

# SECTOR 10

## WEST COAST OF AFRICA—CAP JUBY TO CAP VERT

**Plan.**—This sector describes the W coast of Africa from Cap Juby to Cap Vert. It includes Port-Etienne, on the W side of Baie du Levrier, Nouakchott, and the Senegal River. The descriptive sequence is from the N to S.

### General Remarks

**10.1** The coast of Africa from Cap Juby to the mouth of the Senegal River is arid, sandy, and has no vegetation except for some sparse scrub. The coastline presents no undulations other than flattened sand dunes, the upper parts of which can scarcely be seen at distances of over 3 miles. The vast inland plateau, the surface of which is leveled by the desert winds, terminates at the coast in cliffs in some places and in gradual slopes at others. The cliffs present horizontal layers of various shades of white, the lower layers being of a more reddish tint.

Landslides cause enormous blocks of soil to fall to the base of the cliffs. These blocks resemble large rocks and the sea breaks against them with great violence. After a time, they are dissolved by the water. There is not a trace of granite on this coast as far as Cap Vert.

South of the Senegal River, the coast is formed by dunes and in some places by mounds covered with thick scrub.

**Caution.**—This coast should be given a wide berth, especially at night, as there are few navigational lights. Great care should be taken, especially in the morning, when refraction and mirage effects may be observed.

Oil exploration and production rigs may be encountered off the coasts described within this sector.

Concentrations of fishing vessels may be encountered off the coasts within this sector.

Fog, dense mist, or haze may obscure the coasts within this sector.

The security of vessels off this coast and at some ports is a serious problem. Reports have been received (1986-1990) of firings upon cargo vessels and fishing boats off the coasts of Mauritania and Western Sahara. These attacks have been carried out with rocket propelled grenades and small automatic weapons fired from boats. Vessels should exercise extreme caution.

### Cap Juby to Puerto de Aaiun

**10.2 Cap Juby** (Cap Yubi) (27°57'N., 12°55'W.) is low, sandy, and fringed by rocks. The cape terminates in a small hill, 12m high, and several brown stone buildings of the old town stand close W of it.

The cape is bordered on the SW side by a detached reef which dries at low tide and fronts the town of Tarfaya. Casa Mar, a partly ruined building, stands on the SW extremity of this reef, 0.8 mile SW of the cape. A prominent radio mast stands 0.5 mile ENE of this building.

A main light (Tarfaya) is shown from a tower, 13m high, standing 2.5 miles SW of the cape.

A depth of 14.6m was reported (1967) to lie about 5 miles NW of Cap Juby.

A small harbor, protected by two breakwaters, fronts the town of Tarfaya (Villa Bens). It has a quay, 164m long, with a depth of 6m alongside. The harbor is mostly used by fishing vessels and can be contacted on VHF channel 16. A lighted buoy is reported to be moored 1.2 miles W of the harbor entrance.

It has been reported that the harbor remains closed to commercial shipping.

An airport, with prominent hangars and workshops, is situated close NE of the town of Tarfaya.

Vessels can anchor, in a depth of 13m, about 0.5 mile WNW of Casa Mar. Anchorage can also be taken, in a depth of 30m, farther out.

The coast trends 2.3 miles SW from Tarfaya to Punta del Majorero and then 3 miles SSW to Restinga del Caracol. It is fronted by a bank, with depths of less than 9m, which extends up to 0.8 mile offshore. A prominent stranded wreck is reported to lie 0.7 mile SSW of Punta del Majorero.

Pointe Stafford, located 20 miles SW of Cap Juby, is a low and sandy point which is difficult to distinguish. However, the breakers on the reef, which fronts this point, are normally plainly visible and with N seas and winds are very noticeable. A conspicuous stranded wreck lies close offshore, 7.8 miles SSW of the point.

Medano de Tutarran, located 19 miles SSW of Pointe Stafford, is an isolated sand dune. This dune stands close to the coast and is conspicuous due to the scrub which covers it. A well and several trees are situated close SE of the dune.

A shoal, with a least depth of 6.5m, lies about 2.3 miles NW of Medano de Tutarran.

**Fum el Uad** (27°12'N., 13°23'W.), the mouth of the Saguia el Hamra, is located 13 miles SSW of Medano de Tutarran and can be recognized by a mass of vegetation and a small sand dune, crowned by scrub, standing near it. The Saguia el Hamra is a dry river bed which is watered only during the rainy season as it is dammed upriver at the city of Aaiun (El Aiun).

A shoal patch, with a depth of 2.1m, lies about 1.8 miles offshore, 3.5 miles N of this river mouth.

**10.3 Puerto de Aaiun** (Laayoune) (27°06'N., 13°25'W.), a small port, lies 6 miles SSW of Fum el Uad. It fronts Playa de Aaiun, a slight indentation in the coast, which is bordered to the NW by an area of reefs and shoal depths.

The facilities here are used for the discharging of tankers and for the loading of phosphate.

**Depths—Limitations.**—A barge landing pier is situated off Playa de Aaiun. An oil jetty, marked at its seaward end by a light, extends 1 mile WNW from a point on the shore, 0.8 mile S of the root of the barge landing pier.

A T-headed phosphate loading pier extends 1.5 miles WNW from a point on the shore, 2.5 miles S of the root of the barge

loading pier. It has three berths, with depths up to 17m, and vessels up to 100,000 dwt can be accommodated alongside.

A general cargo pier, with a depth of 8m alongside, extends S from the middle of the phosphate pier. It can accommodate vessels up to 8,000 dwt and 120m in length.

**Aspect.**—The loader at the phosphate pier is conspicuous from seaward.

Prominent landmarks include Medano de Aaiun, which appears over the horizon as a white hill; the harbormaster's office; an old warehouse situated near the barge landing pier; a group of oil tanks standing 1 mile S of the warehouse; and several cranes standing midway along the pier.

At night, the installation lights are always visible; with a clear atmosphere, they can be seen from up to 25 miles off the coast.

**Pilotage.**—Pilotage is compulsory. Pilots board about 0.5 mile off the phosphate terminal and may be contacted on VHF channel 12. Vessels should send an ETA to the port manager 72 hours, 48 hours, and 24 hours before arrival.

**Anchorage.**—Vessels may anchor, in a depth of 10.5m, W of the head of the phosphate pier.

**Caution.**—Dangerous wrecks lie about 2 miles W and NW of the phosphate T-head pier.

Anchorage is prohibited in the vicinity of the submarine pipeline.

## Puerto de Aaiun to Bahia de Rio de Oro

**10.4 Medano de Santiago** (26°55'N., 13°29'W.), a sand dune, stands 11.5 miles S of Playa de Aaiun and is conspicuous due to its size and proximity to the coast. Playa del Medano, a beach, lies W of this dune and is protected from the N by Arrecife del Medano, an extensive drying reef. This beach is bordered to the S by a small, sheer cliff and vessels can anchor, in a depth of 11m, about 1 mile W of it.

Mata del Desgarron, located 10 miles SSW of the beach, consists of several bushes standing near a well; from a distance it appears as a prominent black spot.

Boca de Barlovento and Boca de Sotavento, two conspicuous deep breaks in the cliffs, are located 9.5 and 12 miles SW, respectively, of Mata del Desgarron.

Oasis de Lemsid, situated 8 miles SW of Boca de Sotavento, is conspicuous due to the monotonous uniformity of the coast and appears from the NW as a dark spot. Boca de Jarro, located 8.5 miles SW of the oasis, is a break in the cliffs with a black sand and pebble beach. It appears as a light patch against the line of cliffs.

**El Cabino** (26°25'N., 14°11'W.), a very low point, is located 27 miles WSW of Boca de Sotavento. It is bordered by reefs on which the sea breaks almost continuously. It is reported that the breakers are more noticeable than the point itself. Several stranded wrecks lie in the vicinity of this point.

A light is shown from a tower, 32m high, standing on the point.

A detached steep-to patch, with a depth of 9.5m, lies about 9 miles WSW of El Cabino.

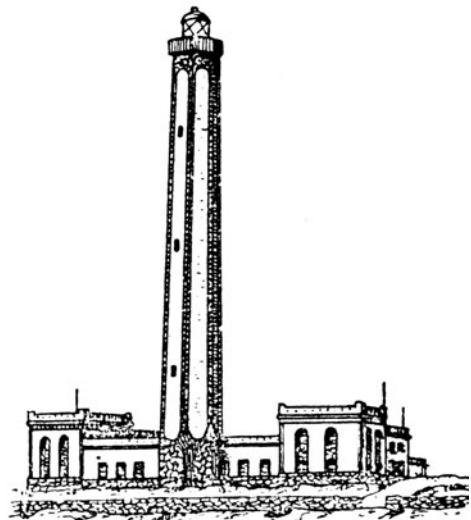
The coast between El Cabino and Cabo Falso Bojador, 15.5 miles SW, is low and fringed by reefs for the first 5 miles. It then rises to a sandy cliff which extends for about 6 miles. The NE part of this flat-topped cliff is known as Los Pajaitos and

the SW part, which is darker in color, is known as Tierra Negro. Playa de Tigri, a low beach fringed by a reef, extends 5 miles from the S end of this cliff to Cabo Falso Bojador.

**10.5 Cabo Falso Bojador** (26°15'N., 14°25'W.) is formed by several tall sand dunes. A stranded wreck lies in the vicinity of this cape and aids in identifying it. A rocky shoal, with a least depth of 4.8m, extends up to 3 miles N of the cape. A rocky patch, with a least depth of 8m, lies about 2 miles W of the cape.

The coast between Cabo Falso Bojador and Cabo Bojador, 10 miles SW, consists of a sandy beach fringed by rocks. Clumps of scrub top the sand dunes which stand about 0.5 mile inland of this beach. Heavy breakers have been observed along this coast at all times.

**Cabo Bojador** (26°08'N., 14°30'W.), a very low point, is located 9.5 miles SW of Cabo Falso Bojador and is bordered on the S side by black rocks. From the N, the cape appears as a mass of red sand with a gradual slope towards the sea. From the W, the cape is difficult to identify, but from the S its extremity appears as a reef which dries in places and is marked by breakers even in calm weather.



**Cabo Bojador Light**

A main light is shown from a tower on a dwelling, 45m high, standing 0.7 mile ESE of the cape. This light has frequently been reported to be extinguished. A light is also shown from a pyramid, 6m high, standing on the W end of the cape.

For 4 miles SSE of the cape, the coast rises gradually and forms steep cliffs up to 20m high; about 2 miles farther S, the cliffs become less steep and are fronted by sandy ground. The first mile of this sandy ground is called Mancha Blanca. It is white and appears as a prominent triangular shape from seaward.

Anchorage, sheltered from winds from the NE and SE quadrants, can be taken, in a depth of 11m, muddy sand, about 1 mile SSW of Cabo Bojador. Small vessels can also anchor, in a depth of 8m, sand, about 0.6 mile S of the cape.

**10.6 El Banquero** (25°46'N., 14°38'W.), located 17 miles SSW of Mancha Blanca, is a low, sandy point which is con-

spicuous only when close to the coast. A stranded wreck lies close N of this point.

The coast between Mancha Blanca and Mesa de la Gaviota, located 2.5 miles S of El Banquero, consists of sand dunes and is bordered by a reef-fringed beach. Mesa de la Gaviota is formed by precipitous cliffs up to 30m high.

Depths of 5 to 8m lie up to 1 mile offshore along this stretch of coast.

La Malvina, a rocky reef with a least depth of 3.1m, extends up to 2 miles NNW of El Banquero. The sea breaks on this reef, even with a light sea and swell.

**Punta del Corral** (25°36'N., 14°41'W.) is located 8 miles SSW of Mesa de la Gaviota. A light is shown from a tower, 11m high, standing on the point.

Ensenada de los Corrales is entered close N of the point and is bordered on its N side by Restinga de la Vaca, a yellow sandy shoal, on which the sea always breaks and on which a prominent stranded wreck lies. Anchorage can be taken, in a depth of 11m, within this indentation.

A rocky bank, with a least depth of 21m, lies centered 9 miles SW of Punta del Corral.

The coast between Punta del Corral and Punta del Estante, 25 miles SSW, is formed by cliffs, 45 to 60m. Several stone pillars, 4m high, surmount these cliffs and are visible from up to 5 miles seaward.

**Punta Cordero** (25°21'N., 14°49'W.), located 17 miles SSW of Punta del Corral, is a rocky point on which the sea breaks heavily. It is very conspicuous, especially from the S. A small beach, with a large black rock in its N part, lies close N of the point. Another black rock, which is shaped like a tower, stands on the cliff behind this beach.

A dangerous wreck is reported to lie about 1 mile WSW of the point.

**Caution.**—A magnetic anomaly has been reported to exist within an area lying about 80 to 100 miles W of this section of the coast.

**10.7 Cabo Pena Grande** (25°05'N., 14°51'W.), located 15 miles S of Punta Cordero, consists of a conspicuous cliff, 147m high. It rises in three tiers which are more visible from the N than from the S. This cape is a very good landmark as it is higher than the other cliffs in the vicinity.

A light is shown from a tower, 11m high, standing on the cape. Morro del Ancla, a salient spur, lies 0.5 mile SSE of the light and appears to be a continuation of the cape.

Good anchorage, sheltered from N winds by cliffs up to 80m high, is available, in depths of 11 to 13m, close SE of the cape.

The coast between Pena Grande and Punta del Pulpito, 21 miles S, consists of continuous cliffs. These are interrupted at La Teja, a depression located 2 miles SE of Pena Grande, and at Buen Jardin, a small river valley located 9 miles farther S.

Monte Sal, a small conical mountain, stands 1.5 miles N of Buen Jardin. It is 120m high and very conspicuous.

Bahia de Garnet (Angra de los Ruivos) is a bay lying between Punta del Pulpito and Punta Siete Cabos, 8.5 miles SW. Uad Craa, a river, flows into the N part of this bay. The beach, which forms the mouth of the river, is divided into two sections by a small and prominent hill which is fronted by a reef.

Good anchorage is available within all parts of this bay. The best berths are in depths of 7 to 20m, between 0.2 and 0.6 mile off the N part of the beach.

From Punta Siete Cabos, the cliffy coast trends S for 4.5 miles to Playa de las Canuelas. This sandy beach extends 8 miles WSW and is marked by breakers. El Camelitto, formed by two flat-topped sand dunes, lies at the SW end of the beach.

**Cabo Leven** (24°29'N., 15°10'W.) is located 13 miles SW of Punta Siete Cabos. From this cape, the coast extends in a SW direction for 35 miles to Punta Elbow. This stretch of shoreline, known as Las Almenas, consists of uniform and moderately high cliffs, without any conspicuous points.

A patch, with a depth of 10m, lies about 1.5 miles offshore, 13 miles SW of Cabo Leven.

Dangerous wrecks are reported to lie about 8 miles N, 5.5 miles NNW, and 12.5 miles SW of Cabo Leven.

To facilitate the survey of this section of coast, several stone pillars, 10m high, stand along the top of the cliffs between Cabo Leven and Punta Elbow.

**Caution.**—Several wrecks, some dangerous, lie up to 17 miles seaward of this stretch of coast and may best be seen on the chart.

**10.8 Angra de Caballo** (24°04'N., 15°35'W.), a small bay, is formed close S of Punta Elbow and is bordered by a white sandy beach which is 1.5 miles long and breaks the line of cliffs. This bay is bordered on the N side by a point which terminates in an overhanging peak. Anchorage may be taken, in depths of 6 to 7m, gravel, within the bay, but the sea always breaks on this coast.

The coast to the SW of Angra de Caballo changes in appearance and all uniformity ceases. The cliffs give way to a sloping sandy plain which is covered with sand hills. Some of these hills, which are generally conical, are isolated, but others stand in groups.

**Roca Cabron** (Monte de la Decepcion) (23°55'N., 15°48'W.) is located near the N end of the Peninsula de Rio de Oro, 15.5 miles SW of Punta Elbow. It consists of an enormous mass of rock and sand and is a good landmark, appearing as an island from seaward. A low and sandy beach, 1.5 miles long, extends S of Roca Cabron.

Isla Herne, located 3.2 miles SSE of Roca Cabron, lies near the head of Bahia de Rio de Oro. It is flat-topped, 20m high, and can be seen over the peninsula.

The Peninsula de Rio de Oro, 9m high, extends 23 miles SW and is joined at its N end to the mainland by a sandy isthmus. This isthmus is sometimes partly covered due to the tides. The peninsula becomes lower nearer to Punta Durnford, its SW extremity.

**Arcipres Grande** (23°44'N., 15°57'W.), located 14 miles SW of Roca Cabron, is a small promontory which is the most conspicuous point along this part of the peninsula.

A main light (Arcipres Grande) is shown from a prominent tower, 50m high, standing on this promontory. A disused lighthouse stands on the summit of a small hill, close N of the light. A prominent line of small forts crosses the peninsula, 2.5 miles NE of the light.

A dangerous wreck is reported (1989) to lie about 16 miles W of Arcipres Grande.

The town of Dakhla (Villa Cisneros) is situated on the E side of the peninsula, 2 miles SE of Arcipres Grande. It is conspicuous from seaward and has a church, a fort, several airport installations, and several radio masts.

A light is shown from a tower, 6m high, standing on Punta Galera, the S extremity of the peninsula, which is located 0.8 mile SE of Punta Durnford.

Punta de la Sarga is located 1 mile ESE of Punta Galera. It is a low and sandy point and is the SE extremity of the peninsula.

A wreck lies about 0.7 mile S of Punta Galera; it is reported to be marked by eddies even at low tide.

## Bahia de Rio de Oro

**10.9 Bahia de Rio de Oro** (Bahia Villa Cisneros) (23°37'N., 15°59'W.) is entered between Punta de la Sarga and Punta del Pescador, 7 miles S. The entrance is nearly blocked by an extensive and shallow sand bank on which the sea breaks. The bay is also encumbered with sandbanks, some of which dry in places.

Vessels should approach the entrance by passing S of the sand bar which extends S of Punta de la Sarga. A main channel then extends NE and provides access to the bay and to the small port of Dakhla (Villa Cisneros).

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

Off the entrance to the bay, the flood current sets E and the ebb current sets W, with rates up to 2.5 knots. Inside the bar, the tidal currents attain rates up to 2.6 knots, but strong eddies are sometimes formed on the sand bar at the commencement of the flood current. It is reported that the tidal currents set very strongly over the bar and shoals, breaking violently and indicating their locations.

**Depths—Limitations.**—The entrance channel to the S of Punta de la Sarga has depths of 3 to 10m, but is subject to frequent changes due to the strong tidal currents. Within the bar, the main channel has depths of 13 to 22m.

A main wharf extends SE from Dakhla and forms a harbor basin which is mostly used by fishing vessels. There is 480m of total quayage, with depths of 4 to 6.7m alongside. Vessels of up to 100m in length and 12m beam can be accommodated. It was reported (1984) that the maximum draft permitted to cross the bar was 4.5m.

**Aspect.**—Punta de El Aargub is located on the E side of the bay, 9 miles NE of Punta del Pescador. A prominent building and a house, in ruins, stand on the summit of this point. In addition, conspicuous buildings of a military post stand 0.7 mile S of the point.

Lighted buoys moored SW and SE of Punta de la Sarga mark the entrance to the main channel. The fairway is marked by lighted and unlighted buoys.

**Pilotage.**—Pilotage is compulsory for vessels over 100 grt. Pilotage may be requested on VHF channel 12 or 16 from Dakhla from 0800 to 1300 and from 1530 to 1900. Pilots usually board about 1 mile S of Punta Durnford.

**Regulations.**—The following instructions have been issued by the Royal Moroccan Navy for all vessels entering the port of Dakhla (Villa Cisneros):

1. Vessels must send an ETA 48 hours in advance.
2. Vessels must request clearance to enter the port.

3. Vessels must request pilot services in advance.

Failure to comply with the above instructions may disturb port traffic and create difficulties for the subject vessels.

**Anchorage.**—Anchorage outside the bar can be obtained, in a depth of 13m, about 0.5 mile SW of Punta Galera, but local knowledge is required.

**Caution.**—Buoys are frequently moved to mark the shifting channel.

Local knowledge is necessary to navigate the channels leading N of Dakhla and in the E part of the bay.

## Bahia de Rio de Oro to Baie du Levrier

**10.10 Punta del Pescador** (23°31'N., 15°59'W.) is low and sandy. It is easily recognized from the N or the S, but is difficult to distinguish from the W against the coastline.

Between Punta del Pescador and Morro del Ancla Chica (Morro Ancla Chica), 12 miles SSW, the coast is bordered by flat-topped cliffs. A sandy beach backed by sand dunes extends 17 miles farther SSW to Puntilla de las Raimas.

Morro del Ancla Chica is very conspicuous, especially from the N, as it stands out against the sandy beach. Shoals, with depths of less than 10m, lie up to 4.5 miles seaward of this section of coast.

El Bajon, a sandy shoal with a least depth of 10.4m, lies parallel to the coast, about 7 miles NW of Morro del Ancla Chica. A detached patch, with a depth of 14.6m, lies about 18 miles WSW of the same point.

An unlighted buoy, which marks a wreck, is reported (1990) to be moored about 14 miles WSW of Morro del Ancla Chica.

Puertillo del Tio Quesada, located 7.5 miles SSW of Morro del Ancla Chica, is a small and prominent indentation in the coast, at the mouth of a river.

Puntilla de las Raimas is located 17 miles SW of Morro del Ancla Chica. A light is shown from a tower, 10m high, standing on the point.

Several rocky shoals extend up to 2.5 miles SSW of the point. Bajo El Tortugo, the outer shoal, is the most dangerous as the sea does not always break on it.

A shoal patch, with a depth of 8m, lies about 8.5 miles W of Puntilla de las Raimas.

**10.11 Bahia de Angra de Cintra** (Golfo de Cintra) (23°00'N., 16°15'W.) is entered between Puntilla de las Raimas and Puntilla Negra, 10 miles SSW. This S entrance point is dominated by Las Talaitas, which is formed by three conspicuous hills and stands close S.

Foul ground, on which the sea always breaks, extends up to 1 mile N and W of this S entrance point. Bajo Ahogado, with a least depth of 7.5m, lies in the middle of the N entrance to the bay.

A lighted range, situated on the E side of the bay, indicates a channel which leads in depths of 9 to 11m, between Bajo El Tortugo and Bajo Ahogado.

Bajo del Medio Golfo, an extensive shoal, has a least depth of 5.5m and lies between Bajo Ahogado and Puntilla Negra. A channel leading into the S part of the bay lies S of Bajo Medio Golfo.

It is reported that numerous fishing vessels use this bay for shelter.

Anchorage, sheltered from N winds, but not from the W swell, can be taken, in a depth of 11m, ESE of Bajo el Tortugo. Anchorage, with local knowledge, can also be taken, in a depth of 8m, SE of Punta de las Raimas. This berth is sheltered from W and NW winds.

Dunas de Cintra, which is composed of three or four prominent sandhills, is located 10 miles S of the bay. It is 152m high and serves as a useful landmark when approaching from the S.

**10.12 Bahia de Gorrei** (22°50'N., 16°19'W.), entered 5 miles S of Puntilla Negra, offers shelter from all winds, including those from the W. Morro de Gorrei, a reddish cliff, stands close SE of the N entrance point of this bay. It is 15 to 20m high and very conspicuous.

The N entrance point is bordered by reefs which continually break and have depths of less than 5m extending up to 0.8 mile SW. Reefs also border the S part of the bay and continually break.

Anchorage can be taken, in a depth of 8m, muddy sand and weed, about 0.5 mile S of Morro de Gorrei. Local knowledge is required.

**Cabo Barbas** (22°19'N., 16°41'W.) is high and cliffy with depths of less than 20m lying up to 1 mile offshore. A light is shown from a conspicuous tower, 40m high, standing on the point.

Morro Falcon, located 9 miles E of the cape, is flat-topped and 31m high. This hill is prominent and resembles a fort.

Bahia de San Cipriano, lying between Cabo Barbas and Morro Falcon, is not recommended as an anchorage as it is exposed to the prevailing N winds, heavy swell, and S currents.

Punta Galha is located 9 miles SW of Cabo Barbas. The coast between consists of series of cliffs, up to 24m high. Depths of less than 20m lie up to 1 mile offshore along this stretch. The point terminates in a bare plateau, 20m high, and is difficult to distinguish.

Islote Piedra Galha (Roque Chico), located 2.3 miles W of Punta Galha, is a steep islet with an almost flat summit, 20m high. At a distance of about 10 miles, this islet resembles a vessel under sail. From the N, the islet may be mistaken for Punta Galha which has almost the same profile. In bad weather, the sea breaks directly on this islet.

Islote Virginia (Roque Grande), a flat islet, is located 2.5 miles SSW of Islote Piedra Galha. It is 6m high and difficult to distinguish against the land.

Both of the above islets lie on a reef, fronted by foul ground, which extends up to 6 miles SSW from Punta Galha. These islets should be given a berth of at least 3 miles.

**10.13 Cabo Corbeiro** (21°48'N., 16°59'W.) is located 27 miles SSW of Punta Galha. The coast between consists of one continuous stretch of white sand, which rises in some places to peaked hills and in others slopes gently to the sea, with a few cliffs here and there. The whole stretch has no vegetation other than some shrubs which appear as dark spots on the sand.

Cabo Corbeiro is formed by a rocky cliff, which terminates in a low point on which the sea breaks. Several large rocks lie at the foot of this cape.

Bahia de Santa Ana, a slight indentation, is entered close N of Cabo Corbeiro. It is fringed by a white sandy beach which extends for 7 miles and is bounded on the N side by a dark point surmounted by a low cliff. Las Canteras, a group of dark rocks, divides the bay into two parts and forms a good landmark, showing up darkly against the sand. A shoal, which breaks heavily, lies in the middle of the bay, about 1 mile offshore.

Puerto Nuevo (Boca del Bialogo), a small bay, lies close S of Cabo Corbeiro and is sometimes used by fishing vessels. It is bordered at the S end by a dark and cliffy point.

The coast to the S of Puerto Nuevo consists of white and red sandy slopes which terminate in sandy beaches or steep cliffs, 20 to 40m high. These cliffs have been worn at their bases to such an extent that caves and small islets have been formed.

About 7 miles S of Cabo Corbeiro, the coast is steep and a small prominent rock lies close off it. Farther S and about half-way up the sand hills are several distinct white patches; the N of these patches is the most conspicuous. A prominent cliff stands 10 miles farther S.

**10.14 Presqu'ile du Cap Blanc** (Peninsula del Cabo Blanco) (21°00'N., 17°03'W.) extends 26 miles S to Cap Blanc, its S extremity, and terminates in a plateau. The military post at Nouadhibou (Port Etienne) is situated 9.5 miles N of Cap Blanc and can easily be seen from seaward. The most conspicuous objects at the post include a square building; four radio masts, 80m high; and a water tower.

Cabo Dubouchage, located 5.6 miles NW of Cap Blanc, is low and has patches of vegetation on it. A conspicuous conical tower, with a large sand dune close S of it, stands in the N part of a bight which extends 4.5 miles N of the cape.

Dark rocky cliffs, on which the sea breaks heavily, extend 1.3 miles SSE of the cape to Punta Guera. Falso Cabo Blanco lies midway between the cape and this point.

Depths of 18.3m and 9.1m lie about 1.5 miles and 0.5 mile W, respectively, of Falso Cabo Blanco.

Punta Guera, a small and rocky promontory, is surmounted by several buildings. A light is shown from a tower, 6m high, standing on the point. A large building and a pylon, which are only visible from the S, stand 0.7 mile NE of the point.

Anchorage can be obtained, in a depth of 15m, about 0.5 mile SSW of Punta Guera. This berth is frequently used by fishing vessels.

A dangerous wreck is reported (1989) to lie about 0.3 mile SE of Punta Guera.

The coast between Punta Guera and Cap Blanc, 4.2 miles SW, first consists of a series of small sandy and rocky bights and then becomes cliffy as the cape is approached.

**Caution.**—It is reported (1980) that navigation and fishing are prohibited within an area extending up to 13 miles from the coast between Punta Guera (20°49'N., 17°06'W.) and Agadir (30°24'N., 9°38'W.). Vessels must receive permission from local authorities to enter and navigate within this zone.

**10.15 Cap Blanc** (20°46'N., 17°03'W.) is composed of cliffs which are subject to crumbling and are gradually been worn away by the sea; landslides are frequent. When seen from the SW or W, the cape appears as a white plateau with its extremity falling vertically to the sea.



Cap Blanc Light

A light is shown from a prominent tower, 20m high, standing on the cape. Ruined beacons stand on the S extremity of the cape and 0.3 mile NW of it.

**Caution.**—Several dangerous wrecks lie in the approach to Cap Blanc and may best be seen on the chart.

Depths of less than 20m extend up to 7 miles SW of the cape.

A local magnetic anomaly is reported to exist in the vicinity of the cape.

The boundary between Western Sahara (controlled by Morocco) and Mauritania lies in the vicinity of the center of the Peninsula del Cabo Blanco.

### Baie du Levrier (Levrier Bay)

**10.16** Baie du Levrier, one of the largest bays on the W coast of Africa, is entered between Cap Blanc and Cap Sainte-Anne, 21 miles ESE. It is encumbered with numerous banks and shoals, and vessels with drafts over 6.1m must navigate with caution, except when proceeding to Baie de Cansado. The approach to this latter bay is deep with good landmarks.

Point Central, an important ore-loading facility and petroleum terminal, is situated 3 miles N of Cap Blanc. The port of Nouadhibou (Port Etienne) lies 5 miles farther N.

**Winds—Weather.**—At Nouadhibou, the winds are fresh, especially from March to October, and often laden with sand. The wind generally blows from the NNE in the morning and decreases in intensity at midday. It usually veers to the NNW in the afternoon and becomes stronger. After sunset, it becomes weak again and blows from the N.

From November to January, there is a noticeable swell which can hamper commercial operations. This swell, usually from the SE, increases in force during mid-morning and then decreases at noon. Occasionally during September, strong gusts of wind blow from the E and SE.

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

In the N approach to the bay, the flood current sets SE at rates up to 1.5 knots while the ebb current sets NW at rates up to 0.5 knot.

The flood current rounds Cap Blanc and sets N along the W side of the bay. In the vicinity of the cape, it has a maximum

rate of 3 knots in summer. The ebb current sets in the opposite direction and has a maximum rate of 2.3 knots.

At Point Central, the flood current sets N, with a maximum rate of 1.5 knots, and the ebb current sets S, with a maximum rate of 2.5 knots. In the channel close E of Cap Blanc, the flood current sets NE and the ebb current sets SW.

In Baie de Cansado, the tidal currents are imperceptible, except in the shallow basin at the NW corner, where they sometimes attain rates of 4 to 5 knots.

In the N part of Baie du Levrier, the flood current sets N and the ebb current sets S. In the S part of the bay, the flood current sets E and, at a position 2 miles S of Cap Blanc, is gradually deflected to the S. The ebb current sets NW at Cap Sainte-Anne and is gradually deflected W as Cap Blanc is approached. It then turns S after the cape. Both currents have a maximum rate of 1.3 knots.

**Depths—Limitations.**—Banc du Milan, with a least depth of 8.8m, lies between 1.5 and 2 miles WSW of Cap Blanc. Bancs de L'Estafette, with a least depth of 10m, is extensive and extends up to 4.5 miles SSW of Cap Blanc. Bancs de la Sentinelle, with a least depth of 12m, is detached and lies centered 7 miles SSW of Cap Blanc.

Banc du Cap and Banc de la Bayadere, with depths of less than 8m, extend up to 3.8 miles S of Cap Blanc. Petit Banc, with a least depth of 12m, lies 4.5 miles SSW of the cape.

Banc du Goeland lies 5 miles SE of Cap Blanc and has a least depth of 5.1m at its SW end. Banc Vilmorin, with a least depth of 3.7m, lies 2 miles S of Banc du Goeland.

Banc du Levrier extends E and NE of Cap Blanc and has a least depth of 3.2m near its SW end. It is separated from the cape by Passe du Levrier, which is 1.4 miles wide. Banc de la Corbine and Banc du Lezard, with least depths of 5.4m and 6.7m, respectively, extend up to 6 miles N of Banc du Levrier.

Generally, the banks fronting the shores are much wider on the E side and at the head of the bay than on the W side.

Point Central has an L-shaped jetty, with an ore loading terminal in the N part and a tanker terminal in the S part. The ore berth has a depth of 16m alongside and consists of a platform, 20m wide, which rests on eight large dolphins. Vessels are moored against large pontoons secured to these dolphins.

Vessels up to 310m in length and 47m beam can be handled. Vessels up to 150,000 dwt can be accommodated, although all vessels greater than 100,000 dwt must have prior approval by the authorities for entry. The recommended draft for large vessels in ballast or partially loaded is 12m on arrival. The maximum draft permitted at departure is 16.1m, depending on the stage and range of tide.

The tanker berth consists of a light platform resting on three dolphins. Tankers up to 140m in length can be handled.

At Pointe des Mouettes, 1 mile N of Point Central, a T-head oil jetty extends ESE from the shore. This jetty can accommodate tankers of 50,000 dwt with drafts up to 11.5m. It was reported (1985) that a fuel pier extends from the shore, close S of this oil jetty.

At Nouadhibou (Port Etienne), a commercial pier, 125m long, is connected to the shore by a bridge, 150m long. At the outer berth of this pier, vessels up to 160m in length and 7m draft can be accommodated. At the inner berth of this pier, vessels up to 80m in length and 4.5m draft can be accommodated.

It was reported (1995) that a quay extends N from the root of the commercial pier. There are two berths, with a total quayage length of 1,100m, with alongside depths of 4.9 to 5.8m at the N end of the quay. Vessels up to 16,000 dwt can be accommodated.

It is reported (1989) that LPG vessels up to 100m in length can also be accommodated. Cargo can also be handled by lighters from vessels at anchor. A fishing quay, 550m long, with a depth of 6m alongside, extends N from the commercial pier.

**Aspect.**—The outer approach is marked by Lighted Buoy No. 0, which is moored 6 miles SSW of Cap Blanc. It is reported that this buoy is equipped with a racon. Lighted Buoy No. 2 is moored about 3 miles SSE of the cape.

A recommended route, which may best be seen on the chart, is marked by lighted buoys and leads NE past the outer lighted buoy. This route turns NNW towards the cape in the vicinity of Lighted Buoy No. 2 and then leads NE into Passe du Levrier.

The W side of Baie du Levrier, from Cap Blanc to Pointe de Cansado, 5 miles N, consists of cliffs, 10 to 20m high.

A light is shown from a building, 4m high, standing on Point de Cansado. The town is situated close SW of the light; a conspicuous water tower, marked by obstruction lights, stands 0.7 mile SSW of it.

The E shore of the bay is low and consists mainly of sandy beaches and mud flats. Sand hills, composed of fine shifting sand, stand behind the shore and are separated from it by a shallow basin which fills at springs. This part of the coast, being the edge of the Sahara Desert, is quite devoid of vegetation.

Baie de Cansado opens between Pointe de Cansado and Pointe Rey, 4 miles N. Two conspicuous towers stand in the S part of this bay, 2 miles NW of Pointe de Cansado. A light is shown from a prominent structure standing near Pointe Chacal at the head of the bay.

Farther N, the military post and radio masts previously described in paragraph 10.14 with Presqu'île du Cap Blanc are also conspicuous.

An aeronautical light is shown from a tower standing in the vicinity of the airfield, 1.2 miles NW of Pointe Rey.

An approach channel, marked by buoys, is entered about 2 miles N of Pointe de Cansado and leads to the dredged area and facilities at Nouadhibou. A stranded wreck (Chasseloup-Laubat) lies on the N side of this channel and is always visible.

**Pilotage.**—Pilotage is compulsory for vessels bound to and from the ore terminal at Point Central and optional for vessels heading to the port of Nouadhibou (Port Etienne). Pilots can be contacted on VHF channel 16 and generally board in the vicinity of Lighted Buoy No. 2, about 3 miles SSE of Cap Blanc.

Vessels should send an ETA message 72 hours and 24 hours in advance. It should be addressed to Snim-Cominor Nouadhibou coast radio station (5TA) or Dakar radio (6VA). Vessels awaiting a pilot may anchor about 1 mile NE or 0.5 mile ESE of Lighted Buoy No. 2.

**Regulations.**—Deep-draft vessels, with drafts of 9m or more, have the right of way in the channel between Lighted Buoy No. 2 and Point Central. These vessels must display the appropriate signals as per the International Regulations (72 COLREGS).

**Anchorage.**—Anchorage can be taken anywhere in the channel between Banc du Levrier and the W shore of the bay. There are depths of 11 to 15m and the bottom is generally muddy in the deeper parts of the channel, but the sea is rough when the tidal currents and the wind are opposed.

Anchorage can also be taken in Baie de Cansado over a bottom of soft mud. Vessels anchor according to draft, but it is best to moor as near as possible to the land because of the trade winds. Vessels must be careful to avoid the numerous wrecks which lie in the N part of this bay. Large vessels can anchor within an area dredged to a depth of 7.5m, about 300m SE of the commercial pier; cargo may then be handled by lighters.

**Caution.**—Anchoring is prohibited in an area, with a radius of 1 mile, centered on the NE extremity of the ore terminal.

When the strong trade winds blow, the air is laden with sand which almost prevents the landmarks from being seen.

Numerous wrecks, some dangerous, lie in the approaches and within the bay and may best be seen on the chart.

There is an abundance of fish in the bay. The quantity of sardines being so great that schools of these fish have sometimes been mistaken for dangers.

It has been reported on numerous occasions that the lighted aids in the approaches have been extinguished.

It has been reported that fishing boats often anchor in the approaches to the bay and frequently are unlighted.

Several dangerous wrecks lie close to the dredged channel, which leads to the facilities at Nouadhibou, and may best be seen on the chart.

## Baie du Levrier to Nouakchott

**10.17 Cap Sainte-Anne** (20°41'N., 16°41'W.) is formed by a low and rocky plateau, 12m high. It is marked by a stone tower and a beacon and is the only conspicuous landmark along this section of the coast. A prominent flat-topped hill stands 1.3 miles E of the cape.

Ile des Pelicans, located 2 miles N of the cape, is surmounted by a small but prominent dune.

The coast between Cap Sainte-Anne and Cap d'Arguin, 12 miles SE, consists of sand dunes. The latter cape is very low and is marked by a beacon. Baie d'Arguin opens E of this cape.

**Basse Garrigues** (20°17'N., 17°13'W.), lying 31 miles SSW of Cap Blanc, has a least depth of 11m. A shoal, with a least depth of 11.3m, lies about 14 miles farther SSW. Several wrecks lie in the vicinity of Basse Garrigues and may best be seen on the chart.

**Banc d'Arguin** (20°10'N., 16°50'W.) borders the coast lying S of Baie du Levrier for a distance of about 80 miles and extends as far as the approaches to Cap Timiris (19°23'N., 16°32'W.).

The maximum width of this bank is 50 miles. The hydrography of this region is incomplete and vessels are advised to keep in depths of at least 30m.

The bottom on the bank is hard with a covering of sand and broken shells. No drying places have been seen on the bank, but there is evidently not much water over it, as breakers have been observed in places. The tidal currents in the vicinity of the bank attain rates up to 1.5 knots, and in addition, eddies render the steering of a vessel difficult.

The utmost vigilance should be observed when passing or approaching Banc d'Arguin. The water in the locality is often discolored. It appears brown, green, and sometimes reddish.

Fishermen with local knowledge and familiar with the route across Banc d'Arguin (Baie du Levrier to Baie de Saint-Jean) are reported to be available at Nouadhibou.

**10.18 Cap Timiris** (19°22'N., 16°32'W.) is the extremity of a peninsula which is marshy on its N and W sides. The central ridge of this peninsula consists of small sand dunes and terminates to the W in a white dune, 7m high. The peninsula is difficult to identify from the S, when only this dune shows above the horizon like a white islet. A conspicuous house stands at El Memrhar, 2 miles SE of the cape.

Baie de Saint Jean, which is reported to offer shelter to small craft from all winds, is entered between Cap Timiris and the SW side of Presqu'île de Thila, 4 miles NE. The latter is a peninsula, 15m high.

Between Cap Timiris and Piton de Chedallah, 33 miles SE, the coast consists of sand hills, oriented perpendicular to the shore. These hills are separated by sebkhas or shallow lagoons.

The twin dunes of El Mahara, 35 and 39m high, stand 23 miles SE of Cap Timiris. They are reddish in color and very conspicuous from the S to SW.

Piton de Chedallah, 35m high, appears in the shape of a truncated cone. It is an especially noticeable reddish color and stands out against the dunes in the background when viewed from the W.

South of Piton de Chadallah, the dunes become lower and are no longer perpendicular to the coast.

**Mottes d'Angel** (18°39'N., 16°08'W.), a group of dunes, stands 18.5 miles SSE of Piton de Chadallah. Dune de Lemsid, 19m high, is the most conspicuous dune of this group because of its white color and rounded summit.

Baie de Tanit, lying 4 miles S of Dune de Lemsid, provides shelter for small vessels with local knowledge. Vessels can anchor, in a depth of 5m, about 1 mile offshore. This indentation is open, but is protected by shoal banks to the N, S, and W. It is reported to be often frequented by fishing craft from October to June.

A prominent stranded wreck lies on the beach, about 6 miles SSW of this indentation.

Banc de Ferrat, with a least depth of 7m, lies 5 miles offshore, about 10 miles SSW of Baie de Tanit.

**Coppolani** (Djereida) (18°19'N., 16°03'W.), a prominent military post, is situated 16 miles S of Baie de Tanit and consists of a white enclosure and a large warehouse.

Tarfayat-el-Mansour lies 12 miles S of Coppolani; landing can be made here during good weather.

**10.19 Nouakchott** (18°02'N., 16°01'W.), a small lighterage port, lies 17 miles S of Coppolani. The city of Nouakchott, the capital of the Islamic Republic of Mauritania, is situated 5 miles NE of the port.

**Tides—Currents.**—Tides rise about 2.1m at springs and 1.7m at neaps.

There is persistent ground swell off the port with an amplitude of 0.8 to 2m. The current sets S at a rate of 0.5 knot and reverses itself only a few days during the year.

**Depths—Limitations.**—A pier extends 350m from the shore and is used by lighters. It is unsheltered and has depths of 7 to 8m alongside the outer end. In addition, four mooring buoys, used by lighters, lie close S of the head of this pier.

An offshore tanker berth, consisting of several mooring buoys, lies in a depth of 9m, 0.3 mile NW of the head of the pier. A submarine pipeline extends ESE from the berth to the shore.

**Aspect.**—In clear weather, the buildings of the city and an old fort can be seen from seaward. An aeronautical radio-beacon is situated in the vicinity of an airfield, close S of the city. A prominent radio mast, 60m high, stands 6 miles N of the pier.

**Pilotage.**—Pilotage is compulsory. Pilots can be contacted on VHF channel 10 and 16.

**Anchorage.**—Anchorage can be taken, in depths of 8 to 10m, within 1 mile W of the pier. The bottom is hard sand with good holding ground. Vessels should avoid anchoring in the vicinity of the submarine pipeline or tanker berth.

**Caution.**—Several dangers, including wrecks and obstructions, are reported to lie between S and SW within 1.5 miles of the pier.

The rapid onset of bad weather should carefully be observed, since the coast offers no shelter. It is recommended that vessels must at all times be capable of proceeding to open sea as the port is subject to sudden and rapid development of bad weather.

**10.20 Port d'Amitie** (18°00'N., 16°02'W.) is situated 2.5 miles S of Nouakchott pier. It consists of a causeway, which extends 0.3 mile W from the shore, and a pier which extends 0.3 mile WSW from the outer end of the causeway. A breakwater extends 200m SSW from the outer end of the pier.

**Depths—Limitations.**—Two berths, situated on the S side of the pier, have depths of 9.8m alongside. In addition, a berth, situated at the outer end of the S side, has a depth of 10.3m alongside. A turning circle, 400m in diameter, lies close S of the pier and has a depth of 10m. An approach channel, with a depth of 10m, leads to this turning circle and the berths. Vessels up to 15,000 dwt can be accommodated alongside.

It has been reported (1999) that these depths are no longer maintained by dredging.

**Aspect.**—A lighted buoy is moored 1.6 miles W of the head of the breakwater and a lighted range indicates the approach channel. A main light is shown from a column, 37m high, standing close E of the root of the causeway.

**Pilotage.**—Pilotage is compulsory and available only during daylight. The port can be contacted on VHF channel 16.

The pilot usually board 0.5 mile W of the breakwater, or, with prior arrangement, by the Fairway Buoy.

It has been reported that if the wind speed is greater than force 4, pilotage is suspended.

**Anchorage.**—Vessels may anchor, in depths of 12 to 15m, near the outer lighted buoy and N of the entrance to the channel.

**Caution.**—A heavy swell and strong undertows may be encountered within the port.

An area of shallow water lies at the E side of the harbor and is marked by buoys.



## Port d'Amitie to the Senegal River

**10.21 Marigot de Maringouins** (16°36'N., 16°26'W.), the old outlet of the Senegal River, lies 90 miles SSE of Port d'Amitie. The coast between is bordered by low sand dunes and presents almost no landmarks.

The coastal dunes for 10 miles to the S of Marigot de Maringouins are interrupted by a swampy plain. Then the coastal sand dunes, 20 to 30m high, commence again and are generally covered with dark green vegetation.

A stranded wreck lies 2.5 miles S of Marigot de Maringouins and appears as a black rock on the shore.

**Ndiago** (16°10'N., 16°31'W.), a village, stands near the coast with a compact group of coconut trees. A conspicuous pile of scrap iron is reported to stand on the beach in the vicinity of this village.

Anchorage can be taken, in depths of 15 to 20m, off this stretch of coast. The bottom is generally sand or mud. Heavy breakers occur along the shore and it is dangerous to attempt a landing except with local surf boats.

Lingue de Barbarie, a narrow strip of land, extends 12 miles S from the vicinity of Ndiago village and separates the Senegal River from the sea.

The boundary between Mauritania and Senegal lies about 6.5 miles S of Ndiago village.

The city of Saint-Louis is situated 9 miles S of Ndiago and 11.5 miles N of the river mouth.

## The Senegal River—Mouth to Saint-Louis (16°02'N., 16°30'W.)

World Port Index No. 45818

**10.22** The Senegal River is the most important river in the NW part of Africa. During the high river season, it is navigable up to 550 miles above the mouth. However, it is not accessible to vessels of any tonnage due to the bar at the entrance.

Saint-Louis, a city, is situated on an island near the W bank of the river and is connected to Langue de Barbarie, a narrow strip of land, by two fixed bridges. It is also connected to the suburb of Sohr, on the E bank of the river, by the Faidherbe Bridge, which opens. The E side of the city of Saint-Louis is quayed.

The position of the river entrance is very variable. Trade winds, from October to April, extend Langue de Barbarie to the S and the rainy season enlarges the passage. The bar is navigable except for about 80 days per year. The most favorable period is between April and December. During the dry season, the entrance may be closed by the build up of sand. When the rainy season commences, this sand is rapidly washed away. However, passage across the bar should not be attempted without a pilot. The condition of the bar is given upon request by the harbormaster at Saint-Louis, but communications with the harbormaster may only be carried out by giving 24 hours advance notice via Dakar Radio.

**Tides—Current.**—Tides rise about 1.6m at springs and 1.3m at neaps.

The tidal currents are, according to the season, very irregular in force and direction. Rates up to 4 knots have been recorded on the bar.

**Depths—Limitations.**—The depth in the passage over the bar varies with the tide and the floods. The greatest depth rarely exceeds 4m in June and July, but in September, the greatest depth rarely exceeds 2m. The admissible draft varies from 2.5 to 3m.

There are depths of 0.5 to 2m alongside the quays at Saint-Louis. Vessels up to 40m in length and 2.5m draft have been handled. Depths of 5 to 10m lie between 10 and 30m off the quays. The season of highest water is mid-October. Vessels unable to go alongside the quays anchor fore and aft close off them and are connected by gangways. The Faidherbe Bridge has a navigable opening that is 30m wide.

**Aspect.**—The city of Saint-Louis is easily recognized by its buildings which stand among tall trees. The Government House stands in the center and has a distinctive cupola and flagstaff. A conspicuous aqueduct stands 0.3 mile N of Government House. A military complex is located 2 miles S of Government House.

Guet N'Dar Light is shown from a framework tower, 14m high, standing on Langue de Barbarie, W of Government House.

Gandiole Light is shown from a 24m high octagonal tower, with black and white stripes, partially obscured by trees, standing on the coast, 7.5 miles S of Saint-Louis.

The channels leading to Saint-Louis shift frequently; several beacons standing on shore assist the pilot in navigation.

An aeronautical radiobeacon is situated 3 miles NE of Saint-Louis.

**Pilotage.**—Pilotage is compulsory and available only during daylight hours. Vessels must request a pilot at least 48 hours in advance. Vessels should wait for the pilot in a depth of 10m; if the pilot has not boarded by 1 hour after HW, it must be assumed that the bar cannot be crossed.

**Anchorage.**—Anchorage can be taken, in depths of 13 to 16m, W of Saint-Louis. Although the anchorage is generally not dangerous, vessels roll heavily and tidal races, frequent in winter, may make riding uneasy. Anchorage can also be taken in depths of 11 to 17m, off the river entrance, but the roadstead is subject to a strong swell, especially from mid-November to mid-April. During this period, a vessel may wait several days for the bar to become navigable.

The best anchorage within the river is off Saint-Louis and just below the Faidherbe Bridge.

**Caution.**—The mouth of the river is not easily recognized by vessels coming from the N as the heavy surf, which prevails upon the whole coast, breaks along Langue de Barbarie and prevents the surf on the bar from being distinguished. Vessels keeping too great a distance from the shore have been known to pass the entrance without seeing it. It is advisable to set course and make a landfall in the vicinity of Saint-Louis before approaching the river entrance.

Squalls or tornadoes are frequent, and when expected, a vessel under way in the river should anchor or moor until the storm abates. These tornadoes sometimes occur without warning.

A submarine cable, marked by beacons, crosses the river channel and may be best seen on the chart.

## The Senegal River above Saint-Louis

**10.23** Periodic inundations, caused by heavy rains, make the river navigable during a portion of the year as far as Kayes, 472 miles above Saint-Louis, as follows:

1. August 20 to September 20—vessels of 4.5m draft.
2. August 1 to October 15—vessels of 3m draft.
3. July 14 to November 10—vessels of 1.8m draft..

Podor, 147 miles above Saint-Louis, can be reached in all seasons by vessels up to about 3m draft.

During the period of LW, from December to June, only lighters can pass Mafou, situated 182 miles above Saint-Louis.

The periodic inundations allow the cultivation of extensive areas that would otherwise remain sterile. Though the rains commence early in May, the river does not begin to rise until June. The water level then rises rapidly, first filling the numerous delta channels; then the real rise takes place, inundating vast areas.

The inundation spreads very slowly, and the maximum rise at Saint-Louis occurs near the end of October, while at Kayes the river level is already falling.

According to the average of several years' observations, the approximate dates of maximum rise are, as follows:

1. Saint-Louis—November 1.
2. Richard Toll (80 miles above Saint-Louis)—October 22.
3. Podor (147 miles above Saint-Louis)—October 10.
4. Salde (260 miles above Saint-Louis)—September 20.
5. Bakel (403 miles above Saint-Louis)—September 1.

When the rains cease, the water level falls rapidly in the upper reaches, but slower in the lower reaches, due to the lakes and branch channels discharging into the river; the flood waters lying over the inundated plains also flow to the W and into the Senegal River and the branches that discharge into it.

In average years, the water is fresh at Saint-Louis at the beginning of August. The currents, in general, do not reverse at the bar after the first two weeks of August, when the fresh water of the floods stem the tide. At the end of the rainy season (November), the salt water comes back up river, and at the end of the dry season, reaches a point variable with the size of the preceding flood, oscillating between Richard Toll and Dagana, which lies 93 miles above Saint-Louis.

Sailing Directions for the river can be referred to at the harbor master's office at Saint-Louis and at the Bureau des Affaires Maritimes de Dakar. A pilot for the upper river is necessary.

## Mouth of the Senegal River to Cap Vert

**10.24 Cayar** (14°55'N., 17°07'W.), a village, stands 66 miles SW of the mouth of the Senegal River. The coast between is generally clear of offshore dangers. It was reported (1988) that a dangerous wreck lies 6.5 miles offshore, about 30 miles SW of Saint-Louis.

Lompoul, a yellow sand dune, stands 44 miles SSW of Saint-Louis. It is about 35m high and very conspicuous.

Fosse de Cayar, a narrow and deep canyon, extends WNW from the vicinity of Cayar and a depth of 105m lies about 0.5 mile W of the village. This canyon is useful when determining the position of a vessel.

The sea breaks heavily along this entire coast, except at Cayar, where the deep canyon extends near to the shore. It breaks very heavily between Cayar and Cap Vert.

It is reported that several buoys have been moored, up to 4 miles offshore, in the vicinity of Cayar.

The coast lying S of the mouth of the Senegal River consists of monotonous sand dunes, low and covered with scattered brush. Then, to the S of Lompoul dune, the coast consists of little mounds covered with thick brush.

About 20 miles SW of Lompoul, the lagoon at Bono is surrounded by greenery and prominent groups of tall trees. About 6 miles farther SW, a small black hill, 36m high, stands with a prominent reddish stripe. Les Petites Mamelles, formed by two conical hills, stands 2 miles NNE of Cayar. These hills are 45m high and conspicuous from seaward.

Baie de Yof, a slight bight, lies SW of Cayar and should not be too closely approached as the currents set strongly towards its shore.

The coast from Cayar to Butte de Camberene (Kamberene Hill), 19 miles WSW, consists of low sand dunes which have numerous trees showing above their crests. These dunes are backed by shallow lagoons.

**Camberene** (14°46'N., 17°25'W.), a small village, stands 20 miles WSW of Cayar. Buttes de Camberene, a hill, forms the E limit of Presqu'île du Cap Vert and stands 1 mile ESE of the village. It is 37m high and surmounted by a conspicuous water tank. A prominent radio mast, marked by obstruction lights, stands near the coast, 1 mile ENE of the village.

**Presqu'île du Cap Vert** (14°42'N., 16°27'W.) is described in paragraph 11.2.