

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

SECTOR 4—CHART INFORMATION

SECTOR 4

NORTHWEST COAST OF AUSTRALIA—CAPE LEVEQUE TO NORTH WEST CAPE

Plan.—This sector describes the NW coast of Australia from Cape Leveque to North West Cape, and includes the offshore islands and shoals. The principal ports described, include Broome, Dampier, and Port Hedland. The general arrangement of each group of islands or shoals is from northeast to southwest, with each island group or shoal under a separate heading.

General Remarks

4.1 The Australian coast from Cape Leveque SW to North West Cape, about 600 miles distant, is generally barren and consists of a low coastline backed by low sand hills. The coastal regions are undulating with an interior slope to the central portion of the continent. Large areas of Western Australia are hilly for some hundred miles inland, however, there are a few hills near the coast, with heights to 152m which are conspicuous.

The coast is imperfectly examined and charted, mariners are cautioned to proceed accordingly. There are some ports and good anchorages, but the shore is much indented with shoal or drying bays. In general, the 18.3m curve may extend offshore 50 miles, as in the vicinity of **North West Island** (20° 22'S., 115° 30'E.), with patches of less than 18.3m existing outside this curve.

Winds—Weather.—The principal winds in this sector are the Southeast Monsoon, also known as the Southeast Trade Winds, and the Northwest Monsoon. Further information can be found in [paragraph 1.1](#).

Tides—Currents.—The currents in this sector are affected to a considerable extent by the changing monsoon wind. At distances of more than 60 miles from the coast, the predominant direction of the current is NE to E, in summer, at a rate of about 0.5 knot, with countercurrents in some of the bays. In winter the currents are variable but are generally of a SW to W nature.

Throughout the year the constancy of the predominant direction is generally less than 25 percent, but in some areas it is between 25 percent and 50 percent. The mean rate is usually less than 1 knot, but on occasion rates of between 2 and 3 knots, setting either E or W (and sometimes opposing the predominant direction already referred to), have occurred in both seasons.

On detached reefs, the tidal currents usually set towards the reef from all sides during the flood tide and away from the reef during the ebb tide. The currents are particularly noticeable in the channels through the reef, where the rates may be considerable.

Visibility.—Fog is very rare. In coastal water, the frequency of fog is either nil or less than 2 percent throughout the year. There is some increase over the ocean towards 35° S. It is almost frequent in the extreme SW during summer and autumn, but even here its frequency does not exceed 2 percent.

Mist or haze is more common. Visibility of less than 5 miles is reported on 40 percent of the occasions around North West Cape in January and February. In November and December, more than 20 percent of observations report mist and haze on some part of the N coast of Australia, but from April to July reports of even haze occur at a frequency of less than 5 percent. Dust, and smoke from bush fires, are the common causes of the haze.

In the tropical part of the region, the few occasions of true fog occur mainly in the dry season, most frequently in some lagoons and estuaries. Visibility is also liable to be reduced to fog limits in some of the heavier downpours of the wet season.

Rowley Shoals

4.2 Rowley Shoals (17° 20'S., 119° 20'E.) consists of three extensive coral reefs lying 150 miles offshore. The sea breaks heavily on these reefs and in clear weather they are readily seen; however, they present poor radar targets. The reefs are steep-to and afford no anchorage.

Mermaid Reef (17° 06'S., 119° 37'E.), the NE of the three reefs, is an atoll with a large lagoon enclosed by a rim of coral, which dries. There are many drying patches in the lagoon. On the NE side of the reef, there is a passage, about 60m wide, leading into the lagoon. The passage is narrow and difficult, but suitable for vessels up to 4m draft, provided that the sun is sufficiently high for the many dangers to be seen. The tidal currents, with violent tide rips, set through this passage at a considerable rate.

Anchorage can be obtained, in 13m, about 0.1 mile inside the lagoon. In 1965, there was a sandbank, which covers at high water springs, on the N end of the reef. A historic wreck lies midway along the W side of Mermaid Reef.

Clerke Reef (Minstrel Shoal) (17° 19'S., 119° 21'E.) lies about 15 miles SW of Mermaid Reef. The reef has a length of about 9 miles N to S, and a width of about 4 miles. Near the N end of the reef lies Bedwell Islet, a bare sand cay about 2m high. On the E and W sides of the reef there are a number of boulders which dry. A narrow passage, which is navigable by boats at high water slack, leads to a lagoon, with many detached coral patches within the reef. There is anchorage in the lagoon for vessels up to 15m in length. The depths are over 183m within a short distance of the reef.

Imperieuse Reef (17° 35'S., 118° 55'E.) lies about 22 miles SW of Clerke Reef and is the southwesternmost of the Rowley Shoals; it is about 10 miles in length N to S and has a width of about 5 miles. On the SE edge of the reef there are numerous coral boulders, which dry about 3m. Large areas of the reef dry at low water and there are two lagoons, which each contain many coral patches within.

Cunningham Islet, a small sand cay 3.7m high and devoid of vegetation, is located close within the N extremity of the reef, and appears to be surrounded by a small lagoon, 93m wide.

Imperieuse Reef Light is exhibited from a round metal tower, on a concrete base, on Cunningham Islet. In favorable conditions the light structure has given good radar returns at a range of 36 miles. A racon is located at the light structure.

Caution.—During the strength of the tidal streams, heavy tide rips were experienced along the 183m curve about 60 miles E of Rowley Shoals. These rips were about 0.2 mile wide and, at a distance of 1 mil, resembled heavy breakers.

Cape Leveque to Cape Baskerville

4.3 The coast between Cape Leveque, which is described in [paragraph 3.87](#), and **Cape Baskerville** (17° 08'S., 122° 14'E.), about 58 miles SW, is generally low, fronted by rocks and shoal water, and indented by shoal or drying bays. The 40m curve is charted from 20 to 30 miles offshore on this stretch of coast except in the vicinity of Lacedepe Islands and Baleine Bank where it extends to 60 miles. Isolated banks, with depths of less than 37m, lie outside the charted 37m line.

From Cape Leveque to Chile Head, about 8 miles SSW, the shore is formed by sandy beaches backed by sandhills from 15 to 26m high; 4 miles SSW of Cape Leveque there are some low red cliffs with red sandhills inland. The coast is fronted by rocks and drying ledges extending up to 1.5 miles offshore. Chile Head, the S entrance point to Thomas Bay, has a shoreline 1 mile in length, is shaped like an anvil, and is formed of boulders; it rises to a conical hill 11m high. Rocky ledges, which dry up to 6.7m, extend 1.75 miles N and SW from Chile Head, forming natural breakwaters to the adjacent bays.

Thomas Bay (16° 28'S., 122° 53'E.) is entered between Chile Head and a point 2.5 miles NE. The bay recedes about 1.5 miles SE, and is backed by sand hills from 18 to 24m high. Drying reefs extend from both points across the entrance. A detached drying reef lies in the entrance, 2 miles NNE of Chile Head; there are depths of 1.8 to 5.5m within the bay.

From Chile Head to Cape Borda, about 14 miles SSW, the coast continues to be backed with low sand hills and is fronted by rocky and drying reefs. A detached 9.1m patch lies 4 miles WSW of Chile Head, about 1 mile outside the 10m curve. Black Rod Rock, which dries 0.6m, lies about 6 miles SW of Chile Head and 0.75 mile offshore. McVilly Rock, which dries 1.5m, lies 3 miles NNW of Cape Borda and 2 miles offshore. Some rocky ledges, which dry, with foul ground around them, extend to the cape. There are other rocks, with less than 1.8m over them, N of McVilly Rock, and drying ledges NNE to shore.

4.4 Lord Mayor Shoal (16° 31'S., 122° 37'E.) lies about 13 miles W of Chile Head. The shoal has a least depth of 7.6m and lies on the N side of a coral bank that extends S and SW.

Pender Bay (16° 44'S., 122° 41'E.) is entered between Cape Borda and Emeriau Point, about 10.5 miles SW. Cape Borda is a low rocky point, with a white sandy patch near its extremity, backed by red cliffs from 18 to 21m high. Behind the cape, white sand hills partly covered by scrub rise to a height of 42m. Depths of less than 11m extend up to 5.5 miles W of Cape Borda.

From Cape Borda, the eastern shore of Pender Bay extends SE to Kelk Creek, which dries throughout, then SW to Bell

Point, a rocky point 6.5 miles SSW of Cape Borda. The S shore of Pender Bay, between Bell Point and Emeriau Point, about 7 miles W, consists mostly of red cliffs broken in places by small sandy beaches. From 1 to 2 miles WSW of Bell Point, the cliffs are from 6 to 24m high and are conspicuous. From these cliffs, the shore extends W about 2.5 miles, then NNW to Perpendicular Head, then W to Emeriau Point.

Woodhouse Rocks (16° 43'S., 122° 42'E.), some of which dry from 2.1 to 2.7m, form the outer dangers in Pender Bay and lie about 3.3 miles SW of Cape Borda. Chimney Rocks lie close NE of Emeriau Point; the outermost of the four rocks is the largest and is 13m high. It is easily identified when seen clear of the land.

Anchorage can be obtained during good weather, in depths of 7m, 1 mile E of Perpendicular Head, with Chimney Rocks in line with the head.

The coast between Emeriau Point and North Head, about 5 miles SSW, is fronted by rocks, many of which uncover at low water. About 3.5 miles SSW of Emeriau Point, the coast is indented by Tappers Inlet, which dries throughout. The position of the entrance to the inlet is liable to shift.

4.5 North Head (16° 50'S., 122° 32'E.), the N entrance point to Beagle Bay, is a low, dark-colored cliff with a conspicuous stony hummock, 16m high, above it; it has a ridge of grassy hummocks which extends NE about 0.5 mile. A wooded hill, about 26m high, is located 0.5 mile E of North Head.

Beagle Bay (16° 52'S., 122° 30'E.) is entered between North Head and Sandy Point, about 4.5 miles SW. The depths in the bay decrease regularly from 12.8m in the entrance to its head, about 7 miles SE. On the E side of the bay, about 2.25 miles SSE of North Head, there is a conspicuous sand-faced ridge, and about 0.5 mile farther S, there is a conspicuous green peak, 22m high. East Sandy Point, 4 miles S of North Head, rises to a height of 23m.

Sandy Point (16° 54'S., 122° 28'E.), 9.1m high, the SW entrance to Beagle Bay, is composed of sandhills with their tops and inshore slopes sparsely covered with brush. South Head is 0.6 mile within the extremity of Sandy Point and rises to a height of 15m. The coastal bank, with depths of less than 5.5m, extends 1 mile N and 0.5 mile NE of Sandy Point. There are several submerged rocks on the coastal bank; the outermost of these, with a depth of 1.5m, lies 1 mile N of the point.

Tidal currents, which set in and out of the bay with rates from 0.5 to 1.5 knots, set directly across the shoal ground N of Sandy Point. Care is necessary in approaching Sandy Point, as the currents setting across the shoal ground create a tide rip.

Good anchorage may be found on either side of the bay, according to direction of the wind and the draft of the vessel. Although the bay is open NW, strong winds are seldom experienced from that quarter, and on rare occasions when they do blow, last a few hours only.

Caution.—Pearl culture activity is conducted in the bay. Pearl beds, which may be floating or fixed structures, and their associated moorings should be avoided. The beds are generally marked by buoys or beacons, which may be lit. Their positions are not charted.

4.6 The coast from South Head to Cape Baskerville, 19 miles SW, is indented by Camp Inlet and Baldwin Creek. Camp Inlet dries throughout and for 1.5 miles W of its entrance. The shore S of Sandy Point to Camp Inlet, 3 miles S, is low and sandy. From Camp Inlet SW to Baldwin Creek, about 7 miles distant, the coast is low and is backed by parallel ridges of sandy hillocks, 6.1 to 20m high.

Red Bluff (17° 03'S., 122° 19'E.), about 4 miles SW of Baldwin Creek, is a conspicuous red cliff surmounted by a square-topped sandhill, 45m high, covered with grass and shrubs. A light, from which a racon transmits, is situated on the bluff.

King Peaks, located 3 and 6.5 miles ESE of Red Bluff, are two conspicuous peaks, 77m and 84m high, on a wooded range of hills. The W of the two peaks is known as Carnot Peak. The shore from this area SW to Cape Baskerville continues as conspicuous, reddish, sandy cliffs with little break in its configuration.

The coastal waters from Sandy Point to Camp Inlet are bordered by drying reefs extending 0.4 mile offshore and by a bank that dries, 0.8 mile farther offshore. The coast for about 5 miles SW of Camp Inlet is fringed by foul ground which dries up to 6m, and extends about 0.5 mile offshore. The 5m curve extends up to 3 miles off this section of coastline. From Baldwin Creek, 4 miles SW to Red Bluff, rocky ledges extend up to 1.5 miles offshore.

Cape Baskerville (17° 08'S., 122° 15'E.), the N entrance point to Carnot Bay, is a conspicuous sandy hillock 38m high. About 1 mile E of this hillock there is a wooded hill, 50m high, which is considerably higher than the land farther S. Carnot Bay lies between Cape Baskerville and a low point 3.5 miles SSW. The bay dries for a distance of 2 miles outside the line joining the entrance points. Within the cape, its shores are flat and swampy and are intersected by creeks.

Out-lying Dangers

4.7 The coastal bank, which includes Baleine Bank (16° 47'S., 122° 00'E.) and Lacepede Islands (16° 53'S., 122° 09'E.), with depths of less than 18.3m, extend up to 35 miles NW from the coast between South Head and Cape Baskerville.

The 10m curve extends 11 miles WNW of South Head, previously mentioned in [paragraph 4.5](#), and embraces Sloper Shoal, which has a minimum depth of 6.4m. There is an isolated 10.9m patch about 2 miles NW of Sloper Shoal.

Lacepede Islands (16° 53'S., 122° 09'E.), a group of four islets about 10 miles in length NW to SE and about 5 miles in width, lie from 10 to 20 miles NW of Red Bluff. East Islet and West Islet lie in the SE and NW part of the group, respectively. These islets lie on a coral reef that dries; at high water, its S edge is marked by heavy breakers. Danger Rocks lie on the edge of the foul ground extending 3 miles W from West Islet. A light is situated on East Islet; a racon transmits from the light structure. Surprise Reef, composed of sand and coral, with a least depth of 2.1m, lies on a spit with its shallowest head about 4.75 miles SSW of East Islet; the sea occasionally breaks over this reef at low water.

Baleine Bank (16° 47'S., 122° 00'E.), composed of sand and coral, extends within the 20m curve, about 18 miles WNW from the W end of West Islet. The bank, about 5 miles wide, has general depths of 2.7 to 9.1m. The edges of this bank are generally clearly marked by tide rips, but the water is usually so discolored that it is difficult to detect the shallower spots. Rocks other than those charted may exist. Weston Patch, a narrow ridge with a depth of 4.6m, lies on the N edge of the bank, about 6.5 miles NW of West Islet. Walker Rock, with a least known depth of 6.1m, lies 16.5 miles W of West Islet; an unexamined 4.3m patch lies about 5.5 miles ENE of Walker Rock.

Anchorage may be taken about 1.25 miles NNW of the E end of West Islet, in a depth of 8.2m, but the bottom is uneven. This anchorage is exposed to NE winds which occasionally blow with sufficient force to cause an unpleasant sea. Vessels with a draft of over 5.5m should anchor farther NE. Currents set SE with the rising tide and NW with the falling tide.

Lacepede Channel (17° 00'S., 122° 15'E.) leads between the islands and the mainland, and is about 3 miles wide between the 10m curves on either side. In approaching the channel from the NE, the track passes E of Sloper Shoal. The shoal water surrounding Lacepede Islands lies along the W side of the channel, while Eclipse Shoals, Awong Patch, Tangier Shoals, and Baskerville Shoal lie to the E of the track; these shoals have depths of as little as 2.1m. There are isolated patches of 10.9m in the channel. Useful aids are the lights and racons at Red Bluff and East Islet.

Cape Baskerville to Roebuck Bay

4.8 Cape Bertholet (17° 15'S., 122° 11'E.), about 8.5 miles SSW of Cape Baskerville, is a low point that is difficult to distinguish, located at the N end of a ridge of white sandhills; this ridge terminates about 1.5 miles SSW in a sandhill, 19m high. The shoreline from Cape Baskerville to Cape Bertholet is low and swampy, and is inundated at high water springs.

The coastal bank from Carnot Bay SSW to Cape Bertholet, with less than 5.5m over it, extends up to 3 miles offshore, and has several drying rocks on it. Baskerville Shoal, with depths of 2.1m, is centered about 6 miles NW of Cape Baskerville and Panton Shoals, with several rocks that dry, lie on the coastal banks off the entrance to Carnot Bay.

The coast from Cape Bertholet to Coulomb Point, about 7.5 miles SSW, presents a sandy shoreline backed by sandhills up to 19m high, partly covered by scrub. A brush-covered sandhill, 30m high, is located 0.75 mile SSE of Coulomb Point. Foul ground, with rocks that dry, extends up to 3 miles offshore. A depth of 5.7m is located just inside the 10m curve about, 6.5 miles NW of Coulomb Point.

Talboys Rock (17° 18'S., 122° 02'E.), an isolated coral head with a depth of 3.7m, lies 7.5 miles WNW of Coulomb Point. The rock is plainly marked by tide rips.

James Price Point (17° 30'S., 122° 09'E.), about 8 miles S of Coulomb Point, consists of low cliffs backed by red sandhills, 27m high, partially covered with scrub. The intervening shore between the two points is sandy for 2.5 miles S and is backed by white sandhills. The remainder of the coast to James Price Point consists of red cliffs, 8 to 24m high. A green hillock, 10m high, stands 4 miles S of Coulomb Point. The wooded

coastal range of hills rises gradually to its summit, 122m high, 15 miles ENE of James Price Point; there is also a hill, 100m high, 6.5 miles ENE of the same point.

The coastal waters, with depths of less than 5.5m, extend to 2 miles offshore between Coulomb Point and James Price Point; within this area there are submerged and drying rocks. James Price Patches, composed of sand and coral, have a least depth of 7.3m at their N end, about 2 miles W of James Price Point.

Tidal currents between Cape Leveque and James Price Point are rotary in the offing. When the tide begins to rise the current sets to the SSE, gradually turning through E, and at high water sets between NE and N.

4.9 Cape Boileau (17° 40'S., 122° 11'E.), about 10.5 miles SSE of James Price Point, is the S extremity of a conspicuous red cliff 3 to 6m high. From James Price Point S, the coast consists of sandy beaches and occasional low cliffs, backed by sandhills, partly covered by brush. The land immediately behind the sandhills is low and covered with scrub, gradually rising inland to the slopes of the coastal range.

The 10m curve lies up to 4.5 miles offshore between James Price Point and Cape Boileau. Farm Shoal, with a least depth of 4.6m, lies 1 mile offshore, about 2.5 miles NNW of Cape Boileau. Grey Shoal, with a least depth of 9.1m, lies outside the 10m curve, about 8 miles WNW of Cape Boileau. Boileau Patches, with a least depth of 8.2m, are located between Cape Boileau and Naringla Shoal, a sand and coral shoal with a least depth of 7.6m, about 4.25 miles W of the cape.

From Cape Boileau S to Gantheaume Point, 18 miles distant, the coast is indented by two drying creeks. Barred Creek is located E of Cape Boileau; Willie Creek lies 6 miles farther S. Between these creeks, the shore is sandy and fringed with a low range of white sand hills. A house and a radio tower stand on the N shore of Willie Creek, close inside its mouth.

From Willie Creek, the low sand hills run S to Station Hill, which is a conical hill, 36m high, located 3.5 miles N of Gantheaume Point. A range of sand hills continues SSW to Gantheaume Point, which terminates in a rock cliff about 15.2m high.

Coastal banks, which dry and extend up to 0.75 mile offshore, lie between Willie Creek and Gantheaume Point. Cary Patch, with a least depth of 4.6m, is located 2 miles NW of Willie Creek. Depths of 8.5m lie up to 15 miles off this section of the coast.

Declaration Rock (17° 55'S., 122° 09'E.), with a depth of 4.9m, lies about 3.75 miles NNW of Gantheaume Point.

Whale Rock, which dries 0.9m, lies about 0.75 mile N of Gantheaume Point. Swirl Rock, with depths less than 1.8m, lies 0.5 mile NW of Gantheaume Point and is marked by tide-rips. Inshore of these dangers, the bottom is foul.

Roebuck Bay

4.10 Roebuck Bay (18° 05'N., 122° 12'E.), one of the best harbors on this coast, is entered between Gantheaume Point and Cape Villaret, 22 miles SSW, and extends about 11 miles E. The N shore of the bay trends SE nearly 3 miles to Entrance Point, then NNE to Dampier Creek, with the town of Broome on its W side. There are some red cliffs, 12m high, about 5

miles ENE of Entrance Point. A number of creeks discharge into the NE and SE corners of Roebuck Bay; the E shore is fringed by mangroves. The low shores continues WSW to Bush Point, which has a clump of stunted trees and bushes on it, located 11 miles NE of Cape Villaret. From Bush Point, the low shore rises to Cape Villaret, a hillock 48m high, with some red patches under it.

Roebuck Bay appears as a spacious bay at high water, but at low water a large portion of the bay is occupied by drying sandbanks extending up to 7 miles from the S shore. Pearl Shoals, which cover an extensive area, obstruct the entrance, leaving Roebuck Deep, a channel about 0.75 mile wide, between their NE side and the coast at Gantheaume Point.

Lights are shown from both Gantheaume Point and Entrance Point; the light structure at Entrance Point is located about 0.3 mile NW of the S extremity of the point.

Broome (17° 58'S., 122° 14'E.)

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4.11 Broome is situated close within the entrance to Roebuck Bay and is entered through Roebuck Deep. There is berthing for deep draft vessels at Broome Harbor and for light draft vessels about 3 miles NE, in Dampier Creek, abreast the town of Broome. The principal imports are general cargo and bulk oil, and the exports are primarily frozen and chilled beef, beef by-products, and wool.

The port is also a base for vessels servicing the oil and gas exploration off the coast.

Port of Broome Home Page

<http://www.broomeport.com>

Winds—Weather.—The Southeast Trade Wind is the predominate wind throughout the year and is associated with good weather. From December to February, the Northwest or West Monsoon winds spread from W and N through this area. In March the winds become variable, but by April the SE wind has re-established itself.

The Southeast Monsoon or Southeast Winds are associated with fine dry weather, with practically cloudless days. The Northwest or West Monsoon is attended, especially at its onset, with considerable cloud, rain, and frequently thunderstorms. With the approach of the Northwest or West Monsoon, squalls occur at intervals of 4 to 5 days, but their frequency increases until they occur almost daily. The transitional period from one season to the next occurs through March and part of April and during the quarter October to December. The winds at these times are light and variable, but usually blow from the direction appropriate to the season.

Fog is rare, occurring only about 2 percent of the time throughout the year. It occurs more often in summer and autumn, although, mist or haze is more common. Dust and smoke from brush fires are the common cause of haze. Visibility is also reduced to fog limits in some of the heavier downpours of the wet season.

Tides—Curr ents.—The tidal rise at Broome is 8.5m at mean high water springs and 5.4m at mean high water neaps.



Broome

In Roebuck Deep and at the entrance to the inner anchorage, the tidal currents attain a rate of 4 to 5 knots during springs; at other times the rate seldom exceeds 2 knots.

Tidal movements at the wharf may be quite different from tidal movements in the channel.

Depths—Limitations.— The entrance to Broome is through Roebuck Deep, which should be approached with caution. Pearl Shoals, the SW danger of Roebuck Deep, has a minimum depth of 2.1m; however, North Rock, with a depth of 1.2m, Escape Rocks, with a depth of 0.6m, and East Rock, with a depth of 1.2m, lie on the N, NE, and E edge of Pearl Shoals, respectively. Nab Rock, with a depth of less than 1.8m, is the outermost danger on the NE side of Roebuck Deep.

From the SE end of Roebuck Deep, the passage E of Channel Rock (18° 00.7'S., 122° 12.8'E) has a least depth of 5.2m lying off the W end of Middle Ground. The passage W of Channel Rock has a least depth of 11.3m.

The wharf is situated about 0.75 mile NE of Entrance Point, at the head of a concrete jetty which extends across the ledges fronting the shore. The outer berth, which is 183m long, can accommodate a vessel with a maximum draft of 9m. The inner berth can accommodate a vessel with a maximum draft of 8m.

Aspect.—Station Hill, 37m high, is the northernmost and highest of a range of sandhills which lie to the N of Roebuck Bay. Saddle Hill, 33m high, stands about 2.25 miles SSW of Station Hill and is bare and conspicuous. Red Hill, 21m high, is conspicuous and stands about 1 mile NW of Entrance Point. Four radio masts stand within 0.2 mile ENE of Entrance Point light structure and some conspicuous tanks are situated close N of the structure. A conspicuous water tower and radio mast,

55m high, stand about 2.25 miles and 3.25 miles, respectively, ENE of Gantheaume Point. A lighted buoy moored about 1.25 miles SW of Gantheaume Point marks the N extremity of Pearl Shoals. Lighted beacons are located 0.35 mile ESE and 0.65 mile ENE of the S extremity of Entrance Point, and in the approach to Dampier Creek, about 2.75 miles NE of the wharf.

Range lights mark the preferred track leading E of Channel Rock. Range lights also mark the passage W of Channel Rock.

An aeronautical radiobeacon is situated about 3.75 miles NE of Gantheaume Point and an aeronautical light is shown from a position at the airfield, about 0.75 mile SSE of the radiobeacon.

Pilotage.—Pilotage is compulsory for the Port of Broome. Pilots board about 5 miles W of the light on Gantheaume Point.

Pilots should be requested 7 days in advance from the harbor master in Wyndham and the Marine and Harbor Department, Fremantle. The vessel's ETA, along with its draft, should be confirmed 48 hours and 24 hours prior to arrival. Vessels may berth day or night depending on tidal conditions.

The pilot vessel is equipped with VHF radio. The calling frequency is VHF channel 16; the working frequencies are VHF channel 6 and VHF channel 12.

Signals.—Depth signals may be displayed from the signal mast at the SW end of the wharf.

Anchorage.—Anchorage may be taken in Roebuck Deep as convenient. Vessels may anchor in the pilot boarding area. The holding ground is reported good, but the position is exposed. Large vessels can anchor S of Middle Ground, in depths of from 15 to 16m, about 3.5 miles ESE of Entrance Point Light.

Vessels can anchor in depths of 13 to 16m in the Inner Anchorage; at low water this anchorage is protected by Middle

Ground, but at high water, with strong E winds, a troublesome sea may be experienced. There is a mooring buoy in the Inner Anchorage, 2 miles ENE of the NE end of the wharf at Broome.

Anchorage in smooth water with good shelter can be found during E winds in a depth of about 12m about 2 miles NNE of Gantheaume Light, and about 1.5 miles offshore.

A prohibited anchorage area is situated in the vicinity of the wharf and is shown on the chart; beacons in line on the shore about 1 mile N of the wharf indicate the NE limit of the area.

Directions.—When approaching Roebuck Bay, keep to seaward in not less than 15m until the light on Gantheaume Point bears 094.5°, then steer for it and approach the pilot station, which is about 6.5 miles W of the point.

Caution.—Declaration Rock, with a depth of 4.9m, lies 3.75 miles NNW of Gantheaume Point and Disaster Rock, 8 miles SW of the same point, is a pinnacle rock with a depth of 1.5m. Numerous isolated depths of less than 11m lie outside the 11m curve for distances up to 20 miles off the salient points on the coast in this area.

Pearl culture areas are located in Roebuck Bay. The farms, which may be floating or fixed structures, and their associated moorings should be avoided. The farms are generally marked by buoys and beacons, which may be lit.

Roebuck Bay to Port Hedland

4.12 Gourdon Bay (18° 27'S., 121° 55'E.), located about 13.5 miles SW of Cape Villaret, is about 10 miles wide and open W. The S shore of the bay dries, but depths of 5.5m are charted 2 miles N of the S shore. Two prominent points, Church Hill, 58m high, and Barn Hill, lie about 5 miles NE of Cape Gourdon. The 10m curve lies about 4 miles NW of Cape Latouche Treville; Justice Shoal, a patch with a least depth of 3.6m, is located about 8 miles W of the cape.

From Cape Latouche Treville, the coast trends 20 miles SSW to Cape Bossut and is indented by Port Smith, a creek which dries, and Lagrange Bay. A sand bank, which dries at low water, extends 1.5 mile W of Port Smith.

Lagrange Bay (18° 38'S., 121° 41'E.) is entered between False Cape Bossut and Cape Bossut, about 10 miles SW. False Cape Bossut is a rocky projection, 18m high, which appears to be an island. From False Cape Bossut, the rocky shore of the bay trends SE for about 3 miles to a mangrove swamp, then S about 4 miles to Black Rock Point, which dries 6.1m. A ridge of sandhills backs the shore SW to Cape Bossut, which is a low, dark, rocky cliff with a ridge of sandhills, 14m high, partly covered with scrub close within.

The waters of Lagrange Bay, E of a line joining the two entrance points, has depths of less than 5.5m. Outer Reef, which dries, lies on the 5m curve about 2.75 miles W of False Cape Bossut. Casuarina Reef, which dries 1.2m, is located inside the 5m curve about 2 miles W of Cape Bossut. Shell Patch, with a depth of 0.9m, lies 2 miles NNE of Casuarina Reef. Roy Bank, with a least known depth of 7.3m, lies between 5.5 and 8.5 miles W of Cape Bossut. A shoal, with a depth of 11m, was reported (1963) to lie 8 miles NW of Cape Bossut.

Tryon Point (18° 44'S., 121° 37'E.), located 2.5 miles S of Cape Bossut, is similar in appearance to that cape, and forms

the SW extremity of the same peninsula. Admiral Bay, between Tryon Point and Cape Frezier, 8 miles S, is shallow throughout; there is a creek at the head of the bay and extensive swamps in the direction of Lagrange Bay. A hillock over Cape Frezier is 20m high and falls seaward in conspicuous red cliffs. Ledges, which uncover, extend 1 mile seaward of the cape.

Cape Jaubert (18° 56'S., 121° 33'E.), 5 miles S of Cape Frezier, has a remarkable white sand patch over it at a height of 14m, and some low, dark-colored cliffs close S. Ledges, which uncover at low water, extend 1 mile seaward of the cape. The 10m curve extends up to 18 miles offshore W of Cape Jaubert.

4.13 Eighty Miles Beach (18° 56'S., 121° 33'E.) is a low sandy shore which commences at Cape Jaubert and extends in a SW direction 80 miles to Red Hill, 17m high. It presents no conspicuous objects except a high bare sandhill about 10 miles S of Cape Jaubert and another bare sandhill, 15m high, about 22 miles ENE of Red Hill. The coastal range of sandhills is from 4.5 to 6.1m high, some of the hills being covered with vegetation. Nothing of the interior can be seen.

The 20m curve lies from 10 to 20 miles offshore along Eighty Miles Beach. Patterson Shoal, with a least depth of 1.8m, has been reported to be about 13 miles SW of Cape Jaubert; this position is doubtful. A narrow ridge, with depths of 6.4 to 9.7m, extends from the vicinity of Patterson Shoal SW for a distance of about 60 miles to a position about 13 miles NW of Red Hill. Portions of these waters have not been examined and lesser depths than charted may be encountered.

Mount Blaze (20° 00'S., 119° 41'E.), about 52 miles WSW of Red Hill, is a sandhill, 18m high, located on a point. The coast between Red Hill and Mount Blaze continues to be low and sandy; there are occasional rocky points and low red cliffs, with a continuation of the low flat country inland. From Cape Keraudren, 6 miles NE to Mount Blaze, the shore consists of shoal mangrove bays, with cliffy points between them. The country behind Mount Blaze is swampy, with mangroves for a few miles, gradually rising S to cone-shaped hills with flat tops, from 60 to 150m high, some distance inland.

From Mount Blaze W to Larrey Point, about 35 miles distant, the coast is indented by a shoal bay and a number of creeks, which dry. Poissonnier Point, 5 miles E of Larrey Point, is the E side of the entrance to the De Grey River; the point is low and thickly covered with mangrove. The De Grey River, about 250 miles in length, extends in a general SE direction from its mouth; it has a number of tributaries.

4.14 The waters NW of Red Hill and WSW to Larrey Point are encumbered with numerous shoal patches of less than 9.1m, which lie up to 20 miles offshore. Solitary Islet, 9m high, lies 1 mile offshore, 14 miles ENE of Mount Blaze, it is formed of red sandstone and is connected to the coast at low water by a sand spit. Amphinome Shoals, which have not been thoroughly examined and which sometimes dry in places, have long lines of breakers, irregular soundings, and tide rips located within, and front the coast between Mount Blaze and Spit Point; they lie up to a distance of 23 miles offshore.

Spit Point (20° 02'S., 119° 00'E.) is located about 8 miles SW of Larrey Point. A sandspit, with depths of less than 5m, extends 8 miles NW from the point towards North Turtle Islet; the inner part of the sandspit dries out.

Bedout Islet (19° 35'S., 119° 06'E.), a coral islet 4m high, covered with coarse grass, and surrounded by a coral reef that dries, is located 22 miles N of Larrey Point. Shoals, with depths of 3.3m, extend 4.5 miles WSW from the islet. These shoals are marked by overfalls during the strength of the tidal scurrents. Bedout Islet Light is shown from a stainless steel framework tower in the center of the island. A racon is situated at the light structure.

Caution.—A submerged wellhead lies about 56 miles WNW of Bedout Island.

Between Bedout Islet and the coast to the S, and then SSW to North Turtle Islet, there are many shoals with depths of 4.6 to 9.1m.

North Turtle Islet (19° 53'S., 118° 54'E.), 10m high, lies 10 miles NNW of Spit Point and is composed of sand, covered with coarse grass and some shrubs. A reef, about 3 miles in extent and dry at low water, surrounds the islet.

Little Turtle Islet, 9 miles SSW of North Turtle, is almost awash at high water springs, and is surrounded by a reef. The reef extends about 1 mile WNW of the islet. Shoal water, with a least depth of 3.6m, may be found 13 miles W of Little Turtle Islet.

Minilya Bank (20° 11'S., 118° 38'E.), a sand bank with a least depth of 1.9m and about 1.5 miles in extent, is located 9 miles N of Cooke Point.

Caution.—Magnetic anomalies have been reported in localized areas about 9 miles NW of North Turtle Island and about 5 miles N of Cooke Point.

Cooke Point (20° 18'S., 118° 38'E.), about 27 miles SW of Spit Point, is backed by hills about 15m high. The entire coast between Spit Point and Cooke Point is an extensive swamp and is fronted by sandbanks which dry up to 5 miles offshore in some places. The shoreline extending 17 miles to the SW of Spit Point consists of a ridge of sparsely covered sandhills which form a barrier about 12m high, between the sea and the low swamp-land behind.

Port Hedland (20° 19'S., 118° 34'E.)

World Port Index No. 54620

4.15 Port Hedland, an ore-loading port, is entered between Airey Point, an ill-defined point about 3.5 miles WSW of Cooke Point, and Hunt Point, about 0.35 mile NW of Airey Point. The port is approached through a channel, which is marked by lighted beacons, and which is entered about 20 miles offshore NNW of the harbor entrance.

Offshore oil and gas rig servicing vessels also use the port facilities.

A special Decca Navigator Chain, with coverage extending up to a radius of 75 miles, is in operation within the approaches to the port in order to aid the large bulk-ore carriers negotiate the channels through the offshore shoals during the limited times of high water.

Port Hedland Port Authority Home Page

<http://www.phpa.wa.gov.au>

Winds—Weather.—The Southeast Trade Wind is the predominate wind throughout the year and is associated with fine dry weather, with practically cloudless days. The Northwest or West Monsoon is attended, especially at its onset, with considerable cloud, rain, and frequently thunderstorms. With the approach of the Northwest Monsoon, squalls occur at first at intervals of 4 to 5 days, but their frequency increases until they occur almost daily.

The transitional period from the Northwest Monsoon to the Southeast Trade occurs through March and part of April, and from the Southeast Trade to the Northwest Monsoon during the quarter October to December. The winds at these times are light and variable but usually blow from the direction appropriate to season that is to come.

The port is occasionally closed due to cyclones which occur between November and April.

Fog is rare, occurring only about 2 percent of the time throughout the year. It occurs more often in summer and autumn; mist or haze is more common. Dust and smoke from brush fires are the common cause of haze. Visibility is also liable to be reduced to fog limits in some of the heavier downpours of the wet season.

Tides—Cur rents.—The tidal rise at Port Hedland is 6.8m at mean high water springs and 4.7m at mean high water neaps. Tidal currents in the harbor attain a rate of from 3 to 4 knots; the outgoing current is the stronger and at the highest tides may reach a rate of 6 knots. At the offshore anchorage, the tidal streams attain a rate of 2.5 knots at springs.

Depths—Limitations.—Co rnelisse Shoal (20° 02'S., 118° 22'E.), with a least depth of 3.2m, is located 20 miles NW of Port Hedland entrance and about 2.5 miles W of the approach channel; patches with depths of 6 and 8.1m lie 1 mile SW of the SW end of this shoal.

Coxon Shoal (20° 04'S., 118° 28'E.) has a least depth of 6.6m and lies on the E side of the approach channel, about 5 miles SE of Cornelisse Shoal. A shoal patch, with a least depth of 6.6m, lies 3.25 miles S of Coxon Shoal and about 0.45 mile W of the approach channel.

A spoil ground area extends about 6 miles N from the shore close E of Airey Point and E of the dredged entrance channel. Two additional spoil ground areas are situated 6.5 and 9.5 miles N of Airey Point; the limits of these areas can be seen on the chart.

Drying coral ledges, covered with a thin layer of sand, extend up to 0.75 mile in places off the coast on either side of the entrance.

An approach channel marked by pairs of buoys extends SE from a position about 22 miles NW of Cooke Point for about 12 miles, where it joins a dredged entrance channel, which leads into the harbor. The dredged channel, with a least depth of 14.1m as far as the Port Hedland Turning Basin, is entered 4 miles NE of Cornelisse Shoal. The width of the approach channel varies from 430m in the pilotage area to between 183m and 300m inside the port limits.

Owing to the incomplete nature of the surveys in the approach waters, depths less than charted may exist and the approach channel should not be approached from NE if the vessel is in less than 20m. Vessels are cautioned not to enter the dredged entrance channel except by way of the approach

channel. Lighted Beacon 3 and Lighted Beacon 4, moored 3 miles SSW of Lighted Beacon C1, mark the route through a shoal area close E of the channel.

In addition to the approach channel, a recommended track for inbound vessels of lighter draft is located to the E of the outer lighted beacons. From a position about 5 miles NNE of the W outer lighted beacon, vessels should steer 146° for a distance of about 8.75 miles, then S for a distance of about 4.75 miles to the pilot boarding area. The inshore route has a least depth of 10.2m. A 9.6m patch lies 4 miles ENE of Lighted Beacon C1 and 0.75 mile E of the SE track.

Wharf No. 1 is a steel and concrete structure located about 0.2 mile W of the Shipping Control Tower. The berthing face is about 213m in length with a dolphin located 58m from the N end. There is a dredged depth alongside of 11.2m. Vessels up to 230m long can berth here.

A basin for tugs lies close N of Wharf No. 1 and the S part of the wharf is used by drilling rig service vessels.

Wharf No. 3 lies close SE of Wharf No. 1. This steel and concrete structure is 183m in length with dolphins 46m off each end. There is a dredged depth of 13.2m alongside. Vessels up to 230m long can berth here. A bulk salt loader is situated at the berth.

Mount Newman Wharf extends ESE in a continuous line from Wharf No. 3 for a total length of 658m. There is a dredged depth of 19m alongside. Vessels with a maximum length of 315m and a maximum beam of 55m can be accommodated.

Goldsworthy Mining Limited Wharf is situated on the W side of the harbor on Finucane Island. The face of the pier, which is 177m in length, is extended by mooring dolphins to an overall length of 378m. Vessels of up to 260m in length and 33m beam can use the wharf. The depth alongside is 17m.

Aspect.—The hill backing North Point, NNW of Hunt Point, on the W side of the entrance, has a white sand patch conspicuous from seaward. A conspicuous dome stands on North Point. The Shipping Control Tower is prominent, standing 31m high, about 0.4 mile SSW of Airey Point. A crushing plant 60m high stands 0.75 mile E of the Shipping Control Tower and is the most conspicuous object in daylight. Conspicuous tanks stand about 0.25 mile SE and 1 mile WSW of Cooke Point light structure and about 0.5 mile W of Hunt Point.

The outer W lighted beacon located about 4.25 miles NE of Cornelisse Shoal, is equipped with a racon.

Pilotage.—Pilotage is compulsory for all foreign vessels with a length overall greater than 35m. Requests for a pilot should be made to the Harbormaster Port Hedland 48, 24, and 2 hours prior to arrival. This request should include the last port and estimated draft on arrival.

Pilots board about 3.5 miles SE of Lighted Beacon No. 14 (20° 10'S., 118° 33'E.) by either pilot boat or helicopter. The pilot boat is equipped with VHF radio.

Before entering the Pilotage Area, vessels must call Port Hedland Harbor on VHF channel 16 and receive permission to enter.

Regulations.—Inbound vessels should contact the Port Shipping Control Tower when within VHF radio range and obtain details of the movement of outbound traffic. Vessels should also report when at the beginning of the inbound track

in position 19° 56.37'S, 118° 27.77'E. Vessels should then maintain a continuous listening watch on VHF channel 16. Port Control will advise vessels as to their radar position, berthing instructions, and other ship movements. Pratique is not granted by radio. No vessel may enter the dredged channel without the permission of Port Control.

Inbound vessels should take the necessary action to avoid impeding the passage of outward bound vessels constrained by their draft. Such action should be taken by reduction of speed to avoid meeting in restrictive areas; the most restrictive areas lie in the vicinity of Lighted Beacon C9 and Lighted Beacon C10.

Any vessel not restricted in its ability to maneuver shall avoid impeding the passage of the vessel constrained by its draft. Vessels usually berth near slack water. Vessels over 100,000 tons do not sail on the ebb.

Vessels over 280m in length are berthed during daylight hours only.

Inbound vessels should not impede outward bound vessels constrained by their draft or those restricted in their ability to maneuver. All inbound vessels, except those constrained by their draft, are to use the recommended E inward route. Vessels using the E approach should note the least depth is 10.2m between sars towers 2E and 3E, and ensure that their is sufficient height of tide to provide safe passage. Information on the tide height can be obtained from Port Hedland Harbor on VHF channel 16, which is guarded continuously.

Signals.—The port is occasionally closed during cyclones, which occur between November and April. Signals are displayed at night from the Control Tower to show the state of the tide and to indicate port closure.

Anchorage.—Channel Escape Areas are established on either side of the channel 2.5 miles W of the pilot boarding area. Anchorage is prohibited in this vicinity.

Port Hedland to Port Walcott

4.16 Cape Thouin (20° 20'S., 118° 11'E.) lies about 22 miles W of Port Hedland. The coast between is intersected by creeks which are backed by swamps. There are two hills charted about 9 miles SW of Port Hedland, 3 miles within the coast.

The coastal waters from Port Hedland to Cape Thouin are fronted by rocky ledges, which dry or have depths of less than 1.8m, and by drying sandbanks which extend up to 2.5 miles offshore; the 10m curve lies up to 7 miles offshore along this stretch.

The coast between Cape Thouin and **Cape Cossigny** (20° 29'S., 117° 56'E.), about 16 miles SW, is formed by sandhills from 9 to 12m high; the country inland is elevated and apparently thickly wooded. The coast is fronted by rocky ledges and sandflats, which dry at a considerable distance from the shore. A conspicuous tower stands on a sandhill, about 8.5 miles SW of Cape Thouin.

From Cape Cossigny to the entrance of the **Sherlock River** (20° 43'S., 117° 33'E.), about 26 miles SW, there are numerous islands and islets which lie up to 4 miles offshore. These islands and islets are connected to the mainland by sand banks which dry at low water. Between the entrance to the Sherlock River and Port Walcott, about 20 miles W, the land is low, flat

and intersected by several rivers, which discharge into the swampy and mangrove-covered land bordering the coast.

The coastal waters have irregular depths of less than 10m up to 7.5 miles offshore and depths of less than 5m up to 4 miles offshore. Mount Wangee, 75m in elevation and the highest summit of a double ridge of grassy hillocks, is located about 2.5 miles inland from the shore S of Port Walcott. Mount Wangee and a lower summit, 53m high, located about 2 miles NE, are the only prominent features along this coast.

4.17 Weerde Island (20° 19'S., 118° 28'E.), 9m high, lies 6.5 miles WSW of Hunt Point and 1 mile offshore; within this island is Oyster Inlet, which affords shelter for small vessels with local knowledge, but it should only be approached from the E at low water when the ledges can be seen.

A shoal, with a depth of 4.6m, lies 4.5 miles NE of Cape Thouin. A 3m patch lies 8.5 miles NE of Cape Thouin and an obstruction was reported (1936) to lie 2 miles NE of the patch. A shoal, with a least depth of 8.8m, lies 16 miles NE of Cape Thouin, with a 6.7m patch 3.5 miles WSW of it. In 1981, shoal depth of 7m and 8m were reported 12 miles NE and 10.5 miles NNE, respectively, of Cape Thouin. Depths of 3.5m, 3.4m, and 2.7m lie 8 miles N, 6 miles NW, and 4 miles WNW of Cape Thouin.

Geographe Shoals (20° 16'S., 117° 54'E.) are several rocky patches which extend up to 8 miles NNW of Cape Cossigny; the sea generally breaks over these shoals, and some rocks are visible at low water. The charted position of these shoals is approximate and they should not be approached in poor visibility in a depth of less than 30m.

Beagle Reef (20° 23'S., 117° 50'E.), the charted position of which is approximate, lies 8.5 miles NW of Cape Cossigny and has a depth of 0.8m. There is reported to be a clear channel between Beagle Reef and Geographe Shoals, however, the entire area is only partially surveyed and is best avoided. Shoals, with depths of 4.5m and 4.8m, lie 4.5 miles N of Beagle Reef. Shoals, with a depth of 5m, lies 3.75 miles and 5 miles WNW of Beagle Reef; these shoals are marked by tide rips.

Forestier Islands (20° 32'S., 117° 51'E.), the N extremity of which lies 1 mile NW of Cape Cossigny, form a chain of three narrow islands and reefs, extending SW, parallel to the coast and from 1 to 3.25 miles offshore for 15 miles. Reef Islet, the NE of the chain, has drying reefs extending 1.25 miles NE and SW from it. All of these islets are composed of narrow ridges of sandhills, covered with coarse grass and stunted shrubs. Rosnard, the center and largest islet, is 15m high and when seen from N, shows two peaks with a white patch under each.

Sable Islet (West Forestier Islet) (20° 35'S., 117° 45'E.) is divided into two parts which are connected by a rocky causeway awash at high water. The E part is 11m high, covered with grass and low bushes. The W part is a narrow strip about 1 mile in length, with Table Rock at its W end. Sable Islet is connected to the coast by a bank of sand and coral which dries. This bank extends from the W extremity of the islet and has some rocks with less than 1.8m over them on its outer extremity; depths less than 5m extend 3 miles NW, forming the E side of the approach to Depuch Island Anchorage.

4.18 Depuch Island (20° 38'S., 117° 43'E.) lies with North Point, its NE extremity, 2 miles SW of the W end of Sable Islet, and consists of an irregular pile of reddish-colored hills, in some parts resembling basaltic columns, rising to a height of 158m in the SW part. In the valleys, and on some of the more level parts near the summit of the island, there is a little soil, producing coarse grass and a few stunted trees. A bank of sand and coral, which dries, extends 4.5 miles SW from the N extremity of Depuch Island. On this bank are East Moore Islet and West Moore Islet, both having sandhills on them about 13m high; Sandy Islet, 3m high, is located between them. Black Rock, which dries 4m, lies on the drying flat close SW of the N extremity of the island.

The 10m curve extends up to 8 miles N of Depuch Island, and several shoal patches, with a least depth of 6m, lie up to 15 miles NNW of the island.

Depuch Island is an aboriginal reserve and landing is restricted.

Depuch Island Anchorage is situated E of the N part of the island and is entered between North Point and the sand bank extending SW from Sable Islet.

Good anchorage may be taken about 0.65 mile ESE of North Point, in a depth of 8.5m; this anchorage is protected from the NE by the same bank extending SW from Sable Islet. Small vessels can find anchorage, in about 3m, off Anchor Hill, 1.5 miles SE of North Point, taking care to avoid the shoals which extend 0.5 mile N from the shore in the vicinity of this hill.

Tidal currents at the anchorage attain a rate of 3 knots at springs, causing tide rips off North Point and Anchor Hill; the flood current sets SE and the ebb current sets NW.

Balla Balla (20° 40'S., 117° 47'E.), a small landlocked harbor in the creek of the same, is entered 3 miles SE of Anchor Hill; all but the narrow and tortuous entrance channel dry out.

Picard Islet (20° 11'S., 117° 16'E.) is a bare rock, 40m high, located about 6 miles SE of Port Walcott. It is connected to the coast by a sandspit, which dries. Hat Rock, and an islet 4m in height close SE, lie about 1.5 miles NE of Picard Islet.

Port Walcott (20° 38'S., 117° 13'E.)

World Port Index No. 54600

4.19 Port Walcott is entered between Picard Islet and Bezout Island, 9 miles NW. Port Walcott is a major iron ore exporting port.

Winds—Weather.—The Southeast Monsoon prevails from March to September, and seldom blows hard for more than a few hours, being associated with fine weather. The Northwest Monsoon prevails from October to March, with variable winds in September and in the transition period during March. Cyclones occasionally occur during the Northwest Monsoon, usually in the months of November and December.

Tides—Currents.—Mean spring tides rise about 5.2m and mean neaps about 3.4m.

The flood current sets SSE at a velocity of 1.1 knots at spring tides, 4 hours after low water, in a position about 0.75 mile E of the ore jetty. The ebb current sets across the same position, in a reciprocal direction, at a rate of 1.3 knots, about 3 hours after high water.

Depths—Limitations.—Cape Lambert Ore Jetty extends 1.5 miles NE from Cape Lambert. Two berths, each 350m long, are situated at the seaward end of the jetty. Berth No. 1, on the SE side, has a dredged depth of 18.5m and can accommodate vessels up to 225,000 dwt with a maximum beam of 50m. Berth No. 2, on the NE side, has a dredged depth of 19.8m and can accommodate vessels up to 290,000 dwt and a maximum beam of 55m.

Berthing of ore carriers is usually carried out 2 to 3 hours before high water.

The Service Jetty, close W of the root of the Ore Jetty, extends about 0.3 mile NE and has a berthing face 155m long, extended by dolphins to a length of 210m, with a depth alongside of 10m. Vessels up to 190m in length can be accommodated at the jetty.

The inbound entrance channel and the outbound buoyed channel are described in Directions.

Aspect.—**Cape Lambert** (20° 36'S., 117° 11'E.) is rocky and about 11m high. About 1 mile S of the cape, there is a promontory, 26m high, faced on the NE by a red cliff. To the W of the promontory, an extensive swamp nearly separates Cape Lambert from the mainland. The swamp is backed by rocky hills from 30 to 60m high, mostly barren and of a dark, rusty color. Submerged reefs extend 1.5 miles NE from the promontory.

A disused wooden jetty, about 300m long, projects E from Point Samson, which is situated 2.5 miles SSE of Cape Lambert. Reader Head, a dark bluff point about 2 miles S of Point Samson, is the N entrance point of Butcher Inlet. Cossack, an abandoned town, is located near the entrance and the town of Roebourne is located about 6 miles up the inlet.

John's Creek, a fishing boat harbor, is entered close S of Point Samson by way of a short channel marked by lighted beacons.

The most conspicuous landmarks are a tank near the root of the disused pier at Point Samson; the ore stockpiles at Cape Lambert; and a number of chimneys, 56m in elevation, standing about 0.5 mile W of the ore stockpiles.

Bezout Islet (20° 33'S., 117° 10'E.), about 2 miles N of Cape Lambert, is dark-colored and has a height of 27m. Boat Rock, which dries 4m, lies 0.5 mile E of Bezout Islet.

Jarman Islet, 21m high, is located within the port, 1.75 miles SE of Point Samson. Pelican Rocks, consisting of two rocks, one of which has a height of 1m, are located 1.25 miles ENE of Jarman Islet. Popes Nose Rock, 15m high, lies in a drying bay about 0.5 mile SW of Point Samson. A reef, which dries 3.9m, lies 0.9 mile ESE of the root of the ore jetty.

Delambre Reef (20° 26'S., 117° 15'E.), composed of coral and sand, with a least depth of 3.6m, lies 10 miles NNE of Cape Lambert. A 6.7m patch was reported (1958) to lie 2.75 miles SW of the shallowest part of Delambre Reef.

Tessa Shoals, with a least depth of 7m, lie between 9 and 12 miles NE of Cape Lambert, on the S side of Bass Pass.

Pilotage.—Pilot boarding areas are located close E of Lighted Buoy C1 and about 3.5 miles ENE of the seaward end of the ore jetty. Pilotage is optional for inbound vessels between Lighted Buoy C1 and the boarding area ENE of the oil jetty; between this position and the berths, pilotage is compulsory. Pilotage is compulsory for all vessels within the port area and for outbound vessels within the dredged channel.

Vessels should send an ETA 7 days, 48 hours, and 24 hours in advance. The pilot boat is equipped with VHF, but there is not a continuous watch. Pilots may also board by helicopter for vessels with a landing area; tankers may not board the pilot by helicopter. Vessels unable to accept a helicopter should advise the port at least 48 hours in advance.

There is a port radio station at Port Walcott.

Regulations.—All vessels must keep clear of large bulk carriers that are moored or maneuvering within an area 2 miles wide, extending to 4 miles NNE of Port Samsom and 2.5 miles N of Cape Lambert.

Anchorage.—Eleven designated anchor berths for ore carriers awaiting an alongside berth are situated within an area from 2.75 miles NE to 8 miles ENE of Cape Lambert. Depths in these anchor berths vary from 11.5 to 15m, sand.

Directions.—Owing to the incomplete nature of the survey in the approaches to Port Walcott, vessels should navigate only in the recommended tracks. No reliance should be placed on the lighted buoys always maintaining their exact positions.

Vessels should approach Port Walcott by making for Lighted Buoy C1, which is equipped with a racon and moored 18 miles NE of Cape Lambert.

A recommended track, for inbound vessels only, leads S from Lighted Buoy C1 for about 7 miles, then leads WSW to the port and anchorage area. This recommended track passes to the S of Tessa Shoals, which are marked by a lighted buoy, and have a least charted depth of 7m.

A deep-draft channel, for outbound vessels, winds NE and E from the port to the vicinity of Lighted Buoy C1. This channel, which passes through Bass Pass and N of Tessa Shoals, is dredged to a depth of 16m and is marked on both sides by lighted buoys. It is about 210m wide at the inshore end and gradually widens to about 600m at the seaward end. Entry to the port by this dredged and buoyed channel is prohibited.

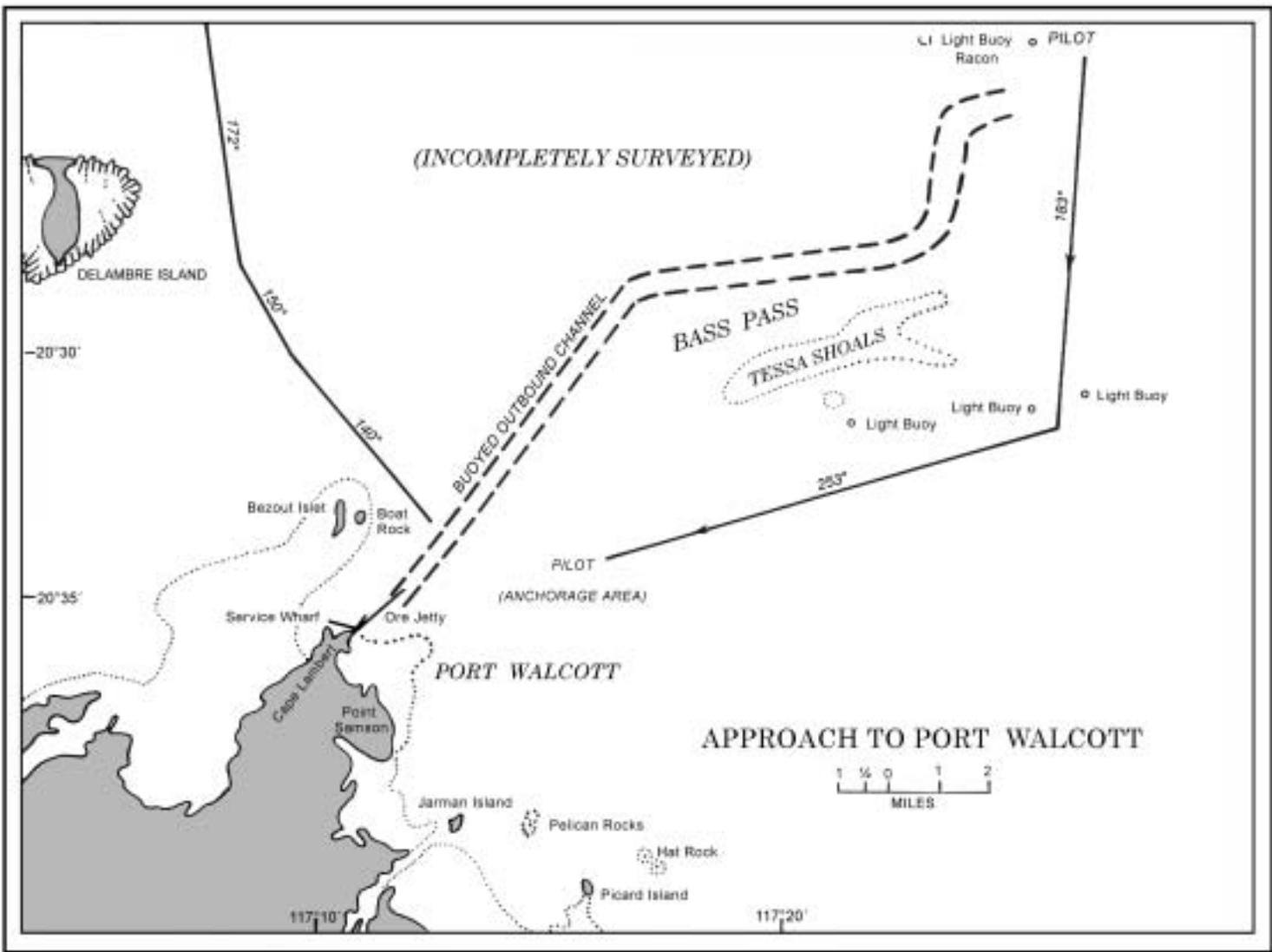
Caution.—Local magnetic disturbances have been found in the vicinity of a position 4 miles NNE of Cape Lambert, where the magnetic compass was deflected up to 55°.

Port Walcott to Dampier

4.20 From Port Walcott to Dampier, the coast is fronted by the islands that form the E part of the **Dampier Archipelago** (20° 27'S., 116° 47'E.). The islands of the archipelago are generally high, rocky, and of a dark red color, extending about 40 miles in an E-W direction.

Nickol Bay (20° 35'S., 116° 55'E.), lying SW of Delambre Island, has not been completely surveyed, but vessels with local knowledge may anchor, in depths of 11 to 12m, on the N side of the entrance, which is between Bezout Islet and the foul ground extending S from Delambre Island, then passing 5 miles N of **Dixon Island** (20° 38'S., 117° 04'E.). Dixon Island lies 7 miles WSW of Cape Lambert, in the E part of Nickol Bay. Port Robinson, a small harbor for vessels of less than 2.7m draft, lies close within the SW extremity of Dixon Island.

Delambre Island (20° 26'S., 117° 05'E.), the E island of the group, lies 10 miles NNW of Cape Lambert; it has a broken sandstone cliff 35m high, and a peculiar pinnacle rock at its N end, which, when approaching from the W, has the appearance of a square building. A drying reef extends from the E and W



sides of the island; foul ground, irregular depths, and strong tide rips extend for 3 miles from the island.

Hauy Islet, 12m high and 5.5 miles W of Delambre Island, is connected to the SE extremity of Legendre Island by a reef. Heavy tide rips extend to Delambre Island.

Cape Legendre (20° 21'S., 116° 50'E.) is the NW extremity of Legendre Island and is the northernmost point of Dampier Archipelago. Legendre Island, a rocky formation, is 17m high and sparsely covered with vegetation. Legendre Island Light is exhibited from a white hut situated about 0.5 mile SE of the cape. The N side of the island may be approached with confidence, but the SE extremity and the SW side are foul. Madeleine Shoals, 2.5 miles N of Cape Legendre, have a least depth of 14.1m, and Hammersley Shoal, which dries, extends 4 miles SW from the W end of Legendre Island.

Glomar Shoal (19° 31'S., 116° 47'E.), with a least depth of 22m, lies 50 miles N of the N extremity of Legendre Island and is located on a bank with general depths of 27 to 37m.

4.21 Wandoo Marine Terminal (20° 08'S., 116° 25'E.) is located about 28 miles NW of Cape Legendre. The terminal, which consists of a CALM buoy, serves the Wandoo Oil Field. The facility is surrounded by a cautionary area, which is best seen on the chart

Winds—Weather.—Four to five tropical cyclones develop in the area during the season, with one or two reaching storm force. The most active season is from December through April.

Tides—Currents.—The flood current sets SE, while the ebb current sets NW. Rates of 1.3 knots have been experienced at springs; rates of 0.4 knot have been experienced at neaps.

Seas are generally slight, except during cyclones or other isolated storms. Seas of 2m or less occur more than 95 percent of the time; however, during the winter seas as high as 4m can occur during E gales.

Depths—Limitations.—Vessels up to 100,000 dwt can be accommodated.

Pilotage.—Pilotage is compulsory for all vessels. The pilot boards in the anchorage area, located about 3 miles NW of the terminal and best seen on the chart.

Regulations.—Vessels are required to send their ETA 72, 48, 24, and 12 hours in advance and to provide a Notice of Readiness upon arrival.

4.22 Wanaea Terminal (19° 35'S., 116° 27'E.) is located 33 miles N of Wandoo Marine Terminal. The terminal consists of a 150,000 dwt tanker that has been converted into a Floating Production, Storage, and Offloading (FPSO) facility and serves the Wanaea Oil Field and the Cossack Oil Field. The facility is surrounded by a cautionary area, which is best seen on the chart.

Winds—Weather.—See Wandoo Marine Terminal in paragraph 4.21.

Tides—Currents.—The terminal is located close E of the Western Australian Current, which flows NE along the continental shelf, and W of the return current which flows along the coast. A rate of 1.5 knots can be expected during spring tides. A rate of 3 knots has been reported (1995) at the terminal.

Information on sea states around the terminal can be found in the description of Wandoo Marine Terminal in paragraph 4.21.

Depths—Limitations.—Vessels up to 150,000 dwt can be accommodated. Vessels are moored with their bow to the stern of the FPSO.

Berthing takes place only between 0600 and 1630.

Pilotage.—Pilotage is compulsory. Vessels initially position themselves 3 miles astern of the terminal. The vessel will then be instructed to approach to a distance of 1 mile astern of the terminal, where the pilot will board.

Regulations.—Vessels are required to send their ETA 72, 48, 24, and 12 hours in advance. Vessels shall notify the terminal if the ETA changes by more than 1 hour after the submission of the 12-hour notification.

Anchorage.—Glomar Shoal, 20 miles E of the terminal, has been reported (1997) to have been used as an anchorage by tankers.

4.23 Legendre Oilfield (19° 41'S., 116° 43'E.), located about 15 miles ESE of Wanaea Terminal, consists of a permanently-moored storage tanker and an offshore production unit close SE of it. The tanker and the production unit are connected by a pipeline. The facility is surrounded by a cautionary area, which has a radius of 3 miles.

Caution.—Extensive oil exploration activity is underway in the area between Glomar Shoal and Rankin Bank (19° 44'S., 115° 35'E.). Details can best be seen on the chart.

Mermaid Sound (20° 30'S., 116° 45'E.) is approached from the N and its entrance lies about 7 miles SW of Cape Legendre. The main ship channel to Port Dampier transits the entire length of the sound, which has general depths of 6.4 to 16m. The sound is bound on the E by Gidley Island, Angel Island, and the mainland S to Dampier. Gidley Island lies 4.25 miles S of the W extremity of Legendre Island and extends SSW about 3.5 miles. Angel Island, close S of Gidley Island, extends 3 miles farther SSW and Conzinc Islet lies about 1.5 miles SSW of Angel Island. Drying shoals, encumbered with numerous rocks and islets, lie SSE of Hammersley Shoal to Gidley Island, then continue S to Conzinc Islet.

Caution.—A spoil ground lies about 1 mile W of Conzinc Island.

4.24 Flying Foam Passage, about 0.5 mile wide, runs NE, with Dolphin Island on the E side and Gidley Island and Angel Island on the W side. Many pearl culture farms obstruct this passage, which can only be used by small craft with local knowledge.

Withnell Bay, with a depth of 4.6m, is entered about 2.5 miles S of the Conzinc Islet. Star Rock, with a depth of 0.3m, lies 1.25 miles W of the S entrance point of Withnell Bay and is marked by a lighted beacon. King Bay, entered between Phillip Point and Parker Point, lies 3.5 miles SW of Withnell Bay and has depths of less than 5m. The W side of Mermaid Sound is bound by the Malus Islands, West Lewis Island, and East Lewis Island.

Nelson Rocks (20° 27'S., 116° 41'E.) lie on the NW side of Mermaid Sound, 3.5 miles NNW of Courtenay Head. Courtenay Shoal, with a least depth of 3m, has a 3.3m spot

located about 2 miles NNE of Courtenay Head. A lighted buoy lies 0.5 mile off the E side of Courtenay Shoal.

Courtenay Head (20° 31'S., 116° 41'E.), the NE extremity of the four Malus Islands, is a remarkable bluff. The Malus Islands are all connected by sand spits. West Lewis Island lies about 2.5 miles SSW of Courtenay Head. There is a height of about 120m in the S part of the island. A small islet lies close off the N extremity of West Lewis Island and Pueblo Shoal, with a depth of 2.7m, lies 1.75 miles SE of the N extremity. East Lewis Island, 71m high, is separated from West Lewis Island by a boat channel, which dries. Boiler Rock, 42m high, lies 1 mile N of the NE extremity of East Lewis Island and is connected to it by a reef. The E coast of East Lewis Island is fronted by a spoil ground between Boiler Rock and Roe Point, the island's SE extremity.

The head of Mermaid Sound, about 15 miles within its entrance, has several islands located within it. From E to W the principal ones are Tidepole Island, East Intercourse Island, Mistaken Island, and Intercourse Island. Tidepole Island, about 0.5 mile long N to S, with a height of 14m, has a spoil ground along the length of its W side. East Intercourse Island, 50m high, is about 1.5 miles in length, in a NE-SW direction, and is connected to the mainland by a causeway. Mistaken Island, 13m high, lies 0.5 mile W of the mainland by a causeway which extends SSE to East Middle Intercourse Islet, then on SSE.

The coast near the S end of the sound is generally high and rocky; the hills, like the islands, are of a dark reddish color.

Dampier (20° 40'S., 116° 43'E.)

World Port Index No. 54605

4.25 The port of Dampier is entered between the NW end of Legendre Island and Nelson Rocks, about 10 miles SW.

Dampier is one of the principal iron ore exporting ports on the NW coast of Australia; salt is also exported. Imports include general cargo and building materials.

Dampier Port Authority Home Page

<http://www.dpa.wa.gov.au>

Winds—Weather.—The Dampier Archipelago is located in the cyclone belt, with an incidence of about three cyclones per year in an area extending from Port Hedland to North West Cape. The cyclone season lasts from December to April.

Prevailing winds are easterly in winter and westerly in summer, but the surrounding hills give considerable protection and wind in excess of 20 knots are infrequent.

The port facilities are situated in sheltered waters and experience only slight seas and an occasional low northerly swell in the summer months.

Tides—Cur rents.—Spring tides at Dampier rise 4.5m; neap tides rise 3.2m.

Tidal currents are weak within the archipelago, the flood flowing to the S, with a maximum strength of less than 1 knot at spring tides in the berthing areas.

Depths—Limitations.—A recommended track, which is indicated on the chart, leads from the Sea Lighted Buoy to the

entrance of the dredged channel SSE of Courtenay Head. This channel, which is marked by lighted beacons, is maintained to a depth of 15.6m until it bifurcates about 1.5 miles N of the E extremity of East Intercourse Island. The SE channel, maintained to a depth of 15.3m and marked by lighted beacons, leads to the ore jetty at Parker Point. The SW channel, maintained to a depth of 15.5m and marked by lighted beacons, leads to the ore jetty on East Intercourse Island.

Normally vessels proceeding to the loading jetties do so by passing straight across the bay from the area close E of the N entrance to the dredged channel. The dredged channel is used only by outbound loaded ships.

A recommended track runs directly from the pilot boarding station in a SSE direction into the sound, and is used by vessels proceeding to the LNG berth near Withnell Bay.

Parker Point Ore Jetty, on the E side of the port, consists of a tubular steel pile structure with a slewing boom shiploader. The pier face is 269m in length; however, ships berth port side-to-eight dolphins, which stand clear of the jetty structure and increase the berth to about 355m. The berth has a maintained depth of 16.8m. By day, the berth will accommodate vessels up to 140,000 dwt, with a maximum length of 270m; by night, vessel size is restricted to 115,000 dwt, with a maximum length of 260m. The maximum departure draft from this berth is dependent upon tidal conditions and adequate underkeel clearance.

A Service Wharf is located about 0.5 mile E of the Parker Point Ore Jetty. The approach to the wharf is marked by a range and has depths of 6.8. The wharf is 70m in length and can accommodate vessels up to 175m in length, with drafts up to 7.2m.

East Intercourse Island Ore Jetty is similar in design to Parker Point Ore Jetty, except vessels berth starboard side-to. The pier face is 341m long; the berthing length is extended to 430m by dolphins. The berth has a dredged depth of 21.5m. Vessels of up to 250,000 dwt, with a maximum length of 314m and beam of 47m, can berth at the jetty. The jetty is connected to the open sea by a channel dredged to 15.3m.

Mistaken Island Salt Wharf has a T-head and is located about 0.75 mile WSW of East Intercourse Ore Jetty. The head, together with the dolphins at either end, forms a berth of 358m in length. Vessels of up to 40,000 dwt can be accommodated alongside the berth, which has a depth of 12m at the berth and in the approach. Due to the fixed nature of the loader, vessels must be warped alongside to bring each working hatch under the loading boom. Vessels less than 35,000 dwt must have an underkeel clearance of 1m; vessels greater than 35,000 dwt must have an underkeel clearance of 1.5m.

A channel, dredged to a depth of 5.5m, leads between East Intercourse Island and the spoil ground extending W from Tidepole Island. There is a basin, dredged to a depth of 7.1m, close NE of the causeway joining East Intercourse Island to the mainland; the basin provides a well-sheltered anchorage for small vessels.

Withnell Bay Loading Terminal, an offshore LNG terminal with a depth of 13.2m alongside, lies 1 mile WSW of the S entrance point to Withnell Bay. The berth consists of six breasting dolphins, on a bearing of 150°-330°, with mooring dolphins at each end. Vessels usually berth port side-to; a turning basin marked by lighted buoys is situated about 0.4



Courtesy of Dampier Port Authority

Dampier Public Wharf from S

mile N of the berth. An LPG wharf, with a depth of 13.5m alongside, is situated NE of the LNG wharf. The approach to the berths is maintained to a depth of 12.3m.

A basin used by vessels which are employed on the natural gas projects is located in the N part of King Bay. The approach to the basin is marked by directional lights.

The Dampier Public Wharf, also known as the Woodside Materials Offloading Facilities, extends 0.1 mile NNW from the shore about 0.5 mile NNE of Phillip Point. The berth at the head of the jetty, which has dolphins at either end, is 274m in length with a dredged depth of 10m alongside. A shoal patch, with a depth of 7m and marked by a lighted beacon, lies about 2 miles WNW of the jetty head.

Aspect—Landmarks.—The most prominent landmarks in Port Dampier are a group of tanks and a group of chimneys standing about 0.4 mile and 0.6 mile, respectively, SW of the root of the Service Wharf. A radio mast, 0.65 mile SE of the tanks, is also conspicuous, as are three tanks close WSW of the mast. White Peak, 157m, high, is located 3 miles S of Parker Point and Sharp Peak, 103m high, stands 2.5 miles W of White Peak. There are three peaks, close together, 96m high, located between White Peak and Sharp Peak.

A light is shown from the top of the port control tower, 45m high, on East Intercourse Island. A light is also shown from a structure, 58m in elevation, standing about 0.2 mile ENE of the control tower.

A conspicuous tower, marked by red lights and 240m in elevation, stands on a hilltop 1.75 miles E of the N entrance point to Withnell Bay. A gas flare tower, 149m high, stands about 0.75 mile SSE of the S entrance point to the bay and a tower, 118m high, is situated 0.5 mile N of the gas flare.

Pilotage.—Pilotage is compulsory for all vessels entering, leaving, and maneuvering within the port, except for those of 150 tons or less and those whose masters hold a valid pilotage

exemption. The pilot boards N of the Sea Buoy, about 6.5 miles NNE of Courtenay Head Light. The pilot boat is equipped with radiotelephone. The port frequencies are VHF channel 11 for the port working channel, VHF channel 67 for emergencies, and VHF channel 72 for ship to ship communications. There is a port radio station and radar surveillance facility at East Intercourse Island.

Pilots may also be embarked by helicopters.

Regulations.—Dampier is a first port of entry. Vessels arriving from overseas are to radio their ETA 7 days in advance, confirming 72, 48, and 24 hours before arrival. Other vessels should radio their ETA 72, 48, and 24 hours before arrival. The 7-day or 72-hour message, as appropriate, should include the vessel's arrival draft, fore and aft, and its deepest departure draft.

Vessels approaching the port or at anchor must maintain a continuous listening watch on VHF channels 11 and 16.

Vessels should contact Dampier Port Control 4 hours prior to arrival, on VHF channel 16, for pilot boarding information and anchoring or berthing instructions.

Anchorage.—Anchorage can be obtained in depths of about 15m, 2.75 miles ESE of Courtenay Head Light; the holding ground is fair, with a bottom composed of spongy sandstone rock below 1.5m of silt.

Anchorage berths S1 through S4, with depths of 8 to 10m, have been established N of the channel to Parker Point. Anchorage berth W5, with depths of 11 to 12m, has been established 0.5 mile N of East Intercourse Island Ore Jetty. All the anchorage berths have a radius of 510m.

Caution.—A submarine pipeline runs from a position about 0.25 mile SW of the S entrance point of Withnell Bay in a N direction to the entrance of the sound and then NW to the Rankin Gas Field. Within the port, anchorage is prohibited for 0.5 mile each side of the pipeline.



Courtesy of Dampier Port Authority

Dampier Public Wharf from NW

Dampier to Cape Preston

4.26 From Dampier to Cape Preston, about 28 miles WSW, the coast is low and swampy; the land within for some distance, except near Cape Preston, is flooded at high water.

Mount Leopold (20° 59'S., 116° 37'E.), 252m high, is located 25 miles ESE of Cape Preston and 12 miles inland. Mount Wilkie, 14 miles SE of the same cape and 6.5 miles inland, is 163m high. Mount Potter, 87m high, and Mount Rough, 69m high, are located 6 miles SSE and 5 miles S, respectively, of Cape Preston.

Cape Preston (20° 50'S., 116° 13'E.) is the N extremity of a portion of land rising to a height of 60m at Mount Preston, which is separated from the land about 3 miles S of the cape by a low strip, which is occasionally flooded.

The coastal waters from Port Dampier to Cape Preston are fronted by the islands that form the W part of the Dampier Archipelago. An extensive bank, with depths of less than 10m, extends WSW from Nelson Rocks, previously described in [paragraph 4.24](#), for a distance of 10 miles. Miller Rocks, which dry 0.9m, lie 2 miles WNW of Nelson Rocks and Brigadier Islet lies 1.5 miles WSW of Miller Rocks.

Rosemary Island (20° 29'S., 116° 36'E.), which is about 76m high, lies on this bank; from the NNE the island appears as three hummocks. A light is exhibited from a white hut, situated on high ground, near the center of the island. The NW side of the island is fronted by Sailfish Reef, which breaks; the 20m curve runs close along the seaward side of the reef.

Kendrew Islet, 9m high, lies on the bank about 3.5 miles W of Rosemary Island Light. Roly Rock, 5m high, lies on SW extremity of the bank, about 2 miles SW of Kendrew Islet.

Enderby Island (20° 36'S., 116° 32'E.), about 7 miles in length E-W, has a height of 90m and lies with Rocky Head, its SW extremity, about 9.5 miles SW of Rosemary Island. Bare Rock, 9m high, stands on an isolated reef which extends about 3 miles S, and is located about 4 miles NNW of Rocky Head.

Goodwyn Island lies 2 miles N of Enderby Island and stands on a bank, with depths of less than 10m, extending N from a bay on the N side of Enderby Island.

North West Reefs, which dry 4.2m, lie about 3 miles WSW of Rocky Head and South West Reef, which dries 1.2m, lies 3.5 miles S of North West Reefs.

Eaglehawk Island, 36m high, is located 3 miles SSW of Rocky Head and is fringed by a drying reef which extends up

to 0.5 mile in places. Egret Islet lies close off the W extremity of Eaglehawk Island.

4.27 Enderby Reef (20° 36'S., 116° 32'E.), with depths of from 2.8 to 4.2m, extends about 2 miles ESE from close S of Rocky Head. Dockrell Reef, with a least depth of 0.7m, lies about 1.5 miles SSE of the SE extremity of Enderby Reef. South East Reef, with a depth of 3.7m, lies 3 miles WSW of Dockrell Reef.

Mermaid Strait (20° 39'S., 116° 32'E.) is entered between Rocky Head and North West Reefs; the strait leads to the Port of Dampier. A recommended track is indicated on the chart. The strait should only be used in daylight by vessels with local knowledge; the least depth along the track was reported to be 6.4m.

Cod Bank, an isolated bank with a least depth of 8.2m, lies about 9 miles W of South West Reef; another shoal spot, with a depth of 10m, is situated about 4.5 miles WSW of Cod Bank.

Regnard Bay, an extensive shoal bay, extends along the coast for a distance of about 22 miles in an ENE direction from Cape Preston. The 5m curve lies about 5 miles offshore of this bay. Several rivers and creeks flow into the bay, the principal one being Maitland River, which flows into the E part.

Northeast Regnard Islet, a small sandy islet 13.1m high, lies 6.5 miles ENE of Cape Preston. Southwest Regnard Islet, 17.3m high, lies 2.5 miles ENE of the cape. A 1.8m patch lies 1.75 miles N of Northeast Regnard Islet.

Cape Preston to North West Cape

4.28 The coast between Cape Preston and James Point, 8.5 miles SSW, is backed by a rocky range of hills; Mount Rough and Mount Potter are located in these hills. Delaney Hill, 9m high, stands 6 miles SW of James Point and is prominent. Mount Nicholson, 154m high, is a conspicuous point located inland about 16 miles S of Delaney Hill.

From Delaney Hill to an unnamed point 10 miles SW, the coast is backed by sandhills. Mount Salt, a hillock 21m high, stands 1.5 miles inland from the coast, 6.5 miles SW of Delaney Hill. Between this unnamed point and **Robe Point** (21° 20'S., 115° 38'E.), 10m high, about 15 miles SW, there is a shoal bay; the shore of the bay is a mangrove swamp, flooded at high water and backed by low sandhills at its head.

Fortescue Road (20° 53'S., 116° 07'E.) is bordered on the S and E by the coastline between Cape Preston and the entrance to the Fortescue River, 12 miles SSW; on the W it is bordered by a chain of islets, shoals, and reefs which lie from 5 to 9 miles offshore and extend 15 miles SSW from McLennan Bank, 8 miles NW of Cape Preston.

McLennan Bank (20° 46'S., 116° 05'E.), the N danger in the approach to Fortescue Road, has a least depth of 1.2m.

Steamboat Island (20° 49'S., 116° 04'E.), 12m high, lies 8 miles W of Cape Preston; this island stands on an extensive shoal with a least depth of 0.6m, which extends 2.5 miles NE and 3 miles SSE from the island. The Man in the Boat Rock, which dries 3.6m, and Petersen Rock, with a depth of 1.5m, lie 1 and 2 miles NE, respectively, of Steamboat Island.

Fortescue Island (20° 55'S., 116° 02'E.), 12m high, lies 5.5 miles SSW of Steamboat Island and on the N part of the coastal bank with depths of less than 5m over it, which extends

up to 7 miles offshore at this point. North Fortescue Reef and South Fortescue Rock, with depths of 2m or less over them, lie 1 and 1.75 miles SSW, respectively, of Fortescue Island.

Stewart Islet, 12.2m high, lies 11 miles SW of McLennan Bank and 10 miles offshore. Stewart Rocks, with a depth of 0.6m, lie on the NW extremity of a rocky ledge that extends 1.5 miles N of Stewart Islet.

The Fortescue River, entered about 4 miles WSW of James Point, is navigable by vessels of light draft for about 1 mile; a landing place is situated on the W bank about 0.5 mile within the entrance.

The channel between Steamboat Island and Fortescue Island, although used by coastal craft, is not recommended.

Anchorage may be taken, in a depth of 6m, mud, about 4.5 miles ESE of Fortescue Island; considerable swell is experienced at this anchorage during strong winds.

Tidal currents in the anchorage set SW on the rising tide and NE during the falling tide, the rate being from 1 to 1.5 knots.

Vessels approaching Fortescue Road should keep Cape Preston bearing more than 135° until Steamboat Island bears 248°; then a SW course may be steered for the anchorage.

4.29 Passage Islands (21° 03'S., 115° 48'E.) are a chain of seven islands that front the shore between Sholl Island and South Passage Islet, about 16 miles SSW. Sholl Island, 15m high, is sandy, with small bushes on it. The island lies 4.5 miles SSW of Stewart Islet and about 8 miles offshore. Sholl Island is located on a reef, which dries in part, and is fairly steep-to on the NW; the reef extends 6 miles SSW. Round Islet, 9m high, and Long Islet, 13m high, lie on the reef 2.5 and 5 miles SSW, respectively, of Sholl Island.

Pearl culture areas are located in the vicinity of Sholl Island. The farms, which may be floating or fixed structures, and their associated moorings should be avoided. The farms are generally marked by buoys and beacons, which may be lit.

The remaining islets of the Passage Islands group lie on the coastal bank and from 4 to 7 miles offshore; in order from N to S, they are Middle Islet, Angle Islet, Passage Islet, and South Passage Islet. A reef, which dries 1.2m, lies between the two last mentioned islets. All the islets in the group are of sandy formation and sparsely vegetated, with flat summits.

Meda Reef (21° 03'S., 115° 46'E.), composed of coral and with a least depth of 0.9m, is about 1 mile in extent and lies about 8 miles offshore.

North Sandy Islet (21° 06'S., 115° 39'E.), 11m high, is located near the center of a reef, partly dry at low water; a light is shown from a metal framework tower in the center of the islet.

Pup Islet, a rock 8m high, lies 3.5 miles S of North Sandy Islet and is surrounded by a reef.

Great Sandy Islet (Beagle Islet) (21° 12'S., 115° 38'E.), 11m high, lies on a drying reef about 6.5 miles offshore. The summit of the island near its SW end is covered with stunted bushes. Great Sandy Islet light is exhibited from a white metal building near the SW extremity of the island; two conspicuous white masts stand near the NE end of the islet.

Anchorage can be taken, in 7.3m, sand and mud, about 0.5 mile SE of the summit of Great Sandy Islet, or in 8m, about 1 mile E.

4.30 Monte Bello Islands (20° 27'S., 115° 33'E.), about 45 miles NW of Cape Preston, are a group of islands, islets, and rocks extending about 10 miles N-S and 6 miles E-W. They are surrounded by an extensive coral reef, which is awash in places on its W side. The islands have been reported to give good radar returns up to 17 miles

Caution.—Pearl farms are prevalent around the Monte Bello Islands. These farms, which may be floating or fixed structures, and their associated moorings should be avoided. The farms are generally marked by buoys and beacons, which may be lit.

Extensive oil and gas operations are conducted in the vicinity of Monte Bello Islands and Barrow Island. Dangers are best seen on the chart.

North West Island (20° 22'S., 115° 31'E.), 20m high, is surrounded by a reef which extends 1.5 miles N and NW from it. North West Island Light is exhibited from a white hut on the N side of the island.

Trimouille Island, 37m high, is located 0.75 mile SE of North West Island. The island has a partially drying reef which extends up to 1 mile off its NE side. A light is exhibited from a white hut on the S summit of the island.

Caution.—Unexploded ordnance lies in an area, with a radius of 0.5 mile, centered about 5 miles ENE of the light on Trimouille Island, in a depth of about 45m.

South East Islet, 21m high, is close off the SE extremity of Trimouille Island; it is grassy and has a well-defined summit on its NW end. Foul ground and depths of less than 10m extend 4.5 miles SSE from South East Islet and on it are a number of islets, rocks, and reefs.

Flag Islet, which is 10m high and covered with grass, lies 2 miles SSW of South East Islet, on the above-described foul ground.

Hermite Island lies 3 miles S of North West Island; between these islands there is a chain of islet and rocks. Hermite Island is covered with grass and has a height of 29m at the S end. The fringing reef, which has drying patches, extends up to 4 miles W of the island. A conspicuous shed stands near the SE extremity of Hermite Island, 0.5 mile SE of the 29m hillock.

Rocks, awash at high water, lie within 1 mile of the outer edge of the SW part of the Monte Bello Islands reef and 5 miles N of the N extremity of Barrow Island; they are difficult to see in the heavy breakers in the vicinity.

Anchorage.—During W winds, anchorage can be taken about 0.6 mile SE of Flag Islet, in depths of from 6 to 9m. Anchorage can also be taken in Parting Pool, 1.5 miles S of South East Islet, in depths of 16m, sand and shell.

There is anchorage, in a depth of 29m, in a position 1.25 miles NE from the SE extremity of North West Island, but there is a fairly heavy swell here and it is close to the shoal extending from Trimouille Island.

These anchorages should only be approached by vessels with local knowledge.

4.31 Tryal Rocks (20° 17'S., 115° 22'E.) consist of two coral reefs, close together, about 1.25 miles in length NE-SW; the S reef dries 2.7m. The rocks are located about 9 miles NW of Monte Bello Islands.

Depths of less than 20m lie within 6 miles SW and 4 miles NW of Tryal Rocks; the sea breaks on these shallower depths in bad weather.

A 5.5m patch lies 3 miles W of North West Island Light.

The channel between Tryal Rocks and Monte Bello Islands is 7 miles wide, with depths of 31 to 40m, and may be used by vessels proceeding to the E side of Barrow Island.

Lowendal Islets (20° 29'S., 115° 35'E.), located about 8 miles E of Cape Dupuy, the N end of Barrow Island, extend for about 11.5 miles S from the SE extremity of Hermite Island and are of sandy formation in part and covered with grass. Shoal water lies between these islets and Barrow Island.

Varanus Island (20° 39'S., 115° 34'E.) is the largest islet of the group, being 20m high. **Varanus Island Terminal** (20° 37'S., 115° 35'E.) ([World Port Index No. 54596](#)) serves Harriet Oilfield, which includes Harriet A, Harriet B, and Harriet C Production Platforms, located at 3.25, 4.25, and 5.25 miles NE, respectively, of the NE extremity of the islet. Lighted platforms, "Sinbad" and "Campbell" lie 7 and 12 miles NE, respectively, of the Harriet group. Cautionary areas, with a radius of 5 miles, surround the lighted platforms and are best seen on the chart. A submarine pipeline extends from the NE extremity of the islet to the platforms.

The offshore terminal, consisting of mooring buoys, is located about 2 miles ENE of the NE extremity of the islet; a submarine pipeline extends SW from the terminal to the shore. A group of tanks and a radio mast were reported to be located on the SE portion of the islet.

The waters N and S of the terminal are incompletely surveyed and vessels should approach the terminal from the E, with the terminal bearing between 240° and 300°. The port limits are those waters within a circle, with a radius of 3.25 miles, centered on the terminal.

A pilot will board in a position about 5 miles E of the mooring buoys. The terminal is equipped with VHF. Vessels up to 140,000 dwt, with lengths up to 300m, beam up to 46m, and drafts up to 17m, can be accommodated. The vessel's ETA should be sent 96 hours in advance and confirmed or amended 48 and 24 hours prior to arrival.

The recommended anchorage is 3 miles E of the terminal, in a charted depth of about 25m, variable holding ground.

Caution.—In the approach, there is a least depth of 20.1m, about 4.5 miles ENE of the terminal. Within 0.5 mile of the terminal, the least depth is 20.4m.

4.32 Barrow Island (20° 47'S., 115° 24'E.) is formed by irregular and steep sand hills, extending N and S, which are thickly covered with grass and small bushes.

The summit, 76m high, lies 9.5 miles S from Cape Dupuy, its N extremity, in about the middle of the island. An ill-defined hill, 67m high, stands 4 miles SSW of Cape Dupuy; from this hill, the land slopes down to some rounded hills at the cape.

Double Islet (20° 44'S., 115° 30'E.), with several small islets within 1 mile NW, lies 4 miles SSE of Surf Point, the NE extremity of Barrow Island, and 1 mile offshore. Double Islet Light is shown from a metal pipe.

Channel Rock is an isolated rock located about 0.5 mile SE of the southernmost Double Islet.

Latitude Point (20° 47'S., 115° 28'E.) is located 7 miles SSE of Cape Dupuy. The S extremity of the foul ground extending SSW from Lowendal Islets lies 2 miles ESE of Latitude Point.

Boodie Island, 27m high, lies 4 miles S of the SW extremity of Barrow Island. Pasco Islet, 29m high, lies 0.5 mile E of the island described above; Poivre Reef, which dries, lies 3 miles SW of the same island. There are depths of 7.6 to 11m about 1.75 miles W, and a 13.5m patch 7.25 miles WSW, of Poivre Reef.

Barrow Island Shoals (21° 05'S., 115° 24'E.), with depths of less than 5m, extend nearly 17 miles S from the S extremity of Barrow Island, but only the S part of these shoals, which borders the N side of Mary Anne Passage have been surveyed. A sandy cay on the shoals, 12.5 miles SE of Pasco Islet, dries 1.5m. The sea seldom breaks on these shoals, but they can generally be discerned by an area of smooth water over them, or a tide rip near their edges.

Cape Poivre (20° 49'S., 115° 19'E.) is a sharp, craggy point on the SW side of Barrow Island; Cape Malouet is located about 7 miles farther NE, about 4 miles SW of Cape Dupuy. A shoal area located about midway between Cape Poivre and Cape Malouet extends about 1 mile to seaward.

Barrow Island Light, situated in the NE part of the island, is shown from a metal post on a concrete base.

4.33 Barrow Island Offshore Terminal (20° 48'S., 115° 33'E.) ([World Port Index No. 54595](#)) is situated 6 miles ESE of Latitude Point and is connected to the shore by a submarine pipeline. The port limit is an arc of a circle, with a radius of 7 miles, centered on Latitude Point.

Winds—Weather.—The prevailing winds are from the SW in the summer and the E in the winter.

Tides.—Currents.—The tidal currents in the vicinity of the terminal attain a rate of about 1 knot at springs, with the flood flowing WSW and the ebbflowing ENE.

Depths—Limitations.—The terminal consists of a group of mooring buoys, which provide a berth for vessels up to 105,000 dwt, with a maximum length of 250m; the minimum depth in the vicinity of the berth is 13.2m. An underkeel clearance of 1.6m must be maintained.

Pilotage.—Pilotage is compulsory. A berthing master boards 2 to 3 miles E of the terminal and remains on board throughout the stay. Pratique must be obtained before arrival at Barrow Island. Port Hedland is the nearest port where this can be obtained.

Regulations.—Vessels proceeding to the terminal should send their ETA 96, 48, 24, and 12 hours in advance to WAPET, Perth. The 96-hour message should contain the following information:

1. Quantity of ballast water carried.
2. Quality of ballast water carried.
3. Arrival draft.

Berthing is only done on the ebb tide in calm conditions during daylight hours. Tankers with local knowledge may be allowed to berth at night if they carry adequate searchlights.

Directions.—The terminal should be approached by passing the Monte Bello Islands to the N and E, then proceeding to the berth on the due W recommended track, indicated on the chart.

The waters to the S of this route have been incompletely surveyed.

Anchorage.—Anchorage can be obtained 2 miles E of the terminal, with good holding ground reported. Anchorage is prohibited in the vicinity of the pipeline, which is marked at the seaward end by a lighted buoy.

Caution.—Shoal depths of 10.3m and 10m lie 2.75 miles and 4.75 miles ESE of the terminal.

Rankin Bank (19° 44'S., 115° 35'E.), with a least charted depth of 11m reported in 1979, lies about 35 miles N of the Monte Bello Islands and is the outermost danger off the group. Several well heads are located to the E and S of Rankin Bank.

North Rankin Gas Field is under development in the vicinity of Rankin Bank. A production platform is situated about 30 miles ENE of the bank; a restricted area, with a radius of 5 miles, is centered on the platform. A submarine pipeline runs SE from the platform to Withnell Bay within Dampier.

Robe Point to North West Cape

4.34 Beadon Point (21° 38'S., 115° 06'E.) is situated about 40 miles SW of Robe Point. The coast between is low and sandy, with an extensive coastal marsh which floods at high water for the first 24 miles; from this distance to Coolgra Point, another 8 miles, there is a ridge of sandhills to 12m in height, partially covered with vegetation. The coast between Coolgra Point and Beadon Point, 8 miles WSW, is backed by sandhills up to 15m high, slightly covered with vegetation and broken occasionally by shoal mangrove creeks. Beadon Point, the W entrance point of Beadon Bay, has a conspicuous bare sandhill, 21m high.

The coastal waters from Robe Point to Beadon Point are shoal, and much encumbered with islets and drying shoals, the 10m curve lies up to 100.5 miles off the mainland in this area.

Mary Anne Reef (21° 16'S., 115° 28'E.) lies on the NW side of Mary Anne Islets, about 14 miles W of Robe Point. Mary Anne Reef Light is exhibited from a white hut on a concrete base. Flinders Shoal, with a least depth of 1.8m, lies 1.5 miles NNE of Mary Anne Reef Light; overfalls and tide rips are seen on this shoal on the ebb current.

Nares Rock (21° 26'S., 115° 18'E.) lies on a shoal patch, with a depth of less than 1.8m, close within the 10m curve, about 14 miles SSW of Mary Anne Reef.

The Mangrove Islands lie SE of Nares Rock; an unexamined patch, with a depth of 5.2m, lies 5 miles NW of the same rock.

Direction Island (21° 32'S., 115° 08'E.) lies 6 miles NNE of Beadon Point; shoal water extends from Direction Island ENE to Nares Rock. The island is 12m high and covered with bushes. A conspicuous white building with black stripes, which is not visible from N, stands on the islet.

The dangers N of Mary Anne Passage along this section lie W and WSW of the S part of Barrow Island Shoals.

Ripple Shoals (21° 11'S., 115° 20'E.), with a least depth 3.3m, lie about 9 miles NW of Mary Anne Reef Light.

Taunton Reef, about 1 mile in diameter and on which the sea breaks, lies about 14 miles WSW of Mary Anne Reef; a submerged well head, marked close E by a buoy, lies close ESE of Taunton Reef.

Airlie Island (21° 19'S., 115° 10'E.) is small and sparsely vegetated with a flat summit 9m high. A sunken reef, which extends 2.5 miles W from the islet, seldom breaks, except with a heavy swell. Airlie Island Light is exhibited from a stainless steel framework tower, 21m high, near the center of the island; two conspicuous tanks lie close NE of the light. A shoal depth of 9.6m lies 6.5 miles W of Airlie Island Light.

Caution.—An underwater oil pipeline extends W from Taunton Reef to Airlie Island. Two oil production platforms, exhibiting lights and surrounded by a restricted zone, are situated 13 miles and 10.5 miles NNE of Airlie Island. A pipeline is laid between each platform and from the N platform SSW to Airlie Island. Moorings are situated 1 mile N of Airlie Islet at the S end of the pipeline. A well head, exhibiting a light and surrounded by a restricted zone, lies 1 mile E of the N platform; a pipeline is laid between platform and well head.

4.35 Airlie Island Terminal (21° 18'S., 115° 10'E.) is situated 1 mile NNE of Airlie Island and services Chervil Oil Field. The terminal consists of six buoys and two swamped moorings. The berth is exposed from W and N and is about 0.75 mile from reefs to the S. A safety zone surrounds the terminal.

Tides—Currents.—Tidal currents may attain a rate of 4 knots at springs.

Depths—Limitations.—The depth at the terminal is 15.4m. The terminal is designed to accept vessels up to 120,000 dwt having a length of 300m, a beam of 50m, and a deep draft of 14.5m.

Pilotage.—Pilotage is compulsory. Tugs are not available. Berthing by night is preferred due to reduced wind and less heat.

Regulations.—Vessels should send their ETA to Western Mining Company 96 hours in advance, amending or confirming the ETA 72, 48, and 24 hours in advance. The pilot boards in position 21 10'S., 115 06'E

Anchorage.—Anchorage may be taken about 10 miles NNW of Airlie Island.

Rosily Islets (21° 16'S., 115° 01'E.), 9 miles WNW of Airlie Island, consist of a rocky islet 1m high, with a sand cay 0.8m high close E. The islets are located on a sunken coral reef which extends 0.75 mile N and W. A bank, with a least depth of 5.3m, extends 3 miles SE.

Penguin Bank (21° 12'S., 115° 04'E.), of coral, with a least depth of 4.6m, lies 4.25 miles NNE of Rosily Islets and seldom breaks, except with a heavy swell. There is an 11.3m patch 4.5 miles ENE of Penguin Bank.

Sultan Reef (21° 25'S., 115° 06'E.), a coral patch, lies 6.75 miles SW of Airlie Island. The sea only breaks on this reef when there is a swell.

4.36 Thevenard Island (21° 28'S., 115° 00'E.), 12m high on its W end, lies 12 miles NNW of Beadon Point. Three conspicuous oil tanks stand near the E end of the island. The island is surrounded by a drying reef, which extends 2.75 miles N and NW. A patch, which dries 1.2m, lies close within the edge of the reef, 1.75 miles S from the E end of the island.

Saladin Marine Terminal (21° 27'S., 115° 03'E.) is located on the E side of Thevenard Island. Saladin A and Saladin B,

which are oil production platforms, are situated 2 miles and 1.25 miles ENE, respectively, of the E extremity of the island. Saladin C, an oil production platform, lies 2 miles SW of the E extremity of the island. Yammaderry, another oil production platform, lies about 1 mile SW of Saladin C. All the production platforms are surrounded by safety zones.

A lighted buoy marks the E side of a well head situated 0.75 mile S of the E end of the island; a lighted buoy also marks the W side of a well head situated 3 miles SW of the E extremity of the island.

A tanker mooring buoy is located about 3.5 miles NE of the E end of the island. A restricted area, with a radius of 1 mile, surrounds the mooring buoy; vessels may enter this area only with permission.

Pilotage is compulsory. Vessels should contact the terminal and maintain a listening watch on VHF channel 14 when within 100 miles of the pilot boarding position. The pilot boards about 6.25 miles NW of the W end of Thevenard Island.

Caution.—Oil pipelines connect Saladin A and Saladin B; pipelines also connect the E end of the island to Saladin A and Saladin B. A pipeline also connects the tanker mooring buoy to the E end of the island.

Pipelines also connect Yammaderry with Saladin C and Saladin C with the E end of the island.

Brewis Reef (21° 30'S., 114° 55'E.), 3.5 miles SW of Thevenard Island, is nearly awash at its W end; vessels in transit through the Inner Route pass S of this route.

Caution.—Cowle, a lighted production platform, which is surrounded by a safety zone and connected to the E end of Thevenard Island by a submerged pipeline, stands about 2.5 miles ESE of the E end of Brewis Reef. The platform lies close N of the charted preferred route to the port of Onslow.

4.37 Griffin Marine Terminal (21 13'S., 114 39'E.) is a Floating Production Storage and Offloading (FPSO) facility. It is situated 23.5 miles NE of Thevenard Island and is the outlet for Griffin Oil Field.

Winds—Weather.—As the terminal is an open and unsheltered mooring, there may be times when mooring operations may be difficult or inadvisable. Under these circumstances, the terminal will be closed until conditions improve. During the summer months, from October to March, the prevailing winds will be from the S and SW quadrant; in the winter months, June to August, the prevailing winds will be from the S and SE quadrant.

During the summer months, the area is subject to occasional cyclones; December through April is the most active period. In January and February in particular, weather and sea state conditions may prevent mooring and unloading for periods of up to a few days. Weather conditions and forecasts are closely monitored before the arrival of a vessel and during loading. In the event of deteriorating conditions or the approach of a cyclone, the facility will be closed down and the vessel released.

Except during the cyclone period, or during other isolated severe storms, seas are generally slight. Seas of 2m and less can be expected 95 per cent of the time. Larger seas are more prevalent during the winter, when swells as high as 4m can be generated during E gales.

Depths—Limitations.—Vessels up to 150,000 dwt can be accommodated. Berthing is done during daylight hours only; unberthing can be done at any time.

Vessels are moored bow to the stern of the FPSO facility. The FPSO with attached tanker can rotate a full 360 in response to current, wind, and wave conditions.

Regulations.—Vessels should contact the terminal on VHF channel 72 when 3 to 4 hours away from the terminal. Vessels should remain at least 5 miles off the terminal until instructions to proceed are received.

Pilotage.—Pilotage by the Facility Master is compulsory; the Facility Master board 3 miles from the FPSO. The pilot, berthing superintendents, and equipment will be transferred to the vessel by the facility workboat, weather permitting, or by helicopter.

Anchorage.—The Facility Master will advise the vessel about anchoring

4.38 Mary Anne Passage (21° 12'N., 115° 30'W.), at the NE end of the Inner Route, leads between Barrow Island Shoals and Ripple Shoals, on the NW, and the islets and dangers fronting the mainland from Fortescue Road and Coolgra Point, on the SE. Its narrowest part is 2.5 miles wide between Barrow Island Shoals and Flinders Shoal. The least depths on the track, as indicated on the chart, are to be found on Fairway Shoals, which has general depths of 5 to 10m. It is a convenient passage for vessels proceeding from E to Ashburton Road, for vessels with local knowledge, using care to avoid the dangers previously described.

Onslow (21° 38'S., 115° 06'E.) ([World Port Index No. 54580](#)) is a lighterage port, the limits of which are described as the coast between Coolgra Point and Entrance Point, 17 miles WSW; then N to Ashburton Islet; then E to Direction Islet; then SE to Coolgra Point. In 1990, the port of Onslow was extended to include the oil terminals of Saladin and Thevenard Island.

The town of Onslow is situated on Beadon Point.

Vessels bound for Onslow approach on the charted recommended track, passing S or SE of Thevenard Island, to a position 5 miles W of Direction Island, then alter course to bring Onslow range lights into line; a depth of 6.3m lies on the range line 7 miles NNW of Beadon Point. This course leads W of Gorgon Patch, with a depth of 2.2m, and Koolinda Patch, with a depth of 2.5m, and E of Hastings Shoal, with a depth of less than 2m, and Ward Reef, which dries 0.9m. Weeks Shoal, with a depth of 1.9m, lies outside the 10m curve, 2.25 miles WNW of Direction Island.

Vessels departing the Port of Onslow may, when about 5 miles W of Direction Islet, steer W with the light on Bessieres Island ahead and Direction Islet astern; then with Bessieres Island ahead about 3.25 miles, steer course 310°; then with Bessieres Island light S, 2.5 miles distant, steer course as desired, clear of dangers, for their destination.

Vessels in transit of the described route should have local knowledge. Dangers other than those described above may be seen on the charts.

Anchorage.—Anchorage for vessels working cargo can be taken about 0.5 mile N of the ruined jetty off Beadon Point, in a depth of 7m, gravel and mud.

4.39 The coast from Beadon Point to Tubridgi Point, 29 miles WSW, is low and generally backed by low sandhills, some of which are sparsely covered with vegetation; inland the country is low and flat, covered with grass and a few bushes, and is swampy in parts during the rainy season.

On this coast there are two conspicuous hills, one is 18m high, located on the SW extremity of a sand ridge, 3 miles SSW of Beadon Point. The other is Saddle Hill, 17m high and dark in color, which lies 8 miles SW of Beadon Point.

The coastal waters are encumbered by islands and reefs. There is a track through these waters for moderate draft vessels, but local knowledge is essential for safe passage.

Ashburton Road (21° 39'S., 115° 02'E.) is an open roadstead about 6 miles W of Beadon Point; it provides anchorage, in depths of 7 to 9m, sand and coral, but this anchorage is not recommended during the cyclone season, from December to April.

Caution.—Four lighted production platforms stand from about 2 miles E to 3 miles SW of Ashburton Island. Submerged oil and gas pipelines also lie in the road.

Roller Shoal (21° 39'S., 114° 56'E.), with a least depth of 1.5m, lies about 2.5 miles WNW of Entrance Point. This is the least depth in Ashburton Road.

The 10m curve lies about 6 miles offshore to a position N of Tortoise Islet; then the 10m curve lies up to 15 miles offshore to the mouth of Exmouth Gulf.

The islets and dangers along the Inner Route W of Onslow are described below.

Paroo Shoal (21° 34'S., 115° 00'E.), with a depth of 3.6m, is located on the S side of the Inner Route, about 7 miles NW of Beadon Point. Miles Shoal, with a depth of 3.3m, and Australind Shoal, with a depth of 3.4m, lie 2.3 and 4.5 miles W, respectively, of Paroo Shoal.

Tortoise Islet (21° 35'S., 114° 52'E.) is 10m high, sandy, and covered with bushes. Bowers Ledge, which dries 1.8m, lies close within the 10m curve, about 5 miles WNW of Tortoise Islet.

4.40 Bessieres Island (Anchor Islet) (21° 31'S., 114° 46'E.), 6 miles NW of Tortoise Islet, is 12m high, sandy, and covered with grass and a few bushes; it is surrounded by a reef which extends nearly 1 mile N and W from it. Bessieres Island Light is exhibited from a tower situated in the center of the islet.

Caution.—Unexploded ordnance lies in an area, with a radius of 0.5 mile, centered about 5 miles WNW of Bessieres Island, in a depth of about 60m.

A lighted Single Buoy Mooring (SBM), surrounded by a Cautionary Area with a radius of 5 miles, lies in position 21 13.4'S., 114 38.7'E., about 20 miles NNW of Bessieres Island. A gas pipeline extends SSE from the SBM to close E of Bessieres Island, and then continues almost due S to a point on the shore about 1 mile SW of Rocky Point (21 44'S., 114 51'E.).

Black Ledge (21° 34'S., 114° 42'E.) is awash at high water; it lies about 4 miles SW of Bessieres Island. Long Island, 12m high, formed by sandhills partly covered with vegetation, lies 6.5 miles SW of Bessieres Island; a submerged reef extends 1.25 miles N of the island.

Serrurier Island (Long Island) (21° 37'S., 114° 40'E.), 6.5 miles SW of Bessieres Island, is formed by sandhills partly covered with vegetation; its summit, 12m high, is located at its NW extremity. The greater part of the island is fringed by a submerged reef. Flat Islet, 8.5m high, lies 2.5 miles WSW of the N end of Serrurier Island. Peak Island, 10m high, lies 6.5 miles W of Flat Islet, and is surrounded by a coral reef.

The **Muiron Islands** (21° 40'S., 114° 20'E.), two in number, lie in a NE-SW direction, with the S extremity of the S island about 9 miles NW of North West Cape. The islands are encompassed by coral reefs; however, they are separated by a channel about 0.25 mile in width with depths of more than 7.3m. North Muiron Island, 19m high, is formed by irregular, sparsely vegetated, sandy ridges. There are some conspicuous reddish-colored limestone cliffs on the NW side. South Muiron Island, 18m high near the center, is formed by irregular sandy ridges, covered with coarse grass and small bushes.

Outtrim Patches, with depths of 6.4 and 8.7m, lie 2 miles E and ENE, respectively, of the N extremity of North Muiron Island.

There is an 8.2m patch 1.75 miles SE of the S extremity of South Muiron Island. A depth of 6.4m and a 10.1m shoal lie 1.25 and 3.75 miles E, respectively, of the S end of South Muiron Island.

4.41 Exmouth Gulf (22° 10'S., 114° 19'E.) is entered between Tubridgi Point and North West Cape, 27 miles W; it is bordered on the E and S by the mainland and on the W side by North West Cape Peninsula.

The gulf has an average width of 23 miles and recedes about 40 miles S. From a depth of 22m at its mouth, the gulf gradually shoals to mud flats at its head.

The E coast of Exmouth Gulf and off-lying waters for about 11 miles S of Tubridgi Point have not been surveyed, but the coast was seen to be low-lying and mangrove fringed. From this point to Giralia Bay, at the head of the bay, the coast is islands, sandbanks, and swamps, with the mainland 6 to 7 miles E. The charted shore is fronted with numerous shoals, islets, and reefs from the S extremity of South Muiron Island SSE for 15 miles to "Y" Islet, then SSW for 30 miles to the Sandalwood Peninsula at the head of Exmouth Gulf. A light is shown from the N shore of "Y" Islet.

The E side of the peninsula forming the W coast of Exmouth Gulf is formed of a ridge of sandhills, from 12 to 18m high, which extend along the coast SE from North West Cape to Point Murat.

Camp Hill (21° 48'S., 114° 10'E.), 19m high, is a sandhill 0.75 mile SSE of North West Cape. The coast from Point Murat to Heron Point, 27 miles S, is clear of mangroves and generally steeper than the rest of Exmouth Gulf.

From **Heron Point** (22° 16'S., 114° 08'E.) S to the head of Gales Bay, about 16 miles, the coast is low and backed by red sandhills.

Gales Bay (22° 25'S., 114° 11'E.) lies at the head of the gulf, on the W side of Sandalwood Peninsula; Giralia Bay lies on the E side of the peninsula. Centipede Mountains, 8 miles S of the N end of Sandalwood Peninsula, are a small, rocky, conspicuous range of hills which rise to a height of about 107m.

The coastal waters on the W coast of Exmouth Gulf are fronted by coral reefs up to 0.5 mile offshore, from North West Cape S to **Point Lefroy** (22° 18'S., 114° 11'E.), about 3.5 miles SE of Heron Point. The 11m curve lies about 1 to 1.5 miles offshore, with the exception of the S part, where the line lies up to 6 miles N of Point Lefroy.

Bay of Rest (22° 17'S., 114° 08'E.) is entered between Point Lefroy and Heron Point; there are depths of from 5.5 to 7.3m in the entrance, but the bay is shallow and consists for the most part of drying sands.

4.42 Point Murat (Port Exmouth) (21° 49'S., 114° 11'E.) (World Port Index No. 54575) lies on the W side of Exmouth Gulf; the port limits are defined by a line extending from the N extremity of North West Cape, E for 4.8 miles, then S for 27.8 miles and then 231° to Point Lefroy. Within the port limits, Point Murat is located about 2.25 miles SE of North West Cape. The small town of Exmouth is located 1 mile inland, about 8 miles SSW of Point Murat, but is not clearly visible from seaward.

A T-head jetty extends about 0.15 mile ESE from the coast close SW of Point Murat; the jetty head is 49m in length with depths of 12m alongside. Dolphins at both ends of the jetty extend the length to 320m. Light-hulled vessels are cautioned not to lie alongside overnight as sea conditions may deteriorate quickly without warning. It is recommended that vessels berth heading S, 2 to 3 hours after the start of the ebb, making use of the port anchor; the ebb current sets the vessel onto the jetty.

The jetty is located within a restricted area and prior permission is required before entering it.

Pilotage.—Pilots may be arranged through the Port Authority, Fremantle. The pilot embarks 1 mile NE of Point Murat Jetty. The ETA of a vessel should be signaled 24 hours in advance.

At **Learmonth** (22° 13'S., 114° 05'E.), 24 miles S of Point Murat, in the S part of the port area, there is a jetty, known as Wapet Jetty, which extends about 183m from the coast. A group of fuel tanks at the root of the jetty is prominent. A fish factory, about 0.8 mile NW of the jetty, and a solar observatory, about 0.5 mile SSE of the jetty, are conspicuous.

Bundegi Reef, with depths of less than 1.4m, lies 2 miles SSW of Point Murat; it is steep-to on its E side. Cooper Shoal, with a least depth of 2.7m, lies 14.5 miles S of Point Murat. Camplin Shoal, with a depth of 8.2m, lies 1.5 miles WSW of Cooper Shoal. Bennet Shoal, with a depth of 6.4m, and Stewart Shoal, with a depth of 4.3m, lie 4 and 8 miles SW, respectively, of Cooper Shoal. Wapet Shoal, with a least depth of 1.9m, lies 1.75 miles E of Wapet Jetty.

Anchorage.—In general, the holding ground in the anchorages of Exmouth Gulf is good, with fine brown sand having almost the consistency of mud.

4.43 North West Cape (21° 47'S., 114° 10'E.) is a low sandy point at the N extremity of the peninsula forming the W side of Exmouth Gulf. North West Reef, which dries 1.2m, lies 2 miles N of North West Cape. The seas generally break heavily on the reef and there are heavy tide rips between the reef and the cape; vessels should pass well outside the reef.

North West Cape Light is shown at an elevation of 137m from a radio tower, one of a group up to 392m high, standing 1.75 miles S of the cape. The radio towers are very conspicuous, visually and on radar, by day and night.