.78 Malaumauan Island (12°51'N., 123°46'E.) is low, flat, wooded, fronted by white sandy beaches, and located on the W side of the entrance to the bay in a position about 1.5 miles E of Bantigui Point.

A narrow spit extends about 0.8 mile N from the N extremity of the island, leaving only the very narrow channel between it and the coast to the N. A ledge, which dries in places, extends 1.25 miles SW from the island.

A depth of 8m is found on the outer edge of the shoal ground extending 1 mile S from the island.

Bagatao Island Light

Bagatao Island (12° 50'N., 123° 48'E.) lies on the E side of the entrance to the bay in a position about 3.25 miles ESE of Bantigui Point. The island is 126m high and wooded. The coasts of the island are clear of dangers, except on the SE side, where it is connected to the coast of Luzon by shoals and foul ground. A shoal, with a depth of 5.5m, lies about 0.5 mile SSE of the W extremity of the island.

Two lights mark the W extremity of the island.

Bagatao Island Light, a round metal tower and dwelling, 9m high, stands on the S point of the W extremity of the island.

Sorsogon Bay Light is shown from a concrete tower, 7m high, standing on the N point of the W extremity of the island.

Tinacos Islet (12° 50'N., 123° 50'E.), 12m high, lies 0.25 mile N of the NE extremity of Bagatao Island.

Anchorage.—There is temporary anchorage over a bank of fine, black sand which extends 3 miles SW from Bagatao Island, in depths from 18 to 29m. There is also good sheltered anchorage N of Bagatao Island, off a small sandy beach close W of Tinacos Island.

2.79 Tomalaytay Islet (12° 52'N., 123° 49'E.) lies about 0.5 mile off the N side of the channel leading to Sorsogon Bay and about 2.75 miles ENE of Malaumauan Island.

It is the W islet of a group of small islets and dangers which are separated from the coast of Luzon by a narrow and foul channel. Foul ground connects the islet to the shore N. A shoal, with a depth of 3.5m, lies about 0.6 mile SW of the islet.

Maririg (Maririgi) **Islet** (12° 52'N., 123° 50'E.), another islet of the group, is 23m high and lies about 1 mile ENE of Tomalaytay Islet. Lavampa Islet, 35m high, lies about 0.3 mile NE of Maririg Islet, and Matagdac Islet, 58m high, lies about the same distance N of Lavampa Islet.

Rocks and dangers lie close off the coasts of these islets.

A shoal, with a depth of 8.7m, lies about 0.5 mile NE of Matagdac Islet.

Dibughan Islet (12° 54'N., 123° 51'E.) lies close off Palinauan Point on the N side of the inner entrance to the wide part of the bay. The point is located about 7.75 miles ENE of Bantigui Point.

Magallanes Rock (12° 53'N., 123° 51'E.), the outer danger on this side of the channel, lies awash in a position about 0.15 mile N of Macuhil Point, located on the S side of the channel, about 3.25 miles NE of Magallanes.

Sablayan Island (12° 53'N., 123° 53'E.), 130m high and wooded, is located about 1.5 miles E of Macuhil Point.

The island is separated from the coast to the SW by a narrow and shoal channel. There are numerous fish traps and stakes in Sorsogon Bay.

Castilla (12° 57'N., 123° 53'E.) is a small town on a low bluff on the NW shore of Sorsogon Bay, about 10.5 miles NE of Bantigui Point.

A light is shown at Castilla on the N entrance of the river from a concrete tower, 10m high.

Sorsogon (12° 58'N., 124° 00'E.) (World Port Index No. 58205), a town of considerable importance, stands on the N shore near the head of the bay in a position about 17.5 miles ENE of Bantigui Point.

The church tower in the town is prominent. There are two small piers which dry at LW, and a stone causeway, of considerable length, which has a depth of 1.2m.

2.80 Casiguran (12° 53'N., 124° 00'E.) (World Port Index No. 58200) lies on the S shore of the bay near its head, about 16.25 miles E of Bantigui Point. There is a concrete causeway at the waterfront. Vessels anchor a little more than 1 mile NW of the town. Casiguran Light is shown from a concrete tower, 10m high, standing in the town.

Anchorage.—Large vessels can anchor anywhere in Sorsogon Bay, according to their draft, except in the vicinity of the submarine cable.

Small vessels can anchor SW of Sablayan, which should be made with Palinauan Point bearing 316° astern, and anchorage can be taken anywhere off the W face of the island. This channel carries a depth of about 2.7m.

Directions.—Vessels entering Sorsogon Bay should pass about 1 mile E of the buoy moored SW of Malaumauan Island, on a course of 017°, until Bagatao Island Light bears 112°, then steer 064° with Macuhil Point ahead.

This course is run for a distance of 4 miles until the E tangent of Lavampa Islet bears 338°, distance 0.5 mile. Then steer 038° until Macuhil Point bears about 168°, distant 0.6 mile. From this position a course of 066° leads to the anchorage off Sorsogon.

2.81 Magallanes (12° 50'N., 123° 50'E.) (World Port Index No. 58190) lies on the S side of the entrance to Sorsogon Bay. A narrow channel, with a least depth of 10.9m, leads to the port from N, but only 2.4m can be carried at LW across the bar in the S approach. It is a regular port of call for inter-island vessels.

Bulan (12° 40'N., 123° 52'E.) (World Port Index No. 58180), the most important town in this vicinity, stands on the N side of the entrance to the Sabang River, close N of Sabang Point.

The town can be identified by Verde Hill, 146m high and covered with tall grass, located about 3.5 miles E of Bulan. Bulan Church is not visible from seaward.

Bulan Light is shown from a concrete tower, 8m high, standing on the shore near the middle of the town. It has been reported that in daylight the tower was obscured by buildings when approaching from NW.

The 20m curve fronts the shore, in the vicinity of the town, as far as 0.75 mile offshore.

Storm warning signals are displayed in the town.

The anchorage off Bulan is an open roadstead. Vessels can take anchorage with the light structure, bearing 075°, distant about 0.75 mile, in a depth of 18m.

The anchorage is safe during normal weather conditions, but currents of up to 3 knots set parallel with the coast in this vicinity.

Two small wooden piers, 75m in length, are situated 0.15 mile N and S, respectively, of Bulan Light.

The principal pier, situated S of the two wooden piers, is a 61m long pier at the end of a rock causeway, 260m in length, with depths of 3m alongside its head.

2.82 Agnas Point (12° 37'N., 123° 55'E.) lies about 3.25 miles SE of Sabang Point. It is a well defined flat-topped bluff, 36m high, covered with tall grass, and with vertical sides which are nearly bare. Trees extend to within a short distance of the bluff.

Utabe Bay (Otabi Bay) (12° 38'N., 123° 54'E.) lies close NW of Agnas Point. The 20m curve fronts the head of the bay at a distance of about 1 mile. The bay is fully exposed to the W, but temporary anchorage can be taken about 0.5 mile from the head of the bay, in depths of over 9m.

Butag Bay (12° 37'N., 123° 56'E.), entered E of Agnas Point, is about 0.75 mile wide and indents the coast to about the same distance in a N direction.

The shores are wooded, and the head of the bay is shoal. Butag, a small village, stands at the head of the bay on the N side of the Butag River.

Vessels can take anchorage in a very limited area in the center of the bay, in depths of 13 to 18m.

Tagiran Point (12° 33'N., 123° 58'E.), lying about 5 miles SE of Agnas Point, is the termination of a flat-topped peninsula about 9.1m high. It is covered with tall grass. This part of Luzon is mountainous and densely wooded.

The summits of the main ridge are from about 304 to 500m high. Mount Calomutan, 591m high, and Mount Sujac, 501m high are located 2 miles NNE and 2.5 miles NE, respectively, of Tagiran Point and are prominent summits.

Masbate—Northeast Coast

2.83 Masbate Island (12° 20'N., 123° 30'E.) is mountainous, there being a central chain which follows a semi-circular direction and terminates at the SW and SE points of the island. The island is sparsely inhabited.

The highest point is located 19 miles SE of Bugui Point where there is an elevation of 696m. The towns are small and of little commercial importance.

Bugui Point (12° 36'N., 123° 14'E.), the N extremity of Masbate Island is moderately high, rugged, and steep-to. The point is marked by a light which is shown from a round masonry tower, 15m high, attached to a dwelling.

The NE coast of Masbate between Bugui Point and Colorada Point, about 9 miles ESE, is rugged and steep-to. The shore reef extends from 91m to about 0.25 mile offshore. Diablo Islet lies on the coastal reef about 4 miles ESE of Bugui Point.

Colorada Point (12° 33'N., 123° 23'E.), marked by a light, is the termination of a group of small hills that rise from about 61 to 91m high, ending in a bluff about 15.2m high. The point is fringed by a drying coral reef extending as far as 183m NE. A shoal spot, as defined by the 9.1m curve, extends about 0.5 mile E from the point.

2.84 Port Barrera (12° 31'N., 123° 23'E.) (World Port Index No. 58600) is entered between Colorada Point and Catbatan Point, about 2 miles SE. It is a good harbor of refuge and indents the coast as far as 7 miles in a SSW direction. The surrounding land is mountainous, and of a reddish color. The shores are fringed with mangroves.

The N shore of the outer part is generally steep-to. A narrow shoal spot, with a least depth of 3m at its outer end, extends about 0.25 mile SSE from a position about 1.75 miles W of Colorada Point.

The W shore of the outer part of the port between the Mailaba River, located 2.25 miles W of Colorada Point, and Matalan Point about 1.5 miles SSW, is fronted by drying reefs as far as 0.5 mile offshore. Matalan Point is fronted by a drying reef which extends about 0.4 mile NE.

The SE shore of the outer part of the port between Catbatan Point and Amoron Point, about 2.25 miles WSW, is fronted by a drying reef.

This reef, which is broken only off the town of Aroroy, extends 0.25 mile N from Catbatan Point and 0.4 mile NNE and 0.15 mile W from Amoron Point.

A reef, with a least depth of 0.9m, lies on the W side of the channel leading to the inner anchorage in a position about 0.65 mile E of Matalan Point. Another reef, with a least depth of 1.8m, lies on the E side of the channel in a position about 0.325 mile W of Amoron Point.

Two shoals, with depths of 5.5m, lie on the W side of the fairway in positions about 0.5 mile WSW and 0.65 mile SW of Amoron Point. The channel S of these shoals is very narrow.

The head of the port S and SW of Macatul Point, located 1.25 miles S of Amoron Point, is shallow and encumbered with mud flats. The Lanang River and several smaller rivers flow into the head of the port. These rivers cause a strong N current during the falling tide in the inner anchorage, with practically no current during the rising tide.

Mount Canatonatoan, 224m high, and Mount Bagadila, 321m high and marked by a large grassy patch on its W slope, are located about 0.75 mile and 1.75 miles, respectively, S of the town of Aroroy.

They are conical in shape in contrast to the irregular-shaped and higher mountains inland, and serve as useful marks when approaching the port.

Aroroy (Aroro), a small town, is located on the E shore of the harbor in a position about 0.75 mile SW of Catbatan Point. There is a small wooden pier extending from the village. The town has a post office and telegraph communication facilities.

Depths of over 18.3m are found in the wide outer part of the harbor as far as 1.5 miles within the entrance points. A narrow channel, with a least depth of 6m, leads S from the wide outer part of the harbor to the inner anchorage, located about 3.25 miles SSW of Colorada Point. The continuation of the channel S is extremely narrow and leads to the shallow head of the port.

Anchorage.—Vessels can take anchorage off the inner side of the sandy beach S of Colorada Point, in depths of 40m, coarse sand and mud. They can also anchor in the entrance to the port with Colorada Point bearing 000°.

Small vessels, with local knowledge, can find secure anchorage in the inner part of the port, SW of the mouth of the Guinobatan River, or NW of Magaguilan Islet, which lies about 0.15 mile SW of Macatul Point, in depths of 8 to 11m.

Directions.—Small vessels proceeding to the inner part of the port, from a position about 1 mile S of Colorada Point, should steer 225° for a white spot on Cliff Point, until Magaguilan Island bears 153°, then head for it on this bearing. When the center of Mount Canatonatoan bears 090°, alter course to 176°. When Magaguilan Island bears 145°, anchor in the specified anchorage.

Caution.—The waters of Port Barrera are not buoyed. Vessels are advised not to enter the inner harbor.

2.85 Catbatan Point (12° 31'N., 123° 24'E.) is hilly and wooded. Catbatan Rock, which is prominent, lies on the outer edge of the coastal reef which extends about 0.75 mile N from the point.

Pasil Bay (12° 27'N., 123° 32'E.), entered 9 miles SE of Catbatan Point, is very small and indents the coast as far as 0.5 mile in a SSW direction. The town of Magdalena, in which there is a church, stands on the E side of the bay.

Small vessels, with local knowledge, can take anchorage between a prominent sandspit on the NW side, and the church in Magdalena, in depths of 13 to 15m, mud. Good protection may be found nearer the head of the bay in depths of 5.5m.

Bagubaut Point (12° 28'N., 123° 33'E.), located close NE of Pasil Bay, is a bold headland and the only prominent feature on this stretch of coast. The coast between this point and the entrance to Masbate Harbor is steep-to with no reported off-lying dangers.

Masbate Harbor (12° 22'N., 123° 37'E.) is entered between Northwest Point, located about 6 miles SE of Bagubaut Point, and an unnamed point about 0.6 mile SE.

The harbor is well protected from all winds and has sufficient room for maneuvering.

The entrance channel is reduced to a width of about 0.15 mile by steep-to reefs extending from both sides of the entrance, and can usually be distinguished by their light color.

Passage should be attempted only during daylight hours and under favorable conditions.

A reef, which partly dries and is steep-to, extends about 0.4 mile SE from a position on the N shore about 0.75 mile W of the light on Northwest Point.

A narrow spit, as defined by the 5.5m curve, extends 0.3 mile E from the extremity of the drying reef.

The head of the harbor is shallow. Several rivers discharge into the harbor through the mangrove swamps which border its shores. Steep-to reefs, extending 0.4 mile in places, are along the N and W sides of the harbor.

Depths of over 37m are found in the middle of the entrance channel, and depths of over 10.9m are found in the middle of the harbor to a distance of about 1 mile within the entrance. A depth of 17m lies about 0.75 mile SW of the light structure on Northwest Point.

2.86 Masbate (12° 22'N., 123° 37'E.) (World Port Index No. 58620), the capital of Masbate Province, stands on the E side of the harbor, just within the entrance. The capitol building and the provincial hospital are prominent.

The school, which has a metal roof, stands at the E end of the town and is also prominent.

Depths—Limitations.—The main pier for ocean vessels is 180m long with an alongside depth of 9.1m and a width of 10m. Present port facilities can only accommodate 1 vessel at a time due to draft limitation and physical length of wharf.

The largest vessel that can be accommodated is 300m in length, with a maximum draft of 8.5m.

Pilotage.—Pilotage is compulsory and should be requested from the Harbor Pilot Association, Legazpi City, at least 36 hours before arrival. The pilot will board the vessel 1.5 miles NE of the harbor entrance and be aboard a boat displaying a pilot's flag.

Signals.—Typhoon signals are shown from the branch office of the Philippine Weather Bureau.

Anchorage.—Anchorage is available close NE of the harbor entrance, in 69m, sand, with the light bearing 225°, distant 1 mile. Anchorage is also available within the harbor, but this is restricted to emergency or typhoon use.

Directions.—When approaching the entrance to Masbate Harbor, steer for the light bearing 226°.

When 0.5 mile from it, steer for **Bagalejo Point** (12° 22'N., 123° 36'E.), which is prominent and located on the S side of the harbor about 1 mile SSW of the light, bearing 207°. When clear of the entrance, alter course for the pier.

When berthing alongside, it is recommended to berth starboard side-to during the flood current, especially during the Southwest Monsoon (May to September). During the ebb current, vessels should berth port side-to.

2.87 Mobo Bay (12° 21'N., 123° 39'E.), close SE of Masbate Harbor, is entered between Baybay Point, about 1.75 miles ESE of Northwest Point, and Sagausauan Point, about 2.25 miles SE. It is foul and of little importance to navigation.

Baybay Point is fronted by a reef extending as far as 0.25 mile N and NE. Buntud Reef lies in the middle of the entrance to the bay about 0.75 mile ESE of Baybay Point.

Shoal water, extends 0.5 mile NE and E from the E side of Buntud Reef and constitutes a danger to vessels proceeding NW along the coast of Masbate.

Tacu and Mobo Shoals, with depths of 0.9m and 1.4m, lie about 0.35 mile NNW and 0.5 mile W, respectively, of Sagausauan Point.

Shoals and dangers front the S and W sides of the bay as far as 0.5 mile offshore. The Mobo River discharges into the SE part of the bay. Mobo, a small town of little importance, stands on the W side of the river at its mouth.

Small vessels, with local knowledge, can take anchorage in the SE part of the bay, between Mobo Shoal and the mouth of the Mobo River.

Gorda Point (12°20'N., 123°42'E.), about 2 miles SE of Sagausauan Point, is composed of large boulders from which wooded land rises steeply about 75m to a bench and then another 61m to the top of the hills near the shore.

It is prominent from both N and S.

2.88 Uson Bay (12°14'N., 123°47'E.) is entered between Paniqui Point, about 6 miles SSE of Gorda Point, and Tabunan Point, about 2.75 miles E of Paniqui Point.

This small inlet, which is fully exposed to the N, is very narrow in its inner part, but offers some protection to small vessels with local knowledge during the Southwest Monsoon.

Uson, a small village, stands on the E shore of the bay in a position about 2.25 miles SE of Paniqui Point. No supplies of any kind are obtainable. The shores of the bay are bordered by mangroves.

A narrow spit, as defined by the 5.5m curve, extends about 0.75 mile W from Tabunan Point. There is a least depth of 3m at its outer end. A shoal, with a least depth of 8.5m, lies about 1 mile W of Tabunan Point.

The W shore of the bay is fairly steep-to, but the 5.5m curve fronts its head to a distance of about 1.5 miles.

Naro Bay (12°13'N., 123°51'E.), entered between Tabunan Point and Cadulan Point, about 4.5 miles ESE, is clear of dangers and deep in the middle. The bay affords good protection except from the NW.

The town of Dimasalang is on the beach at the head of the bay. No supplies are obtainable. It is connected to the general telegraph system, and there is regular sea communication with other ports.

Cudao (Kudao) Islet is a low rock, 20m high, lying on the edge of a shoal which extends 0.75 mile WSW from Cadulan Point. It is steep-to on its W side.

Vessels can take anchorage almost anywhere in the bay, depending on the direction of the wind. The E side of the outer part of the bay and the head of the bay is to be preferred as the depths are less steep.

2.89 Cadulan Point (12°13'N., 123°52'E.) is an eroded bluff, covered with jungle, with a narrow ledge at its base.

Magcaragit Island (12°16'N., 123°50'E.), 83m high at its S extremity, lies with its N end about 4 miles NW of Cadulan Point.

A shoal, with a depth of 8.5m, was reported to lie about 1 mile N of the N extremity of Magcaragit Island. A shoal, with a depth of 4.5m at its outer end, extends about 0.5 mile E of the E side of the island. Shoals and broken ground extend 1.25 miles NE, E, and 0.5 mile N from the island. A shoal, with a depth of 10.5m, lies about 1 mile NNE of the island.

Deagan Island (12°15'N., 123°51'E.), 30m high, lies about 0.75 mile NW of Cadulan Point. The island is fringed by a narrow reef, and a shoal, as defined by the 10m curve, extends 1.25 miles E from Ponduhan Point, the E extremity of the island.

Dakit Islet, 73m high, and Hamoraon Islet, 61m high, lie in mid-channel between Magcaragit Island and Deagan Island. These islands are very small in extent.

The passage between Deagan Island and Cadulan Point is about 0.75 mile wide, with a least depth of 14.6m in the fairway, but there are shoals on either side which contract the channel to a width of 0.25 mile between the 9.1m line.

Directions.—Vessels bound E through the above passage should give the S extremity of Deagan Island a berth of about 0.25 mile and then steer a course of 068° for 2 miles. The course should then be set as desired for destination.

Vessels bound W through the passage should steer a course of 248° in mid-channel, passing about 0.25 mile S of the S extremity of the island. The course should then be altered gradually to the NW, passing in mid-channel between the W sides of the islands that extend about 4 miles NW from Cadulan Point and the coast of Masbate.

2.90 Port Cataingan (11°57'N., 124°02'E.) is entered between Dumurug Point, about 20 miles SE of Cadulan Point, and Lumbuhan Point, about 1.25 miles SW.

Dumurug Point is fringed by a reef which extends about 0.2 mile S, with depths of less than 5.5m. The W side of the entrance is rather steep-to, with the 20m curve lying close offshore. Baslay Islet lies about 0.75 mile SSE of Dumurug Point.

A shoal spit extends about 1.25 miles SSE from the islet. The N and E sides of the islet are fronted by shoals as far as 0.15 mile offshore.

Baslay Reef, with a least depth of 1.8m, lies on this spit in a position about 0.5 mile S of the islet.

Ordonez Bank, with a least depth of 16.5m, lies in the middle of the entrance in a position about 0.8 mile SW of Dumurug Point.

There are depths of over 18.3m in the approaches to the port and in its outer part. It is 1.25 miles wide at the entrance, deep and clear of dangers in the middle part, open SE, and has good holding ground.

The shores of the port are fringed with reefs and shoals which extend from 0.125 mile to 0.3 mile offshore.

A detached shoal, with a least depth of 0.3m, lies on the E side of the fairway about 0.65 mile WNW of Dumurug Point.

A detached shoal, with a least depth of 0.3m, and a detached shoal, with a rock awash, lie about 0.25 mile off the E shore about 1.5 miles NW and 2.25 miles NW, respectively, of Dumurug Point.

Cataingan, a small town, stands on the W side of the inlet, near its head. The town has a post office and radio communications.

The head of the port is fronted by drying mud flats extending about 0.4 mile offshore.

The 10m curve fronts the head of the port at a distance of about 1 mile, and the 20m curve fronts its head at a distance of 2.5 miles.

The Tetas de Cataingan, two rounded hills, 280m and 284m high, are the most prominent landmarks for vessels entering the port. They lie close together about 3 miles NW of Cataingan.

Anchorage.—Vessels can take protected anchorage near the head of the port about 0.5 mile SE of the town of Cataingan, in depths of from 7 to 9m.

Another recommended anchorage is in the bight on the W side of the port, about 0.25 mile NW of Mintac Point, located about 1.75 miles WNW of Dumurug Point.

2.91 Bugtung Island (11°53'N., 124°05'E.), 104m high, lies about 4.5 miles SSE of Dumurug Point. It is fringed by a

narrow reef. A prominent hill, 100m high, stands at the SE extremity of the island. A small village is on the W shore.

Shoals extend 0.5 mile N and 1 mile S from the island. A stranded wreck lies off the coast of Masbate, 3.5 miles S of Dumurug Point.

Balanguingue Island (11˚ 50'N., 124˚ 06'E.), 33m high, lies about 7.5 miles SSE of Dumurug Point. Shoal water extends about 0.25 mile NW from its N side.

The channel between these islands and Masbate is deep and clear. A shoal, with a depth of 6.4m, lies about 1 mile NNW of Balanguingue Island.

Caduruan Point (11˚ 43'N., 124˚ 04'E.), the SE extremity of Masbate, consists of rocky bluffs, separated by short stretches of sandy beach. The hills within the point rise to a height of about 91m and are covered with trees and brushwood, with occasional clearings near the coast. Shoal water extends about 0.3 mile S from the point, outside of which it is clear, with a depth of 14.6m close-to. The point is marked by a light.

2.92 Masbate Pass (12˚ 30'N., 123˚ 35'E.) is very deep in mid-channel and has great depths lying close off the projecting points of Masbate and Ticao Island, on either side of the pass.

The various channels, which connect the S part of Masbate Pass with the SW part of Ticao Pass, are for the most part narrow and deep in the fairway, but the currents run strongly through them.

Of these, Black Rock Pass, with depths of over 18.3m in the fairway, is recommended.

Vessels should keep in mid-channel when passing through Masbate Pass. Vessels proceeding eastbound into Ticao Pass may use either of the channels of Black Rock Pass or the channel between Deagan Island and Cadulan Point.

Ticao Island

2.93 Ticao Island (12˚ 30'N., 123˚ 43'E.), separated from Luzon by Ticao Pass, is mountainous and thinly populated. The W coast is steep and rugged with the 20m curve lying close offshore.

Ticao Island—West Coast

2.94 Bagababoy Island (12˚ 42'N., 123˚ 36'E.), 97m high, wooded and steep-to, extends about 1.25 miles NW from a position close NW of Nunun Point. The E side of the island is irregular and there are several high vertical cliffs on the W side. A shoal, with a least depth of 7.3m, lies about 0.4 mile ENE of the N extremity of the island.

Marcos Pass lies between the SE extremity of Bagababoy Island and Nunun Point. The pass is very narrow with a least depth of 12.8m in the fairway. A shoal spit extends 1.25 miles N from Nunun Point with depths of 9 to 13m.

San Miguel Island (12˚ 43'N., 123˚ 36'E.), 80m high, lies about 0.25 mile NW of Bagababoy Island. The N part of the island is nearly divided into two parts by a low sand spit. A small islet, 49m high, lies in mid-channel between San Miguel Island and Bagababoy Island.

A shoal, with a least depth of 12.8m, lies about 0.3 mile NW of San Miguel Island.

A light marks the NW extremity of San Miguel Island.

Vessels should give these islands a good berth as the tidal currents are very strong in their vicinity.

2.95 Port San Miguel (12˚ 40'N., 123˚ 35'E.) is entered between Tabunan Point, located 1.5 miles SW of Nunun Point, and Northwest Point, about 2.25 miles farther SW.

Faltaban Island, 66m high, lies about 0.25 mile W of Tabunan Point. The shores of the island are steep-to with a vertical cliff on its NW side. It is separated from the coast of Ticao Island by a deep channel about 0.25 mile wide.

Yeso Island, 57m high, lies about 0.5 mile S of Tabunan Point and close off the E shore. It is covered with brush and has very jagged underworn shores. The W side of the island is steep-to. A reef connects the E side to the coast of Ticao Island.

Catpatin Island, narrow, densely wooded, and 82m high, lies about 0.15 mile N of Northwest Point. Its channel side is steep-to and its W side is fringed by shoals to a distance of about 91m. The W side has bold, vertical cliffs about 45m high.

Mount Pandan, 233m high and oval shaped, is on the peninsula S of Northwest Point and forms an excellent landmark.

Foul ground extends about 1 mile N and NE from a position about 1 mile SSE of Northwest Point. The very small Puro Islets, reefs that bare, and sunken rocks, lie on this foul ground. A narrow channel, with a least depth of 9.6m, leads between the SE edge of this foul ground and the reef fringing the NW side of the peninsula extending about 0.75 mile N from the head of the port.

Pilar Bay, the SW arm of the port, is entered between the E slope of Mount Pandan and the W side of the peninsula. The shores of the bay are fringed with mangroves. The bay is shoal, with the exception of the above mentioned channel, which leads into its outer part.

The SE arm of the port, which lies E of the peninsula, is irregular in shape and narrow. The channel abreast Mapusa Point, the NE extremity of the peninsula, is only about 183m wide between the reef extending 0.15 mile off the point and about 183m off the shore on the E side of the entrance.

The channel, with a least depth of 10.5m, is about 91m wide off the village of Pandan, located about 0.3 mile SE of Mapusa Point. The shores of the port are fringed with reef and shoals.

Small vessels with local knowledge can take excellent typhoon anchorage in mid-channel SE of Pandan, in depths of 10.9m, mud. There is very little swinging room, but lines can be made fast ashore on both sides. The reefs in the head of the bay are hard to see on account of muddy water, and vessels should not go S of the recommended anchorage.

2.96 Togoron Bay (12˚ 36'N., 123˚ 36'E.), entered about 3.5 miles SSE of Northwest Point, indents the coast to a distance of about 1 mile in a NE direction. The bay is fringed with shoals and is fully exposed to S or W winds.

There is very little swinging room, and the bay is not recommended as an anchorage. A shoal, with a least depth of 8.5m, lies about 0.2 mile S of the W entrance point.

Bujo Island, 33m high, lies about 1.25 miles S of the entrance to Togoron Bay. A channel, with a depth of 4.5m, lies between the island and the coast of Ticao.

The remainder of the W coast of Ticao Island, between the S entrance point of Togoron Bay and San Rafael Point, about 18

miles SE, is steep and rugged, with the 20m curve lying close offshore. A building, located about 7 miles NW of San Rafael Point, is a conspicuous mark on this shore.

Tatus Island, 24m high, lies about 0.5 mile W of San Rafael Point. A channel, with a depth of 20m, lies between the island and the point.

Ticao Island—East Coast

2.97 Taclogan Bay (12°37'N., 123°43'E.) is entered between an unnamed point, located about 7 miles SE of Nunun Point, and Tasiran Point, about 0.75 mile ESE. The bay is open to the NE, but the reefs protect it from the sea.

A reef, with a least depth of 0.9m, lies in the middle of the entrance to the bay about 0.5 mile NW of Tasiran Point.

The entrance channel, which is about 0.125 mile wide, with depths of over 18.3m in the fairway, lies between the SE side of the above reef and the NW side of a shoal, with depths of less than 5.5m, extending about 0.25 mile N from Tasiran Point.

There is a secondary channel, about 183m wide with a least depth of 6.7m, lying between the W side of the mid-channel reef and the shoal spit extending 0.2 mile E from the W entrance point.

The W side of the bay is fronted by reefs, which bare at LW, as far as 0.125 mile E. The 10m curve lies about 91m E of the outer edge of the reefs.

The S shore of the bay is fringed by reefs as far as 0.15 mile N. A shoal, with a depth of 2.1m at its outer end, extends about 0.25 mile NNW, from a position about 0.5 mile WSW of Tasiran Point.

A very narrow channel leads W from the head of the bay into a basin in a shallow lagoon.

The lagoon extends about 1 mile S, but there is only a very small area near the entrance which provides secure anchorage for small craft.

Rizal (12°37'N., 123°43'E.), a small village, stands on the S shore of the bay in a position about 1 mile WSW of Tasiran Point.

Anchorage.—Small vessels with local knowledge can take anchorage in the middle of the bay about 0.4 mile N of the village of Rizal, in depths of from 18 to 22m, mud.

The holding ground is good, but the swinging room is very limited. The channel leading to the anchorage area is unmarked, and vessels should attempt entry only under favorable conditions.

Caution.—A 14m patch lies about 3.25 miles NNE of Tasiran Point.

2.98 Port San Jacinto (12°34'N., 123°44'E.) is entered between San Cosme Point, located about 2.25 miles S of Tasiran Point, and San Jose Point, about 0.5 mile SSE.

San Jacinto, located on the S side of the entrance to the bay, is the most important town on the island of Ticao. It may be identified by several prominent, grass covered hills, from 61 to 122m high, located behind the town.

The town is connected to the general telegraph system by radio. San Jacinto Light is no longer shown from a concrete tower, 8m high, standing on San Jose Point.

There are depths of over 18.3m in the fairway of the entrance channel, and depths of over 9.1m in the middle of the outer part of the port.

Shoal water, as defined by the 9.1m curve, extends 183m S and 0.5 mile E from San Cosme Point, and 0.15 mile N and 0.35 mile ESE from San Jose Point. The entrance channel, between the above curves, has a least width of about 0.2 mile.

The N shore of the bay W of San Cosme Point, is fronted by shoal water extending as far as 0.25 mile offshore.

The S shore of the bay, for about 0.6 mile W of San Jose Point, is fronted by shoals, as defined by the 9.1m curve, extending as far as 0.15 mile N. The head of the bay is shallow. Drying mud flats, with reefs at their outer end, front the head of the bay as far as 0.25 mile offshore.

Anchorage.—The port affords secure anchorage, well protected from all but E winds. The holding ground is good and the swinging room is ample for small vessels.

Vessels can take anchorage in a position about 0.15 mile NW of San Jose Point, in depths of from 7 to 18m.

Vessels, intending to anchor inside the bay, should enter midway between San Cosme Point and the town on a 262° course, and anchor, in 13 to 18m, with San Cosme Point bearing about 000°.

Caution.—A 12.8m patch lies about 0.8 mile SE of San Jacinto Light.

2.99 Ticao Bay (12°29'N., 123°46'E.), a small cove, is entered between Lagan Point, located about 5 miles SSE of San Jose Point, and the N side of a small rounded peninsula about 0.75 mile S.

The town of San Fernando stands at the head of the bay in a position about 0.5 mile SW of Lagan Point. The town has a post office and telegraph facilities.

Vessels should approach the bay with the town bearing 258° and anchor, in 11 to 22m, when about 0.5 mile from the head of the bay. This anchorage is practically an open roadstead, as it is protected only to the W.

Batuan Bay (12°25'N., 123°47'E.), a narrow cove, is entered between Aricomo Point, about 4 miles S of Ticao Bay, and an unnamed point about 0.5 mile SSE. Batuan, a small town, stands on the N side of the entrance.

A reef extends about 0.3 mile E from Aricomo Point. Another reef extends about 0.25 mile NE from the S entrance point of the bay. The edge of this reef is usually marked by stakes.

Small vessels with local knowledge can take protected anchorage in Batuan Bay. Vessels should keep from 50 to 91m N of the stakes, and anchor, in 6 to 7m, mud, S of Batuan. In case the stakes are not in place, vessels should steer 225° for a conical hill on the S shore, and alter course to 270° when a depth of 9.1m is obtained.

Biton Bay (12°23'N., 123°47'E.), entered about 1.75 miles S of Batuan Bay, is foul and encumbered with reefs and shoals.

A shoal extends over 1 mile E from the coast between Biton Bay and San Rafael Point, the S extremity of Ticao Island. A shoal, with a depth of 4.9m, lies about 1.25 miles NE of San Rafael Point.

Ticao Pass (12°40'N., 123°45'E.), lying between Ticao Island and the coast of Luzon, is very deep and clear of dangers with the exception of the 14m shoal which lies about 12°40'N,

123˚45'E. This shoal lies about 3.25 miles NE of Tasiran Point. Strong currents are present in Ticao Pass.

2.100 Matabao Island (12˚19'N., 123˚48'E.), 53m high, extends a little over 1.5 miles SSE from a position about 0.5 mile SSE of San Rafael Point. The S and W sides of the island are steep-to, but a shoal extends about 1.5 miles NE from its NE side.

Matabao Pass, a narrow channel with a least depth of 20m in the fairway, lies between the shoals extending E from San Rafael Point and the shoal extending NE from Matabao Island. The passage is less than 0.25 mile wide and is not recommended. A light marks Argos Point, the S extremity of Matabao Island.

Black Rock Pass (12˚18'N., 123˚49'E.), lying between Matabao Island and Magcaragit Island, about 2.75 miles SSE, is divided into two channels by Black Rock and its surrounding shoals. The rock, which dries about 1.5m, is located about 1.25 miles SSE of Argos Point. A beacon marks Black Rock.

It is difficult to identify and appears as a black log from a short distance off. Both channels are deep. The tidal currents in this pass set E and W reaching about 5 knots.

Cross channel currents cause dangerous tide rips in the E approach.

The tidal currents are reported to be somewhat weaker in the channel between Deagan Island and Cadulan Point.

A shoal, with a depth of 7.3m, extends about 0.25 mile SE from the S extremity of Matabao Island.

A shoal, with a depth of 8.7m, was reported to lie in the S channel about 1 mile N of the N extremity of Magcaragit Island.

Directions.—Vessels bound E, passing between Matabao Island and Black Rock, should make the approach with the light on Argos Point bearing 070˚.

When not more than 1 mile from the light structure on the above bearing, the course should be altered so as to make good a course of 090˚, making due allowance for the tidal current which has a strong tendency to set onto Black Rock during the ebb current.

This course should be held until **Dakit Islet** (12˚15'N., 123˚50'E.), which is conspicuous, bears 180˚, at which time all dangers will have been passed and the course may be set for destination.

Vessels bound W, through the above mentioned N channel of Black Rock Pass, should make the approach with the light on Argos Point bearing 280˚.

This course should be held until Dakit Islet bears 180˚, at which time the course should be altered to 270˚. This course should be held until the light on Argos Point is well on the starboard quarter, at which time all dangers will have been cleared and the course may be altered for destination.

Vessels bound E, passing between Black Rock and Magcaragit Island, should keep in mid-channel and pass about 0.75 mile N of Magcaragit Island. When the middle of the cliff on Deagan Island bears 180˚, all dangers will have been cleared and vessels may proceed to their destination.

Vessels bound W, through the above mentioned S channel of Black Rock Pass, should keep in mid-channel and pass about 0.75 mile N of Magcaragit Island. When the light on Argos Point bears 000˚ all dangers will have been cleared and vessels may proceed to destination.

San Bernardino Strait

2.101 San Bernardino Strait (12˚35'N., 124˚12'E.), which separates the SE extremity of Luzon from the NW part of Samar, is an important passage, as it is one of the routes taken by vessels from the Pacific bound to Manila or Cebu. The strait is wide, deep, and free from the dangers in the fairway. Heavy seas and tide-rips are encountered here during the Northeast Monsoon.

The channels E and W of San Bernardino Islands are 3 and 7 miles wide, respectively, with depths of 55 to 128m.

Tidal currents in the strait attain a rate of from 4 to 8 knots in the narrow passages between the islands and cause strong whirlpools and eddies among them. After passing through the strait, the currents spread out on either side and lose their force.

San Bernardino Islands (12˚45'N., 124˚17'E.) are two small islets lying in the N entrance to San Bernardino Strait. They divide the outer part of the strait into two wide and deep channels, both clear of the dangers in the fairway. The S and larger island is 48m high and sparsely wooded, as compared to the N island, which is very rugged, bare of vegetation, and 30m high. Two large rocks lie about 0.2 mile E of the S island. The N rock is 5.2m high and the S rock is 6.4m high.

These islands lie on the SW end of the bank extending about 7 miles NE, and surrounded by much deeper water.

A detached shoal, with a depth of 7.9m, lies about 0.75 mile E of the S island. An obstruction has been reported about 1.5 miles ESE of the same island. A rock, with a depth of 7.9m, lies about 1 mile NNW of the S island.

Depths of 12m and 13m lie about 5 miles NNE of the islands.

San Bernadino Islands Light, a round masonry tower, 15m high, and dwelling stands on the summit of the S island.

San Bernardino Strait—West Side

2.102 Langao Point (12˚32'N., 124˚02'E.), on the S side of Luzon, lies 4.5 miles ESE of Tagiran Point. There are several small inlets along this coast which provide protection to small craft with local knowledge. The point is sloping, grass-covered, 6.1m high at its outer end, and composed of a dark red colored conglomerate.

Hamorauan Point (12˚32'N., 124˚03'E.), lying about 1 mile ENE of Langao Point, is a bold reddish-brown bluff, 21m high, with a steep timbered slope rising above it. The low ground on either side makes the point stand out prominently.

Colasi Point (12˚32'N., 124˚05'E.) lies 2 miles E of Hamoravan Point.

Hamorauan Reef (12˚32'N., 124˚04'E.), nearly 0.5 mile of white sand, with a least depth of 1.8m, lies on the N side of the SW entrance to Ticlin Strait, about 0.75 mile WSW of Colasi Point.

2.103 Ticlin Strait (12˚33'N., 124˚06'E.) is the narrow channel between the coast of Luzon and the NW sides of Ticlin Island, Juac Island, and Calintaan Island. The strait is deep and

San Bernadino Islands Light

clear of dangers in the fairway with a least navigable width of 0.2 mile.

This passage is not considered safe for large vessels because of the strong tidal currents and eddies in it.

Ticlin Strait is often used for coastal vessels bound to or from ports on the E coast of Luzon from San Bernardino Strait.

Calintaan Island (12° 32'N., 124° 05'E.), 83m high and Juac Island, 44m high, extend about 2.75 miles NE from a point about 1 mile SE of Colasi Point.

Juac Channel, which separates Juac and Calintaan Islands, is deep, but narrow and of little use. Both islands are covered with jungles and trees. Their shores are indented by lagoons and fringed with mangroves.

The inner shores are low and have coral beaches. The outer shores consist, alternately, of rocky bluffs and coral beaches. Both islands are fringed by narrow reefs. Apari Rock, 3m high, lies 183m off the SE side of Calintaan Island, and about 0.75 mile NE of Calayuan Point, the S extremity of the island.

Calantas Rock (12° 31'N., 124° 05'E.), marked by a light, consists of a pile of small rounded rocks, 1.5m high, located about 1 mile SW of Calayuan Point. A shoal extends 0.35 mile W, 0.25 mile E, and about 0.75 mile SE and S from the rock.

A shoal, with a least depth of 8.5m, lies about 0.75 mile NW of Calantas Rock.

Ticlin Island (12° 35'N., 124° 08'E.), the N island of the group, is 56m high and lies about 1.25 miles NE of Juac Island. A shoal, with depths of less than 9.1m, extends about 0.9 mile SSW from Ticlin Island. A rock awash, near the outer end of this shoal.

Foul ground, with a rock, 1.8m high at its outer edge, extends about 0.25 mile E from the E side of the island, and shoals extend about the same distance from the W side. Broken ground extends as far as 3 miles NNW from Ticlin Island, with depths of 12.8 to 18.3m.

Magtimua Rock, about 0.9m high, lies about 0.6 mile SE of Ticlin Island.

Caution.—The passage between Ticlin Island and Juac Island is obstructed by rocks and is not safe.

The W shore of Ticlin Strait, between Colasi Point and **Padang Point** (12° 36'N., 124° 06'E.), 4 miles NNE, is composed of broken coral covered with mangroves, and fringed by reefs which extend up to 0.35 mile offshore. The least navigable width of the strait is 0.15 mile, between Caluntaan Island and **Burungan Island** (12° 33'N., 124° 05'E.).

Directions.—A mid-channel course should be steered through the N part of the strait, keeping well W of the dangers between the Ticlin Island and Juac Island. Having cleared these dangers vessels should bring the sharp conical summit of Ticlin Island to bear 040°, astern.

This range will lead through the narrow part of the strait in mid-channel. When Calantas Rock bears 170° the course should be altered to 270°, with Calayuan Point astern. This course, run for a distance of about 6.5 miles, leads to the channel through Ticao Pass.

Caution.—Mariners are cautioned that a W set occurs in the strait abreast of Burungan Island when the ebb current is running.

2.104 Matnog Bay (12°35'N., 124°06'E.), lying about 1 mile inside the N entrance to Ticlin Strait, is entered between Padang Point and Mantay Point, about 1.5 miles SW. The bay is fringed by a narrow reef, with the 9.1m curve lying about 0.25 mile from its head.

A reef, with a rock awash at its outer end, extends about 0.35 mile NNE from Porong Island, located about 0.35 mile SE of Mantay Point. A large shoal, with depths of from 10 to 15m, lies in the outer entrance to Matnog Bay.

Matnog (12°35'N., 124°05'E.), a port of call for coastal shipping, stands on the W shore of the bay. It can be readily identified by the white iron roof of the church. A short concrete causeway, with a wooden landing platform at its head, extends ESE from the vicinity of the church.

The diurnal range of the tide at Matnog is about 0.8m. The tidal currents in Matnog Bay are weak.

Small vessels can take anchorage in Matnog Bay, in depths of 5.5m, about 0.25 mile from the beach. Larger vessels can anchor in the middle of the bay in depths of 14.6m.

Vessels wishing to enter Matnog Bay may bring the sharp conical summit on Ticlin Island astern, bearing 090°, and anchor according to draft.

Balusingan Bay (12°38'N., 124°06'E.) is entered between Padang Point and Pacahan Point, about 5 miles NNE. The shore of the bay is fringed by a narrow reef.

The town of Santa Magdalena stands on the N shore of the bay. Vessels can take anchorage, about 0.5 to 0.75 mile offshore, in depths of 18 to 27m, sand. This anchorage is fully exposed to the E, but some protection is afforded from W and SW winds.

2.105 Bulusan (12°45'N., 124°08'E.), a small town, is located about 5 miles N of Pacahan Point. There is a telegraphic office in the town.

Vessels can take anchorage off a break in the coastal reef abreast of Bulusan, with the church at that town bearing 300° and Tang Point bearing 010°, in depths of from 22 to 26m. This anchorage is an open roadstead, fully exposed to the E. The holding ground is not good and there is considerable tidal current in the vicinity.

Bulusan Volcano, 1,559m high and active, stands about 5 miles WNW of Bulusan. When not obscured by clouds the volcano is visible over 60 miles. Sharp Peak, located about 1.25 miles NE of the volcano, is 1,215m high, but appears sharp only from the E.

Port Gubat (12°55'N., 124°08'E.), entered between Rasa Point, 9 miles N of Bulusan, and Dancalan Point, about 2 miles further N, is formed by an opening in the coastal reef about 1 mile wide. This coastal reef extends about 1 mile from the shore in places.

Canauay Reef, which dries, extends about 0.8 mile SSE and 0.5 mile E from Dancalan Point.

The port consists of two bays divided by Penuntignan Point, located about 1.75 miles SSW of Dancalan Point.

A reef extends about 0.2 mile E from the point. A shoal, with a least depth of 0.3m, extends about 0.125 mile NE from the NE edge of this reef.

The S bay is the larger, but it is seldom used as it is open to the NE and has poor holding ground.

The N bay is sheltered from the sea by reefs, but there is only a small area in its outer entrance with suitable depths. The N part of the bay is very shallow.

Shoals, with depths of from 6 to 7m, lie in the entrance to the N bay, about 0.5 mile ENE of Penuntignan Point.

A reef, which dries, extends about 0.5 mile N and over 0.5 mile E from Rasa Point.

A detached shoal, with a least depth of 8.7m, lies on the S side of the entrance to the port about 1 mile NNE of Rasa Point.

The 20m curve lies just within the entrance to the port between the reefs. The 10m curve lies up to 0.75 mile from the head of the N and S bays. Detached shoals, with depths of from 2 to 4m, lie about 0.4 mile E of the W shore of the S bay.

The town of Gubat stands on the W shore of the bay about 1.25 miles SW of Dancalan Point. Copra and hemp are exported and loaded from lighters. Cargo operations are slow and often delayed for days whenever there is any kind of swell.

There are no provisions, water, or repair facilities in the town. There is a post and telegraph office in Gubat. The nearest hospital facilities are at Sorsogon, about 8 miles WNW.

A light marks the N part of Gubat. A beacon, situated on the edge of the shore reef on the W side of the N bay, about 0.45 mile NNW of the above point.

Small vessels can take anchorage in the N bay with the beacon bearing 298°, distant 0.3 mile, in depths of from 7 to 9m, mud. This anchorage is protected by reefs, but the swinging room is very limited.

Larger vessels generally anchor about 0.5 mile NW of Rasa Point in the S bay, in depths of 13 to 15m. This anchorage is fully exposed to the NE and a heavy swell sometimes rolls in. It should be noted that the holding ground is quite poor and the anchorage is untenable during the Northeast Monsoon.

The coast between Dancalan Point and Bingay Point, about 9 miles NNE, is fringed by a drying reef extending from 0.75 mile to 1.75 miles offshore. The coastal reef is steep-to within 0.25 mile of its outer edge and can generally be identified by the line of heavy breakers.

Bingay Point (13°04'N., 124°11'E.), the N entrance point of the strait, is low, rounding, and wooded. It is fringed by a reef partly bare at LW and about 0.25 mile wide N and about 1.5 miles E. The reefs are well defined and steep-to.

Bingay Island is a rock, 4.5m high, lying about 0.4 mile E of Bingay Point.

A stranded wreck lies on the edge of the reef, 2 miles ESE of Bingay Point.

Samar—North Coast

2.106 Samar (12°00'N., 125°05'E.) is the third largest of the Philippine Islands. It is about 136 miles long and has a greatest width of 51 miles. The island is moderately high, densely wooded, and well watered. It is sparsely populated, and only a small part is cultivated. The principal exports are hemp and copra.

The N coast of Samar, which forms the S side of the E approach to San Bernardino Strait, is fronted by islands and shoals extending as far as 16 miles offshore. This coast is exposed to the full force of the Northeast Monsoon which

blows at times with the force of a gale accompanied with much rain and a very heavy sea.

During the Northeast Monsoon, which occurs from November to the early part of March, no safe anchorage can be had between **Port Palapage** (12°40'N., 125°01'E.) and Biri Channel, about 39 miles W. It is frequently impossible to communicate with the towns of **Catarman** (12°30'N., 124°38'E.), and Bobon, about 5 miles WNW.

Oacan Point (12°35'N., 125°09'E.), located about 1 mile SE of the NE extremity of Samar, is low and fringed by a coral reef extending about 0.5 mile ENE of the point.

The land rises steeply SE to the summit of Cape Espiritu Santo, lying about 2.5 miles SE, and is reported to give a good radar return up to 40 miles.

2.107 Bacan Island (12°36'N., 125°09'E.) is connected by a reef to the NE extremity of Samar. The island is generally low and wooded, except near the center, where there is a tree-covered hill, 51m high. The island is fringed by reefs which extend about 0.5 mile offshore.

A shoal, with a least depth of 4.1m, lies about 0.75 mile NW of the N end of Bacan Island.

Reefs, with depths of 7.3m and 9.1m, lie about 2 miles N and 1.25 miles NE, respectively, of the same extremity.

The water in this vicinity is very clear and the bottom can frequently be seen in a depth of 18.3m.

Palahan Islet (12°35'N., 125°08'E.) lies 1 mile WSW of the S extremity of Bacan Island. Sunken rocks and foul ground lie between it and the coast of Samar, about 0.5 mile S. Reefs extend about 0.25 mile N from the N side of the islet.

A rock, which is bare 0.6m at LW and a shoal, with a depth of 1.8m, are about 0.4 mile N of Palahan Islet, in the middle of the entrance to the small bay between Bacan and Palahan Islands.

The coast, between the NE extremity of Samar and an unnamed point about 2.75 miles W, is indented to a distance of about 1 mile, forming a large bay which is fully open to the N. The latter point is reef fringed as far as 0.5 mile N and NE.

2.108 Port Palapag (12°40'N., 125°01'E.) is formed by the channel that separates Cahayagan Island and Laoang Island from Batag Island to the E, and by the channel which separates the latter island from the coast of Samar to the S. The port is partly sheltered from all winds and serves as a good harbor of refuge.

The N entrance, between Cahayagan Island and Batag Island, is about 0.65 mile wide and has depths of over 18.3m. The E entrance, between Batag Island and Samar, is encumbered with several rocky shoals and should be navigated only by small vessels with local knowledge.

The channel between Cahayagan Island and Laoang Island has a least charted depth of 6.8m, but is extremely narrow and the tidal currents set strongly through it. There are numerous shoal patches within both entrances to the port.

Cahayagan Island is moderately high and heavily wooded. A narrow reef, on which stand several small islets, extends about 1 mile NW from the NW end of the island.

These islets, known as the Macan Islets, are covered with brushwood. The highest islet has an elevation of 6.4m.

A reef, with a charted depth of 3.6m over its outer end, lies parallel with the reef on which the Macan Islets lie, about 0.3 mile SW of its outer end.

The remainder of the island is fringed by a narrow reef on its E and S sides and by a reef which extends 0.4 mile N from its N side and 0.25 mile W from its W side.

Laoang Island, 65m high in its S end, is heavily wooded. It is separated from the coast of Samar by the Catubig River and the Laoang Channel. The W side of the island is fringed by a reef extending about 0.4 mile offshore.

Shoal water, as defined by the 9.1m curve, extends as far as 0.5 mile E, from the E side of the N part of the island, and as far as 1 mile N, from the N side of the S part of the island. Calapan Islet, small and reef fringed, lies within the above curve in a position about 2 miles SSE of the SE extremity of Cahayagan Island.

A light is shown from **Ipil Point** (12°35'N., 125°00'E.), on the W side of Laoang Island.

Two reefs, with depths of 4.2m and 8.5m lie about 1.1 miles and 1.25 miles, respectively, SE of the SE extremity of Cahayagan Island.

Batag Island, the largest and E of the islands forming Port Palapag, is 67m high and heavily wooded. Reefs extend about 0.6 mile W from the NW side of the island and form the E side of the N entrance to the port. The W side of the island between Leung Point and an unnamed point, about 2 miles S, is indented to a distance of about 1.5 miles, but is foul throughout.

A light on the summit of Batag Island, 1.75 miles S of Atalaya Point, the N extremity of the island. Dwelling houses stand close S of the tower. Two stranded wrecks lie on the NE coast of Batag Island.

Batag Island is reported to give a good radar return up to a distance of 28 miles.

Anchorage.—Moderate-sized vessels, with local knowledge, can take anchorage about 0.25 mile W of the SE extremity of Cahayagan Island, in a depth of 9.1m, mud, or about 0.3 mile SE of Leung Point, in a depth of 10.9m.

Larger vessels can anchor about 0.5 mile SE of the SE extremity of Cahayagan Island, in a depth of 14.6m, or farther S in mid-channel between the SW extremity of Batag Island and Calapan Island.

Vessels using the latter anchorage must exercise caution to avoid the previously-mentioned 4.2m and 8.5m reefs.

Vessels entering Port Palapag from N should favor the W side of the channel, as the reefs fringing Cahayagan Island do not extend as far out as those fringing the NW side of Batag Island. The SE extremity of Cahayagan Island and Leung Point are steep-to, and may be passed fairly close.

2.109 Laoang Bay (12°35'N., 124°59'E.) is entered between the N extremity of Laoang Island and Livas Point, about 4 miles SSW. The main branch of the Catubig River discharges into the SE corner of the bay, widening at the mouth and forming Laoang Harbor.

The E branch, known as Palapag Channel, leads E into the head of Port Palapag.

This passage is used by small craft with local knowledge.

The W shore of Laoang Bay is fringed by a reef and foul ground extending about 0.3 mile offshore.

A conspicuous house stands in the village of Burabud, at the mouth of the Burabud River, about 2.25 miles SSE of Livas Point.

The depths in the bay decrease regularly from 18.3m at the outer entrance to 9.1m about 2 miles from the head.

Detached shoals, with depths of 3 and 3.9m lie about 0.5 and 0.8 mile ESE, respectively, of Livas Point.

A shoal, with depths of 2.7 to 3.4m, lies about 1 mile NNE of the conspicuous house in Burabud.

A rock, with a depth of 0.9m, and a shoal, with a depth of 1.8m lie 0.6 mile N and ENE, respectively, of the conspicuous house.

2.110 Laoang (12° 34'N., 125° 01'E.) (World Port Index No. 58630), the principal port of N Samar, stands on the N side of the mouth of the Catubig River. It is a regular port of call for inter-island shipping. Considerable quantities of hemp and copra are exported.

Laoang Harbor is only 137m wide with depths of over 3.7m. Rocky patches extend 0.6 mile W from Maculmacul Point, the N entrance point of the river, and form the N side of the channel into the harbor. A drying reef extends 0.3 mile WNW from the S entrance point.

Shoals, with depths of 1.8 and 1.2m lie about 0.3 mile and 0.6 mile W, respectively, of Maculmacul Point.

On entering the harbor there are sand bars on the S side of the channel, and on the N side inside the line of the end of the wharfs are reefs. A submarine cable crosses the Catubig River from Rawis Point, the S entrance point of the river, to the town of Laoang.

Daranasan Island, located between Laoang Island and Samar, is low, wooded, and formed by the delta of the Catubig River.

Anchorage.—Vessels can take anchorage between Livas Point and Laoang Island, in depths of 9 to 13m, mud. The anchorage is sheltered from all winds except those between N and W.

2.111 Livas Point (12° 35'N., 124° 57'E.), the W side of the entrance to Laoang Bay, is low and wooded. Reefs and foul ground extend about 1 mile W from the W side of Livas Point.

An extensive reef, which dries, lies with its NW extremity about 1.25 miles NW of the point. There are some rocks about 0.6m high on this reef which is connected to the point by foul ground. Reefs and foul ground extend about 0.5 mile N and NE of Livas Point.

A shoal, with a depth of 7m, lies about 0.2 mile ESE of the NE extremity of the reef.

Pambuhan (12° 34'N., 124° 56'E.) is located at the mouth of the Pambuhan River about 2 miles SW of Livas Point. The church and red-roofed buildings in the town are prominent. The 9.1m curve fronts the town as far as 0.5 mile offshore.

Vessels can take anchorage about 0.5 mile N of the church, in depths of 10.9m, sand. To approach the anchorage, vessels should steer for the church bearing 181°, and when about 3 miles distant, anchor according to draft.

Villalobos Reef (12° 40'N., 124° 55'E.), with a least depth of 7.6m, lies about 6.25 miles N of the church at Pambuhan. It is about 0.5 mile in extent and the sea breaks heavily over it during the Northeast Monsoon.

2.112 Oot Point (12° 35'N., 124° 51'E.), located about 5.75 miles W of Livas Point, is a low, narrow peninsula extending about 2.25 miles NW from the coast.

A mangrove swamp lies at the extremity of the peninsula which is bordered by reefs and foul ground extending as far as 0.4 mile offshore.

Bantayan Bay (12° 33'N., 124° 50'E.), fully exposed to the N, indents the coast to a distance of about 2.25 miles betwen Oot Point and Bugko Point, about 4 miles SW. The latter point is fringed by a drying reef to a distance of about 0.5 mile N. There are no dangers in the bay, and the water shoals gradually to the 10m curve which lies close offshore. The villages of Laoangan and Bantayan stand on the shores of this bay.

Cajoagan Island (12° 37'N., 124° 49'E.), small in extent and reef fringed, lies about 3 miles NW of Oot Point. Shoals extend 1 mile NW and 0.5 mile E from the island.

Catarman (12° 30'N., 124° 38'E.), a small town and a port of call for coastal shipping, stands on the W bank of the Catarman River about 9.5 miles WSW of Bugko Point. It stands about 0.5 mile inland and is nearly obscured by trees, only the roof tops being visible from seaward. The town has a radiotelegraph office.

The village of Cawayan (Cauayan) stands on the E side of the mouth of the above river. Two partly drying reefs extend about 0.3 mile N from Cawayan, forming an inlet where small boats may land. Maguran Reef, a large coral reef bare at LW, lies just N of this inlet and partially protects it from the sea.

The W side of the mouth of the Catarman River is formed by a long and narrow sandspit, which is reported to shift considerably during the Northeast Monsoon. The channel across the bar is very narrow and has a depth of 2.1m at LW.

A light is situated on the beach at Cawayan on the E side of the entrance to the Catarman River.

Vessels can take anchorage about 0.5 mile NW of the light at Cawayan, in a depth of about 9.1m, sand.

This anchorage is unsafe during the Northeast Monsoon.

Hirapsan Island (12° 32'N., 124° 42'E.), small in extent and about 4m high, is located about 2.75 miles ENE of the light at Cawayan. The trees on the island are tall and dense.

Palijon Island, located about 1 mile NW of the above island, is a mangrove swamp, all the land being covered at HW.

These two islands stand on the same reef, which is narrow and about 2 miles long in a NW and SE direction.

The reef between the islands dries at LW. Fairly good anchorage, protected during the Northeast Monsoon, can be taken by vessels with local knowledge, W of Hirapsan Island.

Caution.—Foul ground, consisting of a number of dangerous reefs and shoals, with depths of less than 2 to 6m, lies within an area bounded by Cajoagan Island, Palijon Island, Hirapsan Island, and Bugko Point. Vessels must navigate with caution in this area.

A shoal, with a least depth of 12.8m, lies about 6.75 miles NE of the light structure at Cawayan.

2.113 Catarman Shoal (12° 34'N., 124° 38'E.), on which the sea breaks in moderate weather, lies about 3 miles NNW of the above light. The shoal is about 0.75 mile long, with a depth of 1.8m.

A reef, with a depth of 7.3m, lies about 2.75 miles WNW of the light at Cawayan. A shoal, with a depth of 9.6m, lies about 2.5 miles N of the above light.

Wright Shoal, about 1 mile in extent and with a least depth of 10.9m, lies 9.5 miles N of the light at Cawayan.

A shoal, with a least depth of 9.1m, lies about 7.75 miles N of the above light. The sea breaks heavily over these shoals.

Shoals, with depths of 14m and 15m, lie about 13.5 and 16 miles, respectively, N of the light at Cawayan. A detached shoal, with a depth of 18.3m, lies about 14 miles NNW of the light.

Fisher Shoal, with a least depth of 9.1m, lies about 7.5 miles NW of the light structure at Cawayan. The sea breaks heavily over it in rough weather.

Bobon Point (12˚ 32'N., 124˚ 34'E.) lies about 5.5 miles W of Cawayan. The town of Bobon stands on the E side of the entrance to the Bobon River, which discharges close W of the point. The roof of the church is prominent from seaward. Reefs extend from both entrance points of the river, leaving a narrow boat channel to the beach in front of the town.

Reefs and foul ground extend as far as 1 mile NW from Bobon Point. A rock, 3m high, lies near the middle of a drying reef about 1.5 miles W of Bobon Point and about 0.5 mile offshore. A shoal, with a least depth of 3m, lies about 2 mile W of the point.

A drying rock lies about 0.75 mile W of Bobon Point and about 0.35 mile offshore.

Vessels can take anchorage, in fair weather, with the church at Bobon bearing 120˚, distant 0.75 mile, in depths of 11 to 15m.

2.114 Cabaun Island (12˚ 34'N., 124˚ 30'E.), low and bordered with mangroves, extends about 3.5 miles NW from a position about 2.75 miles WNW of Bobon Point. It is surrounded by a reef which extends about 0.5 mile from the NE side.

A shoal, with a least depth of 11.9m, lies about 1.75 miles NNE of the N extremity of Cabaun Island. A shoal, with a least depth of 6.7m, lies about 1 mile ENE of the SE extremity of the island.

The S side of the island is fringed by a narrow reef and shoals as far as mile S.

Ugamut Island (12˚ 33'N., 124˚ 29'E.) is small, low, covered with mangroves, and lies parallel to the SW side of Cabaun Island. A very narrow channel, which is foul at its N end, separates the two islands. The channel between is impracticable for navigation.

Bat Island (12˚ 32'N., 124˚ 30'E.), small and low, lies about 0.5 mile S of the SW extremity of Cabaun Island.

Reefs and foul ground extend nearly 1 mile E and SE from the islet. Foul ground extends 1 mile E and SE from the island.

Foot Islet (12˚ 33'N., 124˚ 29'E.), small and 3m high, lies about 0.5 mile W of the SW end of Ugamut Island. Reefs extend about 0.25 mile NW and SE from the islet.

Green Islet (12˚ 33'N., 124˚ 28'E.), small and about 30m high, lies about 1 mile WNW of the NW extremity of Ugamut Island. Reefs and foul ground extend up to 0.35 mile NW and 0.25 mile W from the islet.

The waters enclosed by a line joining the islet with the NW extremity of Cabaun Island and the N side of Ugamut Island, are for the most part, foul. The waters between Green Islet and Foot Islet are also foul.

2.115 Carangian Channel (12˚ 32'N., 124˚ 30'E.) separates Cabaun Island and Ugamut Island from the coast of Samar. It is narrow and used by coasting vessels which usually pass S of Green and Foot Islands and N of Bat Island.

The channel between Bat Islet and Cabaun Island is over 0.3 mile wide and clear of dangers in the fairway. It has a least depth of 12.8m. The part of the channel between Foot Islet and the coast of Samar is very narrow with a least depth of 7.3m in the fairway.

All the channels in this vicinity are subject to strong and irregular tidal currents.

San Jose (Carangian) (12˚ 32'N., 124˚ 29'E.), a loading port for copra, stands on the E side of a small cove about 4.5 miles W of Bobon. The cove is fouled with reefs, but there is a narrow boat channel to the shore. A range of hills approaches the coast close E of the town. There is a private wharf located about 0.4 mile NE of the town, with a depth of 12.8m alongside its berthing face.

A light is situated from a concrete tower 0.3 mile WSW of the pier, close N of the town. Improvements to the port are planned.

The town has a post and telegraph office but no medical facilities. There are no fresh water or stores available.

The approach to San Jose should be made from the E as the channel is wider, deeper, and straighter. The approach from the NW should be made only by small vessels with local knowledge. Carangian Channel should be attempted only during the daytime when the weather and visibility are good. There are no prominent landmarks or aids to navigation to mark the numerous shoals and reefs which are hard to discern.

Approaching from N, within 5 miles off Bobon Point, steer 180˚ for the roof of the church in the town of Bobon until the pier at San Jose comes clear and bears 255˚.

Then steer 248˚ until the E point of Cabaun Island bears 360˚, then change course to 270˚ and come alongside or anchor off the end of the pier in 18 to 20m.

Anchorage is also available in mid-channel, N of Bat Island, in depths of 15 to 22m.

2.116 Gilbert Island (12˚ 33'N., 124˚ 26'E.) is well wooded and 69m high at its S end. It is separated from the coast of Samar by a very narrow and winding channel. Small vessels with local knowledge sometimes use this channel, which has a least depth of 6.9m in the fairway.

A detached reef lies in the center of the W entrance and a coral head is about 0.3 mile N of this reef.

The E entrance is clear of dangers in the fairway. The Sinamangan River, which discharges into the S side of the channel, is narrow, shoal, and winding. Baird Point, the N extremity of Gilbert Island, is fairly steep-to. The NW and NE sides of the island are fronted by reefs to a distance of about 0.25 mile.

Buenavista, on the S shore of Gilbert Island, is a regular port of call for coasting vessels. A small dock is located SW of the town.

Balicuatro Islands (12˚ 39'N., 124˚ 24'E.) are a group of seven fairly large islands and numerous islets, reefs, and

dangers, lying N of the NW part of Samar. The islands extend from Tinau Island, lying about 2.5 miles NW of Cabaun Island, to the N extremity of Biri Island about 7.5 miles NW.

2.117 Biri Island (12°40'N., 124°23'E.), the largest and northernmost of the group, is 85m high in the center and heavily wooded. Biri Head, the NW extremity of the island, is a rocky perpendicular bluff, 61m high, and steep-to. It serves as a prominent landmark for vessels approaching San Bernardino Strait from the NE.

About 0.3 mile E of the N extremity of Biri Island a steep-to reef begins, which continues along the NE and E sides of the island, and also surrounds all the islands lying E and SE of Biri Island.

On the outer edge of this reef, which bares at LW, are a series of islets of limestone formation, from 3 to 36m high, all of which are prominent. The shoreline of the island is low and fringed with mangroves except at the N and S ends.

The W side of the island consists of a low bluff and gravel beach. The majority of the inhabitants are on the W side of the island.

Shoals, with depths of 15.5 and 10.5m lie about 1.25 miles NW and 0.6 mile WNW, respectively, of Biri Head. A rock, 4.5m high, lies near the S end of a reef located about 0.75 mile S of Biri Head. A shoal, with a least depth of 19.5m, lies about 3.5 miles SW of the head. A rock, 6.1m high, lies just outside the coastal reef about 0.5 mile ENE of Biri Head.

Fitzgerald Banks are three small shoals, with depths of 16.5, 11.3, and 11.3m lying about 5, 7, and 10 miles ENE, respectively, of the summit of Biri Island.

These banks, clearly indicated by their color, are of coral formation.

A shoal, about 1.5 miles long with a least depth of 14.6m, lies about 11 miles ENE of Biri Head.

Strong tidal currents and heavy tide rips are encountered off Biri Head.

Macarite Island and Cagnipa Island, moderately high and about 1.25 miles long, lie close off the SW side of Biri Island. The islands are separated from each other, and from Biri Island, by narrow and deep channels. The S ends of these islands form the N side of the W entrance to Biri Channel.

Talisay Island, Magesang Island, Makadlao Island, and Tinau Island and a number of small, unnamed islets and rocks lie E and SE of Biri Island. These islands, along with Biri Island, all lie on one large reef, which is mostly bare at LW.

A light marks the S end of Tinau Island at San Antonio village.

Anchorage.—Vessels with local knowledge can take anchorage between the N end of Cagnipa Island and the E side of Macarite Island, in a depth of 37m. This anchorage is not recommended, because the bottom is rocky and the tidal currents are strong.

Biri Anchorage is a small but well-protected anchorage formed by a break in the reef between the S end of Biri Island and the W side of Makadlas Island.

Vessels with local knowledge with a need to use this anchorage should make the approach from Biri Channel on a N course so as to pass about 0.25 mile W of a small, bright, sand cay lying about 0.75 mile WSW of the W extremity of Makadlao Island.

A mid-channel course should then be steered between the reefs and anchorage, taken as convenient, in depths of from 27 to 37m. The edges of the reefs marking this anchorage show plainly, are steep-to, and in many places are marked by fish traps.

Biri Channel (12°38'N., 124°22'E.) lies between the Balicuatro Islands and another group of islands located close off the N coast of Samar. It is generally used by coastwise vessels bound to and from ports on the N and E coasts of Samar. The channel is over 0.5 mile wide, deep, and clear of dangers in the fairway.

In Biri Channel, and in the other channels in this vicinity, there are strong tidal currents. The flood flows W and the ebb E, the change of current occurring about 4 hours after HW and LW, respectively.

2.118 San Juan Islands (12°36'N., 124°23'E.) lies in a group of five densely wooded islands located on the S side of Biri Channel. They are separated from the coast of Samar and from Gilbert Island by Bani Channel.

The islands are closely joined by reefs and appear as one island. San Juan and the islands of Nagnasa, Elonbachid, Maravilla, and Bani lie in a N to S direction.

The outer coasts are well defined, usually bold, and fringed by a narrow reef. The inner coasts of the islands are mainly mangrove swamps.

Shoals, with depths of 10.4m and 14m, lie about 0.75 mile and 0.5 mile NW and W, respectively, of the S extremity of Maravilla Island. Another shoal, with a depth of 9.5m, lies about 1 mile W of the NW extremity of Bani Island.

Three shoals, with depths of 2 to 4m, extend about 1.25 miles NW from a position about 0.3 mile SW of the SW extremity of Bani Island. The shoals lie about 0.25 to 0.6 mile off the W side of Bani Island in the W approach to Bani Channel.

Small vessels, with local knowledge, can take anchorage in the channel between San Juan Island and Bani Island, in a position about 1.5 miles E of the NW extremity of Bani Island. The anchorage has good holding ground of mud and sand, but limited swinging room.

Vessels should enter from the W at slack water or with the W tidal current.

The tidal currents at the W entrance to the channel are strong, but are weak at the anchorage.

The W entrance to the passage has a depth of about 9.1m and the E entrance about 13.7m.

2.119 Bani Channel (12°34'N., 124°23'E.) is a narrow passage separating Bani Island from the coast of Samar.

The channel has a least width of about 0.4 mile, but its navigable width is reduced to about 0.15 mile by the group of detached shoals lying just outside the W entrance. The fairway has a least depth of 5.5m.

Reefs and dangers extend as far as 0.25 mile SE from San Juan Island and up to 0.15 mile S from Bani Island.

The S side of the channel, between Baird Point and Borabaybay Point, about 4.5 miles WSW, is low and mostly mangrove swamp. Cave Point, 58m high, lies about midway between the above points.

Bani Channel is used by coastwise vessels bound to and from ports on the N and E coasts of Samar. Vessels navigating Bani Channel should steer mid-channel courses and pass at least 183m N of the reef off Borabaybay Point. A shoal, with a depth of 5.5m, lies in mid-channel, about 0.3 mile NE of Borabaybay Point.

Urdaneta Harbor (12° 33'N., 124° 21'E.) is entered between Borabaybay Point and the E face of a small peninsula, lying about 1 mile SSW.

A shoal, with depths of less than 9.1m, extends about 0.5 mile NW from the E side of the entrance to the harbor.

A reef, with a depth of 3m, lies about 0.2 mile from the head of the harbor. A small detached drying reef lies about 0.5 mile NNW of the W entrance point of the harbor.

Vessels with local knowledge can take anchorage in the middle of the harbor, in a depth of 18m. This anchorage is unsafe during N winds.

2.120 Lavezares Harbor (12° 33'N., 124° 20'E.), entered about 0.5 mile W of Urdaneta Harbor, is nearly blocked by the fringing reefs which extend from either shore. There is a narrow boat channel between the reefs, which leads to the town of Lavezares at the head of the harbor.

Fish traps mark the edges of the fringing reefs during most of the year. The metal-roofed municipal building, the largest in town, is prominent.

Vessels with local knowledge can take anchorage, in the entrance to the harbor, with the municipal building bearing 181° and the detached reef N of the E entrance point bearing 091°, in depths of from 18 to 20m.

Small vessels with local knowledge can take anchorage in the middle of the harbor, nearer its head, with the municipal building bearing 181°, in depths of 4 to 6m.

The swinging room is somewhat limited, but the holding ground is good. These anchorages are untenable during N or NE gales, at which time heavy swells set into the harbor.

Coconut Island (12° 34'N., 124° 19'E.), low and covered with coconut trees, lies near the shore in a position about 0.5 mile NNW of the W entrance point of Lavezares Harbor.

The narrow passage, between the island and the coast of Samar, is intricate and shoal.

A reef extends about 0.5 mile W of the N extremity of Coconut Island. A rock awash lies about 0.3 mile ESE of the S extremity of the island.

Balicuatro Point (12° 35'N., 124° 17'E.), the NW extremity of Samar, is steep-to and clear of dangers. The land within rises to a hill, 173m high, about 1.25 miles SSE of the point. The reef, which fringes the point on both sides extends only a short distance offshore.

Samar—Northwest Coast

2.121 Lipata Point (12° 32'N., 124° 16'E.), lying about 3.25 miles S of Balicuatro Point, is quite high, rocky, and bordered by a narrow reef of sand and rock.

Vessels will find anchorage during the Northeast Monsoon in the small open bay off Quinaquitman about 1 mile SE of Lipata Point. In the N part of the bay, there are depths of 24 to 49m.

Allen (12° 30'N., 124° 17'E.) is a small town, situated close S of the mouth of the Sabag River. The town is reported to have a post and telegraph office.

A light marks a position close N of the entrance to the Sabang River. There is a concrete pier, 125m in length, at the town.

Vessels can take anchorage about 0.5 mile off the town of Allen, in a depth of 18m, sand and coral. This open roadstead is not a good heavy weather anchorage.

Burobodiongan Point (12° 28'N., 124° 17'E.), located about 2 miles S of Allen, is covered with high trees. The tidal currents, which attain a maximum rate of 7.5 knots at springs, cause heavy tide rips off this point.

The **Mauo River** (12° 27'N., 124° 18'E.), located about 2 miles SE of Burobodiongan Point, can be entered by small vessels. The entrance to the river is rocky, with the channel lying close to the wooded bluff on the N side. The navigable width of the channel is reduced to about 18m by a reef extending from the S entrance point.

There is a least depth of 4.5m in the fairway of the channel. Inside the entrance a spit, with a least depth of 1.8m, projects out from the village on the N bank of the river.

Victoria (Mauo) is a small town on the N shore of the entrance to the Mauo River. There is a small concrete pier with a depth of 2.1m at its head.

Large vessels can take anchorage outside the mouth of the river, with the river well open. Depths of less than 37m should be approached carefully. The ground is foul N and S of the mouth of the river.

Looc Bay (12° 23'N., 124° 20'E.) is entered between Looc Point, located about 4.5 miles SSE of the entrance to the Mauo River, and Canaguayan Islet, about 0.6 mile SSW.

Sojoton Point (12° 19'N., 124° 20'E.), located 3.5 miles S of Looc Point, is high and jagged. Sojoton Islet, 32m high; lies about 45m NW of the point. There is a small, steep-sided cove just N of Sojoton Point. A depth of 7.3m lies near the mouth of the Palanit River which discharges into the head of the cove.

A shoal extends about 0.5 mile W from Looc Point. A shoal, with a depth of 8.2m, lies in the middle of the entrance to the bay. The head of the bay is filled with reefs. A causeway, with two bridges, extends across the bay about 0.5 mile NE of Looc Point. A pier at which small vessels load copra is located in the bay about 0.5 mile NE of Looc Point.

Canaguayan Islet, 36m high, lies close off the coast of Samar, on the E side of the entrance to Dalupiri Pass.

Vessels can take anchorage between Canaguayan Islet and the coast of Samar in sufficient depths with good holding ground, but the space is limited.

2.122 Dalupiri Island (12° 25'N., 124° 15'E.), 128m high and partly wooded, extends about 6 miles SSE from its N extremity, which is located about 7.75 miles SSW of Balicuatro Point. It lies parallel to the NW coast of Samar, from which it is separated by the wide and deep Dalupiri Pass. The E and W sides of the island are clear of dangers and steep-to.

A shoal, with a least depth of 8.2m near its outer end, extends about 2.25 miles N from Igang Point, the N extremity of the island.

Capul Island Light

A shoal extends about 2.25 miles SSE and 2 miles SE from Minanga Point, the S extremity of the island. At the inner end of this shoal depths of less than 5.5m extend about 0.6 mile offshore, and depths of less than 10.9m extend 1.5 miles offshore.

Vessels can take anchorage anywhere off the coast of Dalupiri Island, but necessarily close in on account of the considerable depths, except on the shoals extending from the N and S ends of the island.

Dalupiri Pass (12°25'N., 124°18'E.), between Dalupiri Island and the W coast of Samar, is the safest of the three passes connecting San Bernardino Strait with the Samar Sea to the S. The pass has a least width of about 1.75 miles and is deep and clear of dangers in the fairway.

The strong tidal currents generally set fair with the channel, with a counter current close inshore. Tide rips and whirlpools are experienced about 2 miles N of Igang Point and 1.5 miles SE of Minanga Point.

2.123 Capul Island (12°26'N., 124°10'E.) stands with its N extremity about 6 miles WNW of the N extremity of Dalupiri Island. It lies parallel to the NW side of Dalupiri Island, from which it is separated by the wide and deep Capul Pass.

There are several sharp cone-shaped peaks on the island, but the summit, located near the SE end, is 216m high and flat-topped. The slopes are steep and heavily wooded, except on the NE side where a valley trends inland, where there are several clearings.

Capul, the most important town on the island, is located on the E side about 4.25 miles SSE of its N extremity. A church with a prominent bell tower is conspicuous. The fishing village of San Luis stands at the head of San Luis Bay on the NE side of the island.

A light marks Totoog Point, the N extremity of Capul Island.

Vessels can take anchorage, during fair weather, in a position NE of the town of Capul. This area is exposed to the full strength of the tidal currents which set through Capul Pass.

Caution.—A dangerous wreck lies 0.2 mile offshore, about 1.25 miles NNW of Capul. Also, a reporting system applies to all vessels, including pleasure craft and seaplanes on the water, transiting the area. Vessels should establish contact on VHF channel 16 with Capul Coast Watch Station, call sign Coast Watch Capul, when entering or departing San Bernadino Strait or passing Capul Island.

Vessels should report the following information:

1. Vessel name.
2. Call sign.
3. Course and speed.
4. Port of registry and nationality.
5. Type of vessel.
6. Type of cargo on board.
7. Port of destination and ETA.
8. Last port of call.
9. Number of crew on board.
10. Master's name.

2.124 Capul Pass (12°26'N., 124°13'E.), between Capul Island and Dalupiri Island, should be avoided as much as possible, and especially by northbound vessels, as there is danger of being set onto **Diamante Rock** (12°21'N., 124°12'E.). This rock is composed of sharp, black rocks which nearly dry, located about 2.25 miles SSE of Timon Point, the S extremity of Capul Island.

Rubi Shoal, which consists of sharp, black rocks, with a least depth of 5.8m, lies about 1.5 miles WNW of Diamante Rock and 1.75 miles S of Timon Point.

This danger and Diamante Shoal are steep-to and difficult to distinguish. Strong eddies are encountered between these dangers.

While the tidal currents sets S on the W side and in the middle of Capul Pass, there is a N current setting along the W side of Dalupiri Island, causing a long line of rips and eddies with a great deal of foam which gradually works across the pass according to the stage of the tide.

The ebb current flows N throughout Capul Pass, coming from the W over Rubi Shoals, while the flood current is still running SE of Diamante Rock.

Rips extend over 1 mile N from Totoog Point. During the flood current in San Bernardino Strait, a N tidal current sets along the E side of Totoog Point.

Tide rips have also been reported almost 2 miles W of Totoog Point.

2.125 Naranjo Islands (12° 23'N., 124° 02'E.), located W of Capul Island and about 7.5 miles S of the coast of Luzon, consists of the six small islands of San Andres, Rasa, Medio, Darsena, Aguada, and Escarpada.

Naranjo Pass, which is wide and deep, separates the group from Capul Island.

The islands are mountainous with very abrupt slopes, being steeper near the shores. The islands are almost bare of heavy timber, though practically the whole group is covered with brush and jungle. There are no important towns in the islands.

Tadloy Point, on San Andres Island, is the N extremity of the group.

Vessels can take anchorage in Sabariog Bay, lying on the N coast of Darsena Island, with protection being afforded by the other islands of the group. During the Northeast Monsoon anchorage can be taken off the SW side of Escarpada Island.

Ternate Bay, between Darsena Island and Aguada Island, affords protected anchorage, but is subject to strong currents at times. Access to this anchorage is from the SW.

Caution.—Navigators must exercise caution when approaching these anchorages as the channels are narrow and the tidal currents are strong.

The flood current in San Bernardino Strait generally sets SW between and around the Naranjo Islands. However, in the channel between Aguada and Escarpada Islands the current sets NW, and between Rasa and San Andres Islands it sets NE, causing heavy rips where it meets the flood current.

2.126 Destacado Island (12° 17'N., 124° 06'E.), about 201m high, lies about 3.75 miles SE of the Naranjo Islands. The island rises steeply from the sea and its coasts are generally clear of dangers. Lode Bay is formed by an indentation in the W coast of the island. A reef, on which there is a rock 2.7m high, extends about 0.3 mile offshore from the middle of Lode Bay.

Vessels can take anchorage in the N part of Lode Bay. This anchorage is untenable during the Southwest Monsoon.

Naranjo Pass (12° 24'N., 124° 07'E.), between the Naranjo Islands and Capul Island, is deep with a least width of 5 miles.

Numerous swirls and eddies are formed in the N entrance to Naranjo Pass and in the channel between Capul Island and Luzon.

Vessels bound S through Naranjo Pass should pass about 1 mile W of Totoog Point and the same distance E of Destacado Island.

Vessels bound W with the current are likely to be carried S toward San Andres Island unless special precautions are taken to avoid it.

Caution.—Navigators must exercise caution when navigating Naranjo Pass because of the cross currents.

At night or during stormy weather when the visibility is poor, vessels are advised to pass N and W of the Naranjo Islands, keeping fairly close to the Masbate coast in passing to or from the Samar Sea from San Bernardino Strait.