

SECTOR 7

ARQUIPELAGO DOS ACORES (AZORES)

Plan.—This sector describes the three groups of islands which form the Arquipelago dos Acores. The descriptive sequence is from the NW to SE.

General Remarks

7.1 The Arquipelago dos Acores is located 770 miles off the coast of Portugal. It consists of nine islands which are divided into three groups: the NW Group, the Central Group, and the Southeast Group. The Northwest Group, which includes Corvo Island and Flores Island, is separated from the Central Group by a clear channel, 120 miles wide. The Central Group is formed by Faia Island, Pico Island, Sao Jorge Island, Graciosa Island, and Terceira Island. The channel separating the Central Group from the Southeast Group is 75 miles wide and clear of dangers, with the exception of Banco Dom Joao de Castro, which lies 33 miles SE of Terceira Island and has a least depth of 6.7m. The Southeast Group is formed by the islands of Sao Miguel Island and Santa Maria Island, with Ilheus das Formigas, a narrow group of rocks, lying about 20 miles NE of the latter.

These islands, which belong to Portugal are, with the exception of Santa Maria, of volcanic origin. They may be considered as consisting of a number of craters which form an extensive ridge, 300 miles long, between 39°45'N and 36°55'N, and 31°20'W and 24°45'W.

The islands are generally mountainous, radar conspicuous, and visible from a considerable distance.

Tides—Currents.—Currents in the vicinity of the archipelago may set in any direction, but there is a slight predominance of currents which set between the SSW and SSE throughout the year. The velocity of most of the currents observed did not exceed 1 knot.

Caution.—Local magnetic anomalies have been reported in several locations throughout the islands.

Numerous fishing vessels may be encountered in the vicinity of these islands.

Several ODAS buoys may frequently be encountered in the vicinity of these islands.

Northwest Group

7.2 Corvo Island (39°42'N., 31°07'W.), the northernmost and smallest island of the archipelago, consists of a single extinct volcanic mountain. The crater of this mountain, which is known as Caleirao, occupies the whole of the NW part of the island. Peaks of 670m and 777m stand on the N and S sides, respectively, of this crater.

Except in the S part of the island, the coasts fall vertically to the sea and are inaccessible.

Ponta Negra (39°40'N., 31°07'W.), fringed by rocks, is the S extremity of Corvo Island. A light is shown from a tower, 4m high, standing on the point and three windmills are situated close E of it.

The E coast of the island, NE of this point, is formed by high cliffs fringed by rocks. A conspicuous pyramid-shaped rock, 45m high, stands on the shore on the NE side of a bay, 0.8 mile N of Ponta Negra Light. Two prominent buildings, with a mast, stand at the head of the bay, 0.4 mile NW of Ponta Negra.

Vila Nova (39°41'N., 31°06'W.) (World Port Index No. 38065), the principal town of the island, is situated in Portinho da Casa, a small bay, lying close NE of Ponta Negra. A prominent church stands in the S part of the town. A pier, 50m long with depths up to 4m alongside, is situated at the head of the bay.

During good weather, vessels can obtain anchorage, in depths of 18 to 27m, 0.4 to 0.6 mile W of Ponta Negra Light.

Ponta do Vale, the SE extremity of the island, is located 1.5 miles NE of Ponta Negra. It is surmounted by a prominent conical hill, 267m high.

Canto da Carneira (39°43'N., 31°05'W.), the NE extremity of the island, is located 1.9 miles N of Ponta do Vale. This point is formed by a bluff, 232m high, and a rock, with a depth of 2.1m, lies 0.3 mile N of it. A light is shown from a tower, 8m high, standing on this bluff.

Ponta do Torrao, the N extremity of the island, is formed by an inaccessible projecting rock, 112m high, with a prominent over-hanging cliff. An islet, 124m high, lies close to the shore between this point and Ponta Torrais.



Corvo Island—SE coast

Ponta Torrais, the NW extremity of the island, is located 1.7 miles WNW of Canto da Carneira. It is a conspicuous point, which rises steeply to the edge of the crater, and a small islet lies close off the N side.

Ponta Oeste, the W extremity of the island, is located 1.5 miles S of Ponta Torrais. It presents the appearance of low cliffs descending in terraces to the sea.

Tides—Currents.—Within the vicinity of Corvo Island and Flores Island, the flood tidal current sets N and the ebb current sets S, with rates of 1.5 knots at springs and 0.7 knot at neaps. These tidal currents, when opposed by gales, create a confused sea off the N and S extremities of both islands.

It is reported that there is also a current in the vicinity of these two islands which sets in a general SE direction, with a rate of 0.3 to 0.8 knot depending upon the force of the wind.

7.3 Flores Island (39°26'N., 31°12'W.), located 9.5 miles SSW of Corvo Island, is the westernmost island of the archipelago. It is mostly mountainous, but cultivated and wooded. Testa da Igreja, the summit of the island, slopes gradually N and numerous waterfalls can be seen on its S part.

Ponta Delgada (39°31'N., 31°12'W.), the N extremity of the island, is moderately high and surmounted by a small conical hill. The point is fronted by rocks, which extend up to 0.4 mile seaward, and several radio masts are reported to stand on it.

Baixos do Joao de Lisboa, a shoal with a least depth of 30m, lies 2 miles NE of the point.

Ponta Ruiva, the NE extremity of the island, is located 2.5 miles SE of Ponta Delgada. The coast between consists of a bay with low cliffs along its shore. Anchorage, sheltered from winds from the SE through S to W, can be obtained, in depths of 35 to 45m, sand, midway between the two points.

Ilheu de Alvaro Rodrigues, fronted by rocks on its N side, lies close offshore, 1 mile SSE of Ponta Ruiva. Sheltered anchorage may be obtained, in a depth of 66m, sand, close SE of this islet.

Santa Cruz (39°27'N., 31°07'W.) (World Port Index No. 38070), a small harbor, lies 2.5 miles SSE of Ilheu de Alvaro Rodrigues. The coast between is fringed with rocks which extend up to 0.3 mile offshore. The town, the principal one of the island, may be identified by its castle and by Monte das Cruzes, a pointed hill, standing 0.5 mile WSW of it. Two conspicuous radar antennas stand near the summit of this hill.

A light is shown from a tower, 6m high, standing on the N side of the town. A prominent factory and a chimney stand 0.5 mile N of the light. A conspicuous airport control tower stands 0.4 mile NW of the light.

The harbor consists of two small basins, with depths of 2m, which are used by fishing vessels and small craft. The entrance channels leading to the basins are indicated by lighted ranges, but numerous obstructions lie in the approaches and local knowledge is essential. The town can be contacted by VHF and radiotelephone.

Anchorage may be obtained, in a depth of 75m, 0.4 mile SE of the light. This berth is sheltered from winds from the N through W to SW.

Caution.—A local magnetic anomaly has been reported in the vicinity of Santa Cruz.

7.4 Ponta da Caveira (39°25'N., 31°08'W.), a low and rocky point, is located 2 miles SSW of Santa Cruz. The coast between forms a bay which is bordered by a shingle beach and affords the best anchorage off the island. Vessels are advised to anchor, in a depth of 37m, about 0.8 mile SSW of Santa Cruz Light or, in a depth of 27m, about 1.4 miles SSW of the light.

Ponta da Lomba, located 1.7 miles SSW of Ponta da Caveira, is high, steep, and can be identified by a prominent church standing 0.5 mile NW of it.

Ponta do Baixo, located 1.8 miles SSW of Ponta da Lomba, is steep and fronted by rocks.

Lajes (Lajes das Flores) (39°23'N., 31°10'W.), a small town, stands on the SW shore of a small and rocky bay which is entered close N of Ponta do Baixo. A prominent church, with two towers, stands in the town.

A light is shown from a tower with a dwelling, 16m high, standing on Ponta das Lajes, 0.4 mile SW of Ponta do Baixo; a conspicuous water tower stands close NNW of it. A breakwater extends 300m ENE from the E extremity of Ponta das Lajes and protects a small quay at its root.

Anchorage can be obtained, in a depth of 30m, 0.4 mile E of Ponta do Baixo, or, in a depth of 22m, 0.4 mile ENE of the point.

Construction is being carried out in the vicinity of Ponta do Baixo.

7.5 Baixa do Morros (39°21'N., 31°11'W.), a pinnacle rock with a depth of 5.5m, lies about 1.4 miles SSW of Ponta das Lajes.

Ponta dos Ilheus, low and rocky, is located 3.5 miles W of Ponta das Lajes and is the SW extremity of the island. Baixa do Escolar, with a depth of 19m, lies about 1.5 miles S of this point.

Anchorage can be obtained, in a depth of 42m, off a small cove, about 0.7 mile W of Ponta dos Ilheus.

Ponta das Cantarinhas, located 1.3 miles N of Ponta dos Ilheus, is low and has a conspicuous islet lying close off it. Ponta dos Bredos, located 2 miles N of Ponta das Cantarinhas, is high, cliffy, and has a whitish appearance. A prominent column-shaped rock lies close off this point.

Faja Grande, located 1.8 miles N of Ponta dos Bredos, is a low point on the N side of a promontory which forms the W extremity of Flores Island. Two above-water rocks lie 0.5 mile NW of the point. A light is shown from a structure, 6m high, standing on the point and a conspicuous chimney stands 0.6 mile S of it.

Several very conspicuous waterfalls may be seen in the valley, which is dominated by a peak rising inland from the coast, lying between Faja Grande and Ponta dos Bredos.

Ponta dos Fenais, located 2.3 miles N of Faja Grande, is low and backed by a steep and black hill. Ilheu de Monchique, 33m high, lies 1 mile WNW of the point. This prominent islet is precipitous and 33m high. During offshore winds, vessels can obtain anchorage, in depths of 45 to 55m, within the bay lying between Ponta dos Fenais and Faja Grande. Baixa Rusa, an above-water rock, lies on a patch of foul ground which extends up to 0.4 mile W of Ponta dos Fenais.

Ponta do Albarnaz (39°31'N., 31°14'W.), the NW extremity of Flores Island, is located 2 miles NNE of Ponta dos Fenais. It

is steep and of a reddish color. A main light is shown from a tower, with a dwelling, 15m high, standing on the point.

Central Group

7.6 Faial Island (Fayal Island) (38°35'N., 28°42'W.) is mountainous, wooded, and its center is occupied by an extinct volcanic crater. Cabeco Gordo, the summit of the island, rises to a height of 1,044m at the S side of this crater. Several other volcanic peaks stand in the NW part of the island. The coasts are mostly precipitous with the lowest parts being along the S and W sides of the island.

Monte da Guia (38°31'N., 28°38'W.), the SE extremity the island, is formed by an extinct volcano, 144m high. It is steep, rounded, and surmounted by a conspicuous radio mast.

The coast trends W for 6 miles from Monte da Guia to Ponta Castelo Branco and is steep and fringed by rocks. Ponta Forte is located 1.3 miles E of the latter point and the installations of an airport are situated close inland of this point.

Ponta Castelo Branco, the SW extremity of the island, is formed by a round and conspicuous peninsula, which from a distance appears like a large detached rock; it is surmounted by a fort.

Ponta dos Capelinhos, a steep-to promontory 160m high, is located 6 miles NNW of Ponta Castelo Branco. It is the NW extremity of the island and a disused light stands on it. A stranded wreck is reported to lie on the N side of this point.

A light is shown from a tower, 14m high, standing on a point along the coast, 1.5 miles SSE of Ponta dos Capelinhos.

From Ponta dos Capelinhos, the coast trends E for 3.5 miles and then NE for 3 miles to Ponta dos Cedros. It forms a large bight with the small town of Praia da Norte standing at the head, above a sandy beach.

Anchorage can be obtained, in a depth of 37m, sand, about 0.4 mile off the head of this bight.

Ponta Jorge, located 1 mile SW of Ponta dos Cedros, consists of high, vertical cliffs. This point can easily be identified by a peak, 147m high, standing 0.5 mile NE of it.

Ponta da Ribeirinha (38°36'N., 28°36'W.), the NE extremity of the island, is located 6 miles SE of Ponta da Ribeirinha. It is high and steep with a small sandy beach at the base. A prominent chapel stands on a cliff at the S side. A main light is shown from a prominent tower, with a dwelling, 20m high, standing close NW of the point.

Between Ponta da Ribeirinha and Ponta da Espalamaca (Cavalo), located 2.8 miles S, the coast is divided into two bights which afford anchorage to small vessels. Ponta da Espalamaca is bold and cliffy, and a shoal, with a depth of 4.2m, extends up to 0.3 mile NE of it.

7.7 Horta (38°32'N., 28°37'W.) (World Port Index No. 38080), the main town of the island, is situated in Baía da Horta, which offers one of the best anchorages in the archipelago. This bay is entered between Ponta da Espalamaca and the NE side of Monte da Guia, 1.5 miles SW.

Winds—Weather.—The bay is exposed to the heavy seas which set in during SW gales.

Tides—Currents.—Tides rise 1.6m at springs and 1.3m at neaps.

Depths—Limitations.—The main berthing area is situated along the inner side of the breakwater. It is 410m long with depths of 4 to 6.5m alongside. Several mooring buoys are situated in depths of 10m, in the central part of the harbor. A quay, situated at the head of the harbor, can only accommodate lighters and small craft. A marina, with extensive facilities for yachts, is situated at the NW side of the harbor.

It is reported that vessels up to 14,200 grt, 146m in length, and 7.5m draft have entered the harbor. Larger vessels anchor outside and discharge cargo into lighters.

Aspect.—The town is situated on the lower slopes of Monte Carneira, 268m high, which dominates the W side of the bay. A steep and black hill stands on Entre Montes, the isthmus, which connects Monte da Guia to the island. A harbor fronts the town and is protected by a breakwater which extends NNE from the N side of this isthmus.

A prominent statue of a crucifix stands 0.5 mile WNW of Ponta da Espalamaca; a conspicuous radio mast stands close WNW of it. A conspicuous meteorological observatory is situated on a hill, 58m high, standing 0.4 mile SW of the head of the breakwater. Four prominent radio masts and a conspicuous water tower stand close NW of the observatory. The prominent twin towers of a church are situated close SE of the observatory. A conspicuous clock tower stands in the N part of the town.

The harbor entrance channel is indicated by a lighted range and a light is shown from a framework tower, 15m high, standing on the head of the breakwater.

Pilotage.—Pilotage is compulsory. Pilots may be contacted on VHF channel 14 or 16 and board about 0.5 mile outside the breakwater at the juncture of the Faial Pico channel or the Faial St George channel; otherwise the pilot boards at the breakwater. Vessels should send an ETA 48 hours and 24 hours in advance.

Anchorage.—Vessels anchor, in a depth of 33m, about 0.2 mile E or 0.3 mile SE of the breakwater head.

Caution.—During strong winds from between the SW and SE, a steep and confused sea may be experienced at the anchorage and within the harbor. At such times, vessels of any size should not attempt to enter the harbor.

The holding ground in the harbor is reported to be bad.

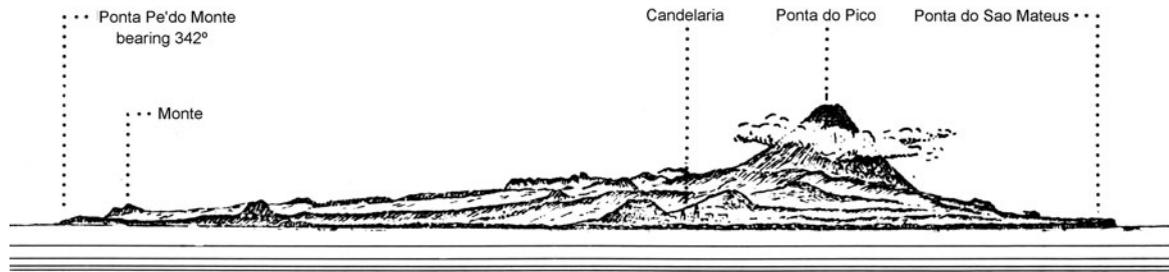
A local magnetic anomaly has been reported in the vicinity of the port.

Numerous disused submarine cables have been reported to exist within an area lying about 0.4 mile NNE of the head of the breakwater.

Princess Alice Bank (37°58'N., 29°18'W.) lies about 42 miles SW of Faial Island. This bank has a least reported depth of 17m and numerous fishing vessels may be encountered in its vicinity. Depths of 20m (1958), 60m (1947), and 50m (1958) were reported to lie about 10 miles S of this bank.

Acor Bank (37°12'N., 28°58'W.), with a least depth of 144m, lies about 18 miles NE of Princess Alice Bank. Depths of 18.3m (1945) and 46m (1954) were reported to lie about 6 miles WNW of this bank.

7.8 The Canal do Faial, which separates Faial Island from Pico Island, is 2.5 miles wide at its narrowest part between Ponta da Espalamaca and Ilheus da Madalena. In general, the depths in this channel are more irregular in the S part than in



Pico Island

the N part. The Faial Island side of the channel is safer, as heavy rollers may exist at the E side off the NW coast of Pico Island. The flood tidal current in the channel sets NNE and the ebb current sets SSW; they attain rates of 1 to 2 knots. The ebb tidal current generally sets strongly into Baía da Horta, where rates up to 2.5 knots have been experienced.

Baixa do Sul lies in the middle of the channel at the S end, about 1.5 miles ESE of Monte da Guia. It is steep-to with a least depth of 7.1m. During SW gales, the sea breaks heavily over this rock.

Baixa do Norte, with a least depth of 16.2m, lies 0.8 mile WNW of Ilheus da Madalena.

A patch, with a depth of 25m, was reported (1980) to lie 3.2 miles ESE of Ponta da Ribeirinha, and a patch, with a depth of 24m (sounding doubtful), was reported (1966) to lie 0.7 mile ENE of Ponta da Espalamaca.

Caution.—A submarine power cable crosses the channel between a point close N of Ponta da Espalamaca and Madalena.

Ferries ply frequently across the channel.

7.9 Pico Island (38°30'N., 28°20'W.) takes its name from the highest mountain of the archipelago which stands in its W part. This mountain, 2,352m high, almost completely occupies the W part of the island and has a remarkable summit which terminates in a sharp cone. It is still an active volcano and smoke, flames, and ashes have been emitted to some distance. The summit is frequently obscured by clouds, but in clear weather has been reported visible from up to 75 miles seaward.

Between this mountain and the E end of the island are several other prominent mountains, of which Pico Topo is one. This mountain, 1,008m high, stands 9 miles WNW of the E extremity of the island.

The coast of the island is generally rugged, wild, inaccessible, and without shelter. There are no good anchorages for large vessels, but there are several coves where small craft may find sheltered anchorage.

Ponta do Sao Mateus (38°25'N., 28°27'W.) is a low point surmounted by five hillocks. A light is shown from a tower, 13m high, standing on the point. A landing place is situated at the W side of the small town of Soa Mateus, which stands in a small cove close W of the point.

The low coast at the W end of the island trends WNW for 3.2 miles from this point to Ponta Espartel (Ponta Hospital), then nearly 5 miles N to Ponta do Arieiro. A cove, with a landing place for local fishing vessels, lies 2.3 miles N of Ponta Espartel and its entrance is indicated by a lighted range.

Ilheus da Madelena (38°32'N., 28°33'W.), comprised of two islets, lies 0.5 mile offshore, 0.7 mile NW of Ponta do Arieiro. The N islet is 72m high and conical. The S islet is flat-topped with a round opening in its W part. A rocky spit extends about 500m W from Ponta do Arieiro and there are depths of 6m in the narrow fairway which lies between its extremity and the rocks fringing Ilheus da Madalena. A boat landing is situated at the head of a small inlet, 0.7 mile SE of Ilheus da Madelena. The entrance is indicated by a lighted range when conditions for entry are favorable.

7.10 Madalena (38°32'N., 28°32'W.) (World Port Index No. 38081), the principal town of the island, stands at the head of a small inlet and is fronted by a harbor which is mostly used by inter-island traffic and fishing vessels. The harbor is protected by a breakwater, on the N side, and a spit, which extends 0.2 mile W from Ponta do Arieiro, on the S side. It should be approached from N of Ilheus da Madelena. The harbor can be contacted by VHF and a lighted range indicates the entrance. Anchorage may be obtained, in a depth of 29m, fine sand, about 0.7 mile S of Ilheus da Madalena.

Ponta Baixo Grande is located 1.5 miles NE of Madalena. Several landing places are situated between this point and the E extremity of the island. Most of the projecting points along the N coast of the island are low and fringed with rocks, but rise rapidly towards the interior.

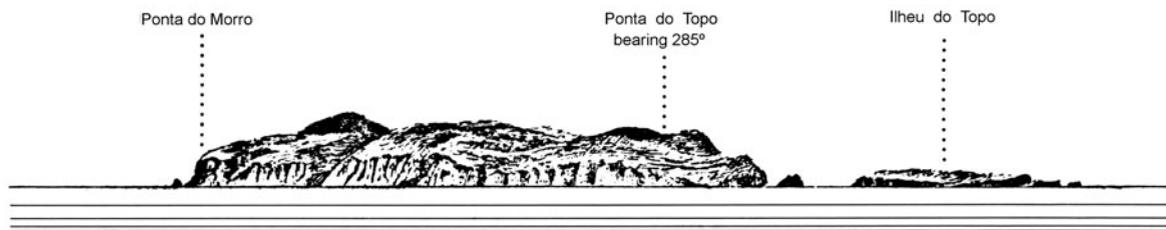
Porto Cacharro, a boat landing, is situated within a small bay, with a village, 2.8 miles E of Ponta Baixo Grande.

Porto do Cais do Pico (38°32'N., 28°19'W.), a small harbor, lies 6.3 miles ESE of Porto Cacharro. It is formed by a breakwater which extends 250m ESE from the shore at the N side of a shallow bay. A landing place is situated at the head of this bay. Vessels up to 180m in length and 6m draft can be accommodated alongside a berth at the inner side of the breakwater.

A light is shown from a hut, 5m high, standing at the E side of the bay. A conspicuous factory and a chimney stand 0.2 mile NNW of the light structure. Local pilots are available and the harbor can be contacted by VHF. Anchorage may be obtained, in a depth of 55m, sand and crushed rock, close ESE of the breakwater head.

A landing place will also be found in a small inlet close W of Ponta de San Antonio, 1.1 miles NW of Cais do Pico.

Ponta Misterio, the most prominent point of the N coast, is located 3.7 miles SE of Cais do Pico. It is 18m high and fronted by caves. The coast to the E of this point is higher and more cliffy than that to the W.



Sao Jorge Island

7.11 Ponta da Ilha ($38^{\circ}25'N.$, $28^{\circ}02'W.$), the E extremity of the island, is low, sloping, and fringed by foul ground. A light is shown from a prominent tower with a dwelling, 19m high, standing on the point. A prominent church stands at the village of Piedade, 1.5 miles NW of the point.

Calheta de Nesquim is located 2.5 miles WSW of Ponta da Ilha and two small coves, where landing is possible, lie between. The coast between Calheta de Nesquim and Ponta Negras, 3.5 miles W, is bordered by overhanging cliffs.

Ponta da Queimada, the S extremity of the island, is located 4.3 miles WSW of Ponta Negras. It is formed by a blunt promontory, with reefs near the base, surmounted by a small conical hill with a fort standing on it.

Lajes (Lajes do Pico) ($38^{\circ}24'N.$, $28^{\circ}16'W.$) (World Port Index No. 38083) is situated at the head of a lagoon, about 1 mile NW of Ponta da Queimada. The small town is fronted by a quay which is used by local small craft. Numerous dangers lie in the approaches to the lagoon and the entrance, which has a depth of 1.1m, is indicated by a lighted range. Anchorage can be obtained, in a depth of 29m, sand, close NW of the entrance. It is reported that a conspicuous television mast stands 1 mile NE of the town.

Ponta Sao Joao, located 5.2 miles W of Lajes, is formed by low cliffs and surmounted by two extinct craters. A landing place is situated at the small town of Sao Joao, 1.2 miles E of the point. Ponta de Sao Mateus, previously described in paragraph 7.9, is located 3.8 miles W of Ponta Sao Joao.

7.12 Sao Jorge Island ($38^{\circ}40'N.$, $28^{\circ}05'W.$) is separated from Pico Island by a clear passage, nearly 10 miles wide. It has a range of volcanic mountains which extend along the spine. Pico da Esperanca, the summit of the island, is 1,054m high and stands near the center. The coasts are mostly precipitous with high cliffs.

Ponta do Topo ($38^{\circ}33'N.$, $27^{\circ}46'W.$), the E extremity of the island, can be identified by Ilheu do Topo, 18m high, lying close E of it. This islet is fringed by rocks and the passage lying between it and the island is foul. A light is shown from a tower with a dwelling, 16m high, standing on Ponta do Topo. The prominent village of Topo is situated close SW of the point. Between Ponta do Topo and Ponta dos Monteiros, 3.8 miles WSW, the coast is sheer.

Calheta ($38^{\circ}22'N.$, $28^{\circ}02'W.$) (World Port Index No. 38088), a small cove, is located 9.5 miles NW of Ponta dos Monteiros. A landing place, marked by a light, is situated at the head of this cove. Ponta Queimada, marked by a light, is

located 9.6 miles NW of Calheta and Morro Grande, a bold and blackish headland, is located 1.5 miles NW it.

Velas ($38^{\circ}40'N.$, $28^{\circ}12'W.$) (World Port Index No. 38087), the principal town of Sao Jorge, is situated on the W side of the bay which is entered between Ponta Queimada and Morro Grande. A quay, 270m long, is situated close SE of the town and has alongside depths ranging from 2.6m at its root to 6.5m near its head.

The coast extending WNW from Morro Grande continues to be formed by cliffs which are dominated by high and sharp peaks.

Ponta dos Rosais ($38^{\circ}45'N.$, $28^{\circ}19'W.$) (Ponta da Terra), the W extremity of the island, is located 6.2 miles NW of Morro Grande. It is narrow and moderately high. A light is shown from a tower, with a dwelling, 28m high, standing on the point.

Several rocks lie off this point including two stacks, each 71m high. A patch, with a depth of 15m, is reported to lie about 2.5 miles WNW of the point.

Ponta do Norte Grande, a rocky projection on the N shore of the island, is located 13 miles SE of Ponta dos Rosais. The coast between is composed of barren and rugged cliffs. A light is shown from a tower, 6m high, standing on Ponta do Norte Grande.

Ponta Caldeira, located 6.7 miles SE of Ponta do Norte Grande, is fringed by shoals which break up to 0.5 mile offshore. A prominent town stands close above this point. Ponta do Topo, formed by high and steep cliffs, is located 9.5 miles SE of Ponta Caldeira.

Caution.—Due to landslides in the vicinity of several points, the depths close offshore are unreliable.

7.13 Graciosa Island ($39^{\circ}01'N.$, $28^{\circ}00'W.$), the most fertile of the archipelago, is separated from San Jorge Island by a clear channel 20 miles wide.

This island is very mountainous, particularly in the S part, where a volcanic crater with three peaks dominates the SE extremity of the island. Pico do Coirao, the highest of these peaks, rises to a height of 402m and stands on the SE side of the crater.

Groups of mountains also dominate the S and NE coasts of the island. These groups are separated by deep valleys and when seen from a distance, particularly from SW, give the impression of separate islands.

Ponta da Carapacho (Restinga) ($39^{\circ}01'N.$, $27^{\circ}57'W.$), the SE extremity of the island, is low but rises a short distance inland. This point is fringed by a reef and a rock, with a depth

of 4.3m, lies close S of it. A light is shown from a tower, with a dwelling, 14m high, standing on the point.

Ilheu de Baixo, 72m high, lies 0.5 mile SE of Ponta da Carapacho. A small islet, fronted by rocks, lies close off the NE side of Ilheu Baixo.

Ponta do Sul, a high bluff, forms the S extremity of the island and is located 1 mile WSW of Ponta da Carapacho. Ponta Folga (Enxudreiro) is located 1.2 miles WNW of Ponta do Sul and the village of Folga is situated at the head of a bay, close NW of it. Anchorage can be taken, in depths of 24 to 38m, fine sand, off the shore of this bay, depending upon the size of vessel.

Ponta Branca, fronted by an above-water rock, is located 2 miles WNW of Ponta Folga. The coast between is formed by cliffs which decrease in height. Ponta Alfonso do Porto, the W extremity of the island, is located 3.2 miles NW of Ponta Branca. A small bay, entered close S of this point, is surrounded by cliffs and has a good landing place situated on its S side. Its N side is fringed with rocks.

7.14 Ponta Barca (39°06'N., 28°03'W.), high and black, is located 2 miles NNE of Ponta Alfonso do Porto and is the NW extremity of the island. A main light is shown from a prominent tower, with a dwelling, 23m high, standing on the point.

A steep-to rock, with a depth of 5.2m, lies about 1.3 miles NE of the light.

From Ponta Barca, the coast trends ESE for 2.3 miles to Ponta Ferreira and is fronted by several rocks. Foul ground extends up to 0.3 mile N of Ponta Ferreira.

Santa Cruz (39°05'N., 28°00'W.), the principal town on the island, is situated at the head of a small bay lying on the W side of Ponta Ferreira. A light is shown from a hut, 6m high, standing in the W part of the town and a prominent windmill is situated 0.3 mile SE of it. Three prominent churches stand on the crest of a dark-colored hill, 128m high, which stands close SE of the town. An aeronautical radiobeacon is situated 0.5 mile SW of the town.

The town is fronted by a quay, 35m long, with depths of 1 to 4m alongside. Anchorage can be obtained, in a depth of 27m, sand and shell, about 0.2 mile from the head of the bay. Local knowledge is required as the bay is fringed by rocks.

Ponta do Quitadoiro, located 1.2 miles SE of Ponta Ferreira, is formed by a prominent high cliff. A conspicuous hill, 213m high, overlooks this point. From this point to Ponta Frei Joao, 0.7 mile SE, the coast is low and fringed with rocks. A conspicuous chimney stands close SW of Ponta Frei Joao and windmills stand SE and S of it.

Ilheu da Praia, fringed by rocks, lies 0.9 mile E of Ponta Frei Joao. This islet, 51m high at the N end, is covered with grass and has a clump of trees in its center. A shoal, with a least depth of 7m, lies 0.3 mile NE of it.

Vila da Praia (39°03'N., 27°58'W.), a small harbor, is situated in a shallow bay which is entered S of Ponta Frei Joao. It is protected by Ilheu da Praia and a breakwater which extends 300m ESE from a point on the shore, 0.2 mile S of Ponta Frei Joao. The S side of the harbor is encumbered by numerous rocks. A berth, situated on the S side of the breakwater, is 190m long and has a depth of 5m alongside the outer 140m. Local knowledge is required. Anchorage can be obtained, in a depth of 13m, sand and good holding ground, about 250m ESE of the head of the breakwater. A dangerous wreck is reported to lie about 0.3 mile ESE of the head of the breakwater.

Between Vila de Praia and Ponta da Carapacho (Restinga), 2.5 miles SSE, the coast is sheer with sharply rising ground behind it.

7.15 Terceira Island (38°43'N., 27°10'W.), located 20 miles ENE of the SE extremity of Sao Jorge Island, is the principal island of the archipelago. The residences of the Governor General and other civil and military authorities are situated here.

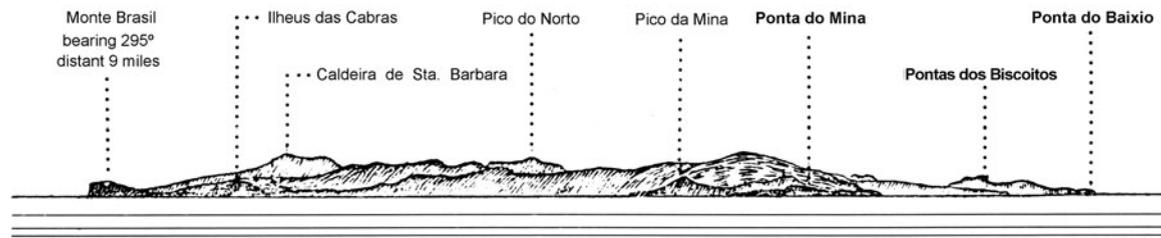
The interior of the island is generally mountainous. Caldeira de Santa Barbara, the highest summit, rises to a height of 1,021m and dominates the W end.

Ponta da Serreta (38°46'N., 27°23'W.), the W extremity of the island, is a rocky projection partially covered with lava. A main light is shown from a tower, with a dwelling, 15m high, standing on the point and is obscured from some directions.

Caution.—An area with a radius of 3 miles, lying centered on a point about 5 miles W of Ponta da Serreta is subject to intense seismic activity, accompanied by emissions of solid materials and gases.

7.16 Roches Serreta, consisting of two patches with depths of 8.7m and 9.4m, lies about 2 miles NW of the light. This danger is steep-to and there is deep water between it and the island.

Ponta do Cavalo is located 4 miles ENE of Ponta da Serreta and the coast between is formed of moderately high cliffs. Pico de Pinto, 153m high, stands 0.7 mile E of Ponta do Cavalo. This conical hill is conspicuous and its outer portion has been washed away by the sea. A prominent white monument stands on the summit.



Terceira Island

Ponta dos Biscoitos, from which a light is shown, is located 2 miles E of Ponta do Cavalo. A landing place is situated at the head of a small cove which is entered close W of the point.

From Ponta dos Biscoitos, the coast trends E for 7.5 miles to Ponta Espartal (Ponta Hospital) and is composed of cliffy bays. It then trends SE for 2.5 miles and SSE for 1.8 miles to Ponta (Ma Merenda) do Facho, which is high and steep.

Ilheu (Carneiros) do Norte lies 0.5 mile offshore, 1.7 miles E of Ponta Espartal. This small islet is steep-to and a deep channel lies between it and the island.

An aeronautical radiobeacon is situated 0.5 mile W of Ponta Espartal (Ponta Hospital). An aeronautical light is situated near an airbase control tower, 2.1 miles NW of Ponta do Facho.

Caution.—It is reported that aircraft may occasionally jettison external loads within 5 miles of a position lying 10 miles N of Ponta Espartal.

7.17 Praia da Vitoria (38°43'N., 27°03'W.) (World Port Index No. 38095), a supply harbor for the airbase, is situated within a bay entered between Ponta do Facho and Ponta do Baixio, 2 miles S. The town stands at the NW side of the bay and Lajes airbase is situated 2 miles NW of it. The harbor also has facilities for fishing vessels.

Tides—Currents.—Tides rise 1.7m at springs and 1.3m at neaps.

Depths—Limitations.—The harbor is protected on the E side by two breakwaters which form an entrance, 0.3 mile wide. The N breakwater extends 0.3 mile S from Ponta do Espirito Santo, which is located 0.5 mile SSW of Ponta do Facho. The S breakwater extends 0.6 mile N from Ponta da Santa Catarina, which is located 1.2 miles S of Ponta do Facho.

An oil pier, consisting of a central loading platform and dolphins, is situated 70m W of the N breakwater. It can accommodate tankers up to 200m in length and 10.7m draft.

A general cargo and bulk berth is situated in the S part of the harbor. It is 150m long, with a depth of 10m alongside.

A container berth is situated in the S part of the harbor. It is 350m long, with a depth of 11.8m alongside. Vessels up to 250m in length and 12m draft can be handled.

Aspect.—Lights are shown from the heads of the breakwaters. A ruined fort is situated on Ponta da Santa Catarina. A conspicuous church, with two conical towers, stands in the town.

Pilotage.—Pilotage is compulsory for berthing and anchoring in the harbor. Pilots can be contacted by VHF and board about 1 mile E of the entrance.

Anchorage.—Small vessels may anchor within the harbor as directed by the pilot. A good berth is in a depth of 12m, about 280m W of the head of the N breakwater. Anchorage can be obtained, in depths of 22 to 60m, outside the harbor. A good berth is in a depth of 28m, about 0.4 mile SE of the head of the S breakwater.

Caution.—Vessels should keep about 1 mile offshore between Ponta do Facho and the N breakwater.

Severe E gales occasionally create major surge conditions inside the harbor, especially during the winter months.

7.18 Porto Novo (38°41'N., 27°03'W.), a landing place, is situated within a small cove lying 2.5 miles SW of Ponta do Baixio. It can be identified by Pico da Cruz, a 218m high hill,

standing 0.5 mile W of it. A light is shown from a point about 0.5 mile NE of the cove.

Ponta da Mina, the SE extremity of the island, is located 1.7 miles S of Porto Novo. This point rises steeply to a height of 148m, about 0.5 mile WNW of its extremity. Ilheu da Mina lies on the seaward end of a reef which extends 0.5 mile NE of the point.

A main light (Ponta das Contendas) is shown from a tower, with a dwelling, 13m high, standing 0.3 mile W of Ponta da Mina.

Porto Judeu, a landing place, is situated within a small cove which is entered 2 miles W of Ponta da Mina. A light is shown from the head of the cove.

Ilheus das Cabras (38°38'N., 27°09'W.), consisting of two steep-to islets, lies 0.7 mile offshore, 3.1 miles W of Ponta da Mina. The E islet is 146m high and appears wedge-shaped when viewed from the E or W.

Fradinhos is located 2 miles SE of Ilheus das Cabras and consists of two rocks, 9m high, which lie on the NW edge of a steep-to shoal with a depth of 3.9m. Pedro Nova, a steep-to shoal with a least depth of 45m, lies 1.5 miles E of Fradinhos.

Monte Brasil, a peninsula, projects 1 mile S from the coast, 7 miles W of Ponta da Mina. It rises to a height of 205m and is a very conspicuous landmark. Ponta do Farol, from which a light is shown, is the E extremity of this peninsula. The SE and SW shores of the peninsula are steep-to and fronted by cliffs, 90m high. A prominent monument stands near the N summit of this peninsula.

7.19 Porto de Angra do Heroismo (38°39'N., 27°13'W.) (World Port Index No. 38090) is situated within a bay lying on the NE side of Monte Brasil. The bay is entered between Ponta do Farol and Ponta do Castelinho, 0.5 mile NE. The town is the capital of the island and the location of the residence of the Governor General of the Arquipelago dos Acores. It is the main harbor of the island; however, cargo trade has declined since the development of commercial berths at Praia da Vitoria.

Winds—Weather.—The bay is exposed to S and E winds and heavy swells set around Monte Brasil with the former. Vessels are generally safe here from June to September when fine weather generally prevails. In other months, a constant watch of the weather should be kept so that a vessel can put to sea at the first sign of any deterioration.

Tides—Currents.—Tides rise 1.6m at springs and 1.3m at neaps.

Depths—Limitations.—Cargo is generally handled by lighters at the anchorage.

The main berthing facilities are formed by a pier which extends W from Ponta do Castelinho. A quay, situated on its W side, is 82m long and has a depth of 8m alongside. Another quay, situated on its NW side, is 130m long and has depths of 3 to 5m alongside. There are facilities for LPG and bulk vessels. Vessels up to 110m in length and 6.1m draft can be handled alongside.

Aspect.—Monte Brasil, previously described in paragraph 7.18, is an excellent mark. A very conspicuous yellow monument stands on a hill, 0.5 mile NNW of Ponta do Castelinho and a radio mast stands 0.5 mile NNW of it. A prominent church, with two towers, stands close to the shore, at the head of the bay; a fort stands on Ponta do Castelinho. A light is



Porto Angra do Heroismo from SE

shown from a factory building situated 0.5 mile NE of Ponta do Castelinho, and a lighted range indicates the entrance fairway.

Pilotage.—Pilotage is compulsory. Pilots can be contacted on VHF channel 11, 14, or 16 and board about 1 mile SSE of the harbor entrance. Vessels should send an ETA 48 hours and 24 hours prior to arrival. This station provides pilot services for Praia da Vitoria.

Signals.—When the state of wind and sea is such that it would not be prudent to anchor in Porto de Angra do Heroismo, a large red and white pendant is displayed at Ponta do Farol, the SE extremity of Monte Brasil.

Anchorage.—Large vessels may anchor, in a depth of 35m, about 0.3 mile SSE of Ponta do Castelinho, but the holding ground is poor. Vessels carrying dangerous cargo or undergoing quarantine should anchor in an area lying 0.4 mile E of the above berth.

Caution.—Local magnetic anomalies have been reported in the vicinity of Porto de Angra do Heroismo.

7.20 Ponta de Sao Mateus (38°39'N., 27°17'W.) is located 2.7 miles W of Monte Brasil. The coast between is low and fringed by rocks. The small town of Sao Mateus is situated within a cove which is entered 0.5 mile ENE of the point. A light is shown from the W entrance point and a prominent church, with two towers, stands in the town. A small pier and a landing place front the town and are used by fishing vessels. Another landing place is situated at Porto do Negroito, which lies in a small cove close W of the point.

Ponta das Cinco is located 3.1 miles NW of Ponta de Sao Mateus. A light is shown from the point and it is surmounted by a chapel. A small quay and a landing place are situated at Cinco Riberas, at the E side of the point.

Between Ponta das Cino and Ponta da Serreta, 5.5 miles NNW, the coast is fronted by cliffs and fringed by rock.

Caution.—Banco Dom Joao de Castro, with a least depth of 6.7m, lies about 33 miles SE of the SE extremity of Terceira Island. A depth of 27m was reported (1959) to lie in an approximate position about 11 miles NE of this bank.

Seismic activity has been reported (1997) in the vicinity of the bank. Depths may be significantly less than charted.

Southeast Group

7.21 Sao Miguel Island (37°46'N., 25°24'W.) is separated from Terceira Island by a channel that is 75 miles wide and very deep. This island, the largest and one of the most important of the entire archipelago, is mountainous and of the volcanic origin.

The E part of the island is the highest, with Pico da Vara, its summit, rising to a height of 1,104m, 4 miles W of the E extremity. Serra de Agua de Pau, another prominent mountain 948m high, stands near the middle of the island. Caleira das Sete Cidades, with an extensive crater containing a lake, stands in the W part of the island. Pico das Eguas, 873m high, is the highest peak in the W part of the island and stands close SE of the crater.

These mountains are frequently obscured by cloud. Occasionally, the lower land is covered with haze and Sao Miguel Island appears as two islands when seen from a distance.

The greater part of the N side of the island slopes gradually to the sea, but the other sides of the island are precipitous. The depths on the bank on which the island lies are in many places irregular, especially off the NE and NW ends of the island.

Caution.—When navigating along the coasts of this island, vessels should keep at least 1 mile offshore and remain in depths greater than 35m.

Submarines exercise frequently in the waters lying S of this island.

7.22 Ponta da Ribeira (37°51'N., 25°09'W.), 76m high, is the NE extremity of the island. It is bordered by cliffs and fringed with rocks.

Between Ponta da Ribeira and Ponta Ajuda, 8 miles W, torrents flow through several ravines to the sea and numerous rocks and reefs lie close inshore. Ponta Ajuda is a low and steep-to point behind which the land rises rapidly. A town in which stands a prominent church, with a tower, is situated on the W side of this point.

A shoal, with a depth of 19m, is reported (1992) to lie about 1 mile ENE of this point.

Ponta do Cintrao (37°51'N., 25°29'W.), located 8.3 miles W of Ponta Ajuda, projects 1.5 miles from the general line of the coast and consists of a bold headland, faced by cliffs. A light is shown from a tower, with a dwelling, 14m high, standing on the point.

Between Ponta Ajuda and Ponta do Cintrao, the most prominent points are Ponta da Maia, located 3.7 miles WSW of Ponta Ajuda, and Ponta Formosa, located 2.8 miles ESE of Ponta Cintrao.

Ponta da Maria is a double point with a remarkable narrow ledge of rocks extending a short distance from its NW extremity. A shallow shoal lies 0.6 mile NNW of the point. A landing place is situated on its E side. Ponta Formosa is a rugged point fringed by rocks. Temporary anchorage can be obtained, in a depth of 31m, sand, off a small bay about 0.6 mile ENE of the point.

Ponta da Ribeirinha, narrow and cliffy, lies close W of Ponta do Cintrao and is fringed by above-water rocks. Ribeira Grande, a town, is situated on rising ground, 1.5 miles SW of the point. A conspicuous conical hill, 187m high, stands close E of it.

Temporary anchorage may be obtained, in a depth of 64m, about 1.5 miles N of the town.

Rabo de Piexe, a small town, stands at the head of a cove which is entered 3 miles W of Ribeira Grande. A light is shown from a church tower, 28m high, standing close E of the head of the cove. Anchorage may be obtained, in a depth of 35m, about 0.4 mile N of the town.

Morro de Capelas, located 5 miles WNW of Rabo de Piexe, is a small peninsula, 105m high, faced with perpendicular cliffs which have been undermined by the sea. A light is shown from a landing place situated in a cove, which is entered close W of the peninsula. Anchorage may be obtained, in a depth of 35m, about 0.5 mile N of the light.

Ponta da Bretanha, the N extremity of Sao Miguel Island, is located 6 miles NW of Morro de Capelas. It is 116m high, faced by cliffs, and fronted by rocks. A landing place, marked by a light, is situated at a town which stands in a cove entered 1.5 miles ESE of the point.

Ponta dos Mosteiros, low and fringed by rocks, is located 1.7 miles WSW of Ponta da Bretanha. A light is shown from a column, 4m high, standing on this point. Ilheu dos Mosteiros, a dark and cliffy islet, lies 0.4 mile offshore, 0.7 mile SW of the point.

Ponta da Ferraria (37°52'N., 25°51'W.), the W extremity of the island, is located 2.7 miles SW of Ponta dos Mosteiros and is low, dark, and rugged. A main light is shown from a tower, with a dwelling, 18m high, standing on the point.

Depths of 22m and 33m (existence doubtful) are reported to lie about 1.2 miles WNW and 2.5 miles NW, respectively, of this point.

Ponta Delgada (37°44'N., 25°41'W.), the SW extremity of the island, is located 11.5 miles SE of Ponta da Ferraria. The coast between consists mostly of a continuous line of cliffs.

A main light (Santa Clara) is shown from a framework tower, 8m high, standing on the point and a tank farm is situated above it. An aeronautical light is situated at an airport control tower standing 1.2 miles WNW of the point.

The village of Relva is situated 2.5 miles WNW of Ponta Delgada. A prominent church, which resembles a light tower, stands in the village and a windmill is situated close W of it.

7.23 Porto de Ponta Delgada (37°44'N., 25°40'W.) (World Port Index No. 38100), a port of refuge, lies close E of Ponta Delgada. The city is built on a plain which extends between Ponta Delgada and Ponta do Rosto do Cao, 2.3 miles ENE. It is the principal city of San Miguel and the commercial capital of the Arquipelago dos Acores.

Winds—Weather.—From December through March, S gales affect port operations. With gales from the SE, swells may cause vessel entry and departure to be delayed. With gales from the S and SW, seas frequently break over the breakwater.

Fog is rare, generally occurring only in May and June.

Tides—Currents.—Tidal currents off the harbor entrance set E on the flood and W on the ebb, at a rate seldom exceeding 1 knot, although a rate of 2 knots has been reported (1999).

Depths—Limitations.—The harbor is enclosed between a seawall, which fronts the town, and a large breakwater which extends 0.8 mile E from a point on the shore, 0.5 mile E of Ponta Delgada.

A basin, for the use of recreational craft, is situated in the NE part of the harbor.

The main commercial berths lie along the inner side of the breakwater. The E berth is 617m long and has depth of 11m alongside; the central berth is 207m long and has a depth of 10m alongside; and the W berth is 326m long and has a depth of 6m alongside.

There are facilities for general cargo, container, ro-ro, tanker, and LPG vessels. Generally, vessels up to 250m in length and 11m draft can be accommodated.

Aspect.—Conspicuous landmarks in the city include Forte de Sao Braz, situated at the W end of the harbor; Sao Matriz Cathedral, with a lighted clock tower, situated 0.3 mile NE of the fort; Solmar, a high-rise building, standing 350m E of the cathedral; and the prison, a large white building, standing 0.6 mile ENE of the cathedral.

Prominent landmarks include a factory, with a tall chimney, situated 0.5 mile NE of the breakwater head; a radio mast, 116m high, standing 0.3 mile NNW of the cathedral; and a chimney, standing 0.3 mile W of the fort.

Lighted ranges indicate the approach and the entrance to the harbor and may best be seen on the chart. The dangers lying on the N side of the harbor are marked by a lighted buoy moored about 0.3 mile WNW of the breakwater head.

Pilotage.—Pilotage is compulsory for all vessels except national warships, local vessels, tugs used in the harbor, local dredges, local fishing vessels, and pleasure craft. Vessels should send an ETA at least 48 hours in advance and a con-

firmation at least 2 hours before arrival. Pilots may be contacted on VHF channel 14 or 16 and generally board about 0.5 mile SE of the breakwater for vessels of less than 100m length overall. For vessels greater than 100m in length, the pilot boards 1 mile SE of the breakwater.

Anchorage.—Anchorage may be obtained in two designated anchorage areas, the limits of which may best be seen on the chart.

Anchorage is prohibited inside of the breakwater.

Caution.—Local magnetic anomalies exist in the vicinity of Ponta Delgada.

It is reported that both ranges are difficult to identify in daylight.

7.24 Ponta da Galera (37°42'N., 25°31'W.), the S extremity of Sao Miguel, is located 8.5 miles ESE of Ponta Delgada. The coast between is mostly composed of reddish cliffs with a narrow beach at their base. The point is steep, rugged, and fringed by above and below-water rocks.

The town of Lagoa stands along the shore of a bay, which lies 4 miles NW of Ponta da Galera. A landing place, marked by a light, is situated here. A prominent factory chimney and a conspicuous white silo stand in the W side of the town.

Roida da Praia, located 2.1 miles ENE of Ponta Galera, consists of a ridge of reddish-colored high cliffs. Shoals and rocks extend up to 0.4 mile S of this point. Ponta de Sao Pedro, fringed by rocks, is located 1.1 miles E of Roida da Praia.

Ilheu da Vila, 63m high, lies 0.4 mile S of Ponta de Sao Pedro. This conspicuous islet is formed by an extinct volcano.

Vila Franca do Campo (37°42'N., 25°26'W.) (World Port Index No. 38105), an important town, stands on the brow of the cliffs located between Ponta de Sao Pedro and Ponta da Terejoula, 1 mile E. A small craft basin and a landing place front the town and are marked by a light. Anchorage may be obtained, in a depth of 26m, sand, about 0.7 mile E of Ilheu da Vila.

7.25 Ponta da Garca (37°43'N., 25°22'W.) is located 3 miles E of Vila Franca do Campo. This point is high, steep, and backed by reddish cliffs above which stands a small town. A prominent church, with a tower, stands isolated on the point. A main light is shown from a tower, with a dwelling, 14m high, standing on the point.

Ponta do Faial, high and steep, is located 8.3 miles E of Ponta da Garca. The coast between forms a wide bight which recedes about 1 mile. A light is shown from the village of Povoacao, which is situated in the E part of this bight, 2 miles W of Ponta do Faial. A prominent church stands in the village; anchorage may be taken, in a depth of 22m, about 0.5 mile S of it.

Ponta da Retorta, the SE extremity of Sao Miguel Island, is located 1.7 miles ENE of Ponta do Faial. It is high, steep, and fringed by rocks. Agua Retorta, a prominent 674m high hill, stands 0.8 mile NNW of the point.

Ponta do Arnel (37°49'N., 25°08'W.), located 5.3 miles N of Ponta Retorta, is cliffy and bordered by a wide stony beach. A main light is shown from a tower, with a dwelling, 15m high, standing on the point.

Ponta da Marqueza, 122m high, and Ponta do Lombo Gordo, 489m high, are located 1 mile and 2.8 miles S, respectively, of

Ponta do Arnel. Both of these points consist of steep cliffs and are very prominent.

Ponta da Ribeiro is located 1.8 miles NNW of Ponta do Arnel. The coast between is indented by a conspicuous ravine through which a current runs.

7.26 Ilheus das Formigas (37°16'N., 24°46'W.) lie 35 miles SSE of the SE extremity of Sao Miguel Island and consist of a group of black rocks which stand near the NW edge of a steep-to bank. This bank is composed principally of rock, with frequent patches of white sand, broken shell, and branch coral. The highest rock stands at the N end of the group and attains a height of 11m. A rock at the S end of the group attains a height of 9m. The general outline of the group presents the appearance of a few hummocks.

A light is shown from a tower, 19m high, standing near the S end of the group.

Recife do Dollabarat, a shoal with several rocky heads, lies about 3 miles SE of the S extremity of Ilheus das Formigas and has a least depth of 3.3m.

Caution.—When the sea is calm, this shoal constitutes a great danger to navigation as its presence is not indicated by breakers.

A marine reserve and fishing prohibited area, the limits of which are shown on the chart, has been established in the vicinity of Ilheus das Formigas and Recife do Dollabarat.

7.27 Santa Maria Island (36°58'N., 25°06'W.), the SE island of the archipelago, lies 20 miles SW of Ilheus das Formigas. It is the least volcanic of all the islands in the archipelago and is very fertile. A range of mountains rises abruptly from the SE extremity of the island and terminates at the N extremity. Pico Alto, the highest of this range, stands 4.8 miles NW of the SE extremity of the island. It is a double-peaked mountain, 591m high. The land on the W side of this range falls suddenly and continues flat to the W extremity of the island, where it terminates in cliffs, up to 30m high. When seen from the N or S, the W part of this island appears as a long, low point.

Ponta do Castelo (36°55'N., 25°01'W.), the SE extremity of the island, is high, surmounted by a detached peak, and fronted by sunken rocks. A light (Goncalo Velho) is shown from a tower, with a dwelling, 14m high, standing on the point.

From Ponta do Castelo, the coast trends NNW for 4 miles to Baia de Sao Lourenco. It rises boldly from the sea and is clear of dangers, except for a low above-water rock which lies 0.3 mile offshore, about 1 mile N of Ponta do Castelo.

Baia de Sao Lourenco (36°59'N., 25°03'W.) is entered between Ponta Negra and Ponta dos Matos, 0.7 mile NNE. It has a mostly rocky shore with sandy beaches. Ponta Negra is a high and bold point with Ilheu de Sao Lourenco, a high islet, lying close off it. Ponta dos Matos is faced with low cliffs and fringed by rocks. A shoal, with a depth of 17m (sounding doubtful), was reported to lie about 1 mile ESE of this point.

A town is situated at the head of the bay, 1 mile inland, and numerous houses stand along the shore. A landing place is situated in the N part of the bay. A light is shown from the S part of the bay and the entrance channel is marked by lighted ranges. Temporary anchorage may be obtained, in depths of 24 to 27m, in the middle of the bay.

7.28 Ponta do Norte (37°01'N., 25°04'W.), the NE extremity of the island, is located 1.2 miles NNW of Ponta dos Matos. It is formed by rather low rocks, backed by high land, and is fringed by a reef and several rocks. A light is shown from a column, 4m high, standing on the point. A radio mast, 38m high, stands 0.3 mile SE of the light structure.

Ilheu de Lagoinhas, 76m high, lies 0.3 mile offshore, about 1.5 miles WNW of Ponta do Norte. The passage lying between this islet and the main island is encumbered with rocks. The islet is prominent, bordered by inaccessible cliffs, and depths of less than 10m are reported to lie within 0.3 mile of it. Baixa de Fora, a shoal with a depth of 10.4m, lies 0.8 mile NNW of the islet.

From Ponta do Norte, the coast, consisting of rocky points separated by small bays, trends in a general W direction for 4.2 miles to Ponta dos Frades. This latter point is 46m high and has the appearance of an island when viewed from the E or W.

Ponta do Lobaio (36°59'N., 25°11'W.), the NW extremity of the island, is located 1.8 miles SW of Ponta dos Frades. It is low and surrounded by rocks. Ilheu do Mar da Barca, 14m high, lies 0.3 mile SW of the point.

An aeronautical radiobeacon is situated in the vicinity of this point.

The coast trends 0.8 mile SSW from Ponta do Lobaio and rises slightly to form Ponta do Rachado, the W extremity of the island.

An aeronautical light is shown from an airport control tower standing 1.2 miles SE of Ponta do Rachado.

Ilheu da Vila, 58m high and sheer, lies 200m offshore, 2.8 miles S of Ponta do Rachado. The coast between consists of an almost unbroken line of cliffs. This prominent islet is separated from the main island by a narrow boat passage which has a depth of 4.3m, but is much encumbered by rocks.

Ponta do Malmerendo (37°48'N., 25°13'W.), marked by a light, is located 0.8 mile E of Ilheu da Vila. This point is formed by a cliffy bluff and several storage tanks stand in its vicinity. A patch, with a depth of 15.6m, lies about 0.9 mile SSW of it.

Caution.—An underwater obstruction lies in a depth of 61m, about 6.7 miles WNW of Ilheu da Vila (position approximate).

7.29 Vila do Porto (36°56'N., 25°09'W.) (World Port Index No. 38110), a small harbor, lies in a bay which is entered between Ponta do Malmerendo and Ponta do Marvao, 0.8 mile E.

Tides—Currents.—Tides rise 1.7m at springs and 1.3m at neaps.

Depths—Limitations.—A breakwater extends E from the W shore of the bay. A quay situated on its inner side is 200m long and has depths of 5 to 7m alongside.

Aspect.—The shores of the bay are fronted by cliffs and the head and the E shore are fringed with rocks. A light is shown from a tower, 14m high, standing on the head of the breakwater. The town stands above a sandy beach at the head, and the main airport of the archipelago is situated adjacent to the bay.

Pilotage.—Pilotage is compulsory and available. Pilots can be contacted by VHF and generally board about 1.5 miles S of the breakwater.

Anchorage.—Only small vessels anchor off the bay, as it is open and completely exposed to winds from the SE to SW. The best berth is in a depth of 30m, about 0.3 mile SSW of the breakwater head.

7.30 Baia de Praia (36°56'N., 25°06'W.) lies E of Vila do Porto and is entered between Ponta do Marvao and Ponta Malbusca, 3.5 miles ESE. This bay is fringed by rocks and inaccessible except at its head, where there is a sandy beach above which stands the town of Praia. Landing places are situated along the beach and anchorage can be obtained in the middle of the bay.

Ponta Malbusca is a high point which is dominated by a prominent brown-colored hill, 207m high. Pedrinha, a pinnacle rock over which the sea seldom breaks, lies at the E side of the bay, 1.2 miles WNW of this point.

Between Ponta Malbusca and Ponta do Castelo, 2.5 miles E, the coast consists of cliffs and is fronted by rocks which extend up to 0.3 mile seaward.