PUB. 172

SAILING DIRECTIONS (ENROUTE)

★

RED SEA AND THE PERSIAN GULF

★

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TWENTIETH EDITION

Preface

Pub. 172 Sailing Directions (Enroute) Red Sea and the Persian Gulf, Twentieth Edition, 2014, is issued for use in conjunction with Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean. Companion volumes are Pubs. 171, 173, 174, and 175.

Digital Nautical Chart 10 provides electronic chart coverage for the area covered by this publication.

This publication has been corrected to 26 July 2014, including Notice to Mariners No. 30 of 2014. Subsequent updates have corrected this publication to 12 November 2016, including Notice to Mariners No. 46 of 2016.

Explanatory Remarks

Sailing Directions are published by the National Geospatial-Intelligence Agency (NGA), under the authority of Department of Defense Directive 5105.40, dated 12 December 1988, and pursuant to the authority contained in U. S. Code Title 10, Sections 2791 and 2792 and Title 44, Section 1336. Sailing Directions, covering the harbors, coasts, and waters of the world, provide information that cannot be shown graphically on nautical charts and is not readily available elsewhere.

Sailing Directions (Enroute) include detailed coastal and port approach information which supplements the largest scale chart produced by the National Geospatial-Intelligence Agency. This publication is divided into geographic areas called "Sectors."

Bearings.—Bearings are true, and are expressed in degrees from 000° (north) to 360°, measured clockwise. General bearings are expressed by initial letters of points of the compass (e.g. N, NNE, NE, etc.). Adjective and adverb endings have been discarded. Wherever precise bearings are intended degrees are used.

Charts.—Reference to charts made throughout this publication refer to both the paper chart and the Digital Nautical Chart (DNC).

Coastal Features.—It is assumed that the majority of ships have radar. Available coastal descriptions and views, useful for radar and visual piloting are included in geographic sequence in each Sector.

Corrective Information.—Users should refer corrections, additions, and comments to NGA's Maritime Operations Desk, as follows:

1. Toll free: 1-800-362-6289
2. Commercial: 571-557-5455
3. DSN: 547-5455
4. DNC web site: http://msi.nga.mil/NGAPortal/DNC.portal
5. Maritime Domain web site: http://msi.nga.mil/NGAPortal/MSI.portal
6. E-mail: navsafety@nga.mil
7. Mailing address: Maritime Safety Office
   National Geospatial-Intelligence Agency
   Mail Stop N64-SFH
   7500 Geoint Drive
   Springfield VA 22150-7500

New editions of Sailing Directions are corrected through the date of the publication shown above. Important information to amend material in the publication is updated as needed and available as a downloadable corrected publication from the NGA Maritime Domain web site.

NGA Maritime Domain Website
http://msi.nga.mil/NGAPortal/MSI.portal

Courses.—Courses are true, and are expressed in the same manner as bearings. The directives "steer" and "make good" a course mean, without exception, to proceed from a point of origin along a track having the identical meridianal angle as the designated course. Vessels following the directives must allow for every influence tending to cause deviation from such track, and navigate so that the designated course is continuously being made good.

Currents.—Current directions are the true directions toward which currents set.

Dangers.—As a rule outer dangers are fully described, but inner dangers which are well-charted are, for the most part, omitted. Numerous offshore dangers, grouped together, are mentioned only in general terms. Dangers adjacent to a coastal passage or fairway are described.

Distances.—Distances are expressed in nautical miles of 1 minute of latitude. Distances of less than 1 mile are expressed in meters, or tenths of miles.

Geographic Names.—Geographic names are generally those used by the nation having sovereignty. Names in parentheses following another name are alternate names that may appear on some charts. In general, alternate names are quoted only in the principal description of the place. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity. Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.

Heights.—Heights are referred to the plane of reference used for that purpose on the charts and are expressed in meters.

Index-Gazetteer.—Navigational features and place names are listed alphabetically in the back of the book. The approximate position, along with the Sector and paragraph numbers (e.g. **1.1**), facilitate location in the text.

Internet Links.—This publication provides internet links to web sites concerned with maritime navigational safety, including but not limited to, Federal government sites, foreign Hydrographic Offices, and foreign public/private port facilities. NGA makes no claims, promises, or guarantees concerning the accuracy, completeness, or adequacy of the contents of the web sites and expressly disclaims any liability for errors and omissions of these web sites.

International Ship and Port Facility Security (ISPS) Code.—The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States. Information

on the ISPS Code can be found at the International Maritime Organization web site:

International Maritime Organization Home Page
http://www.imo.org

Light and Fog Signals.—Lights and fog signals are not described, and light sectors are not usually defined. The Light Lists should be consulted for complete information.

Maritime Administration (MARAD) Advisories.—MARAD Advisories rapidly disseminate information on maritime dangers, safety, government policy, and other time-sensitive matters pertaining to U.S.-flag vessel operations. MARAD Advisories are issued by the Office of Security to vessel masters, ship operators, and other U.S. Maritime interests. Advisories are communicated via telex or other message formats and are published on the MARAD web site and in the National Geospatial-Intelligence Agency's Weekly Notice to Mariners.

Maritime Administration (MARAD) Home Page
http://www.marad.dot.gov/newsroom

Ports.—Directions for entering ports are depicted where appropriate by means of chartlets, sketches, and photos, which facilitate positive identification of landmarks and navigational aids. These chartlets and sketches are not always to scale, however, and should be used only as a general informational guide in conjunction with the best scale chart. Specific port facilities are omitted from the standard format. They are tabulated in Pub. 150, World Port Index.

Radio Navigational Aids.—Radio navigational aids are not described in detail. Publication No. 117 Radio Navigational Aids and NOAA Publication, Selected Worldwide Marine Broadcasts, should be consulted.

Soundings.—Soundings are referred to the datum of the charts and are expressed in meters.

Special Warnings.—A Special Warning may be in force for the geographic area covered by this publication. Special Warnings are printed in the weekly Notice to Mariners upon promulgation and are reprinted annually in Notice to Mariners No. 1. A listing of Special Warnings currently in force is printed in each weekly Notice to Mariners, Section III, Broadcast Warnings, along with the notice number of promulgation. Special Warnings are also available on the Maritime Division web site.

Time.—Time is normally expressed as local time unless specifically designated as Universal Coordinated Time (UTC).

Wind Directions.—Wind directions are the true directions from which winds blow.

Reference List

The principal sources examined in the preparation of this publication were:

British Hydrographic Department Sailing Directions.

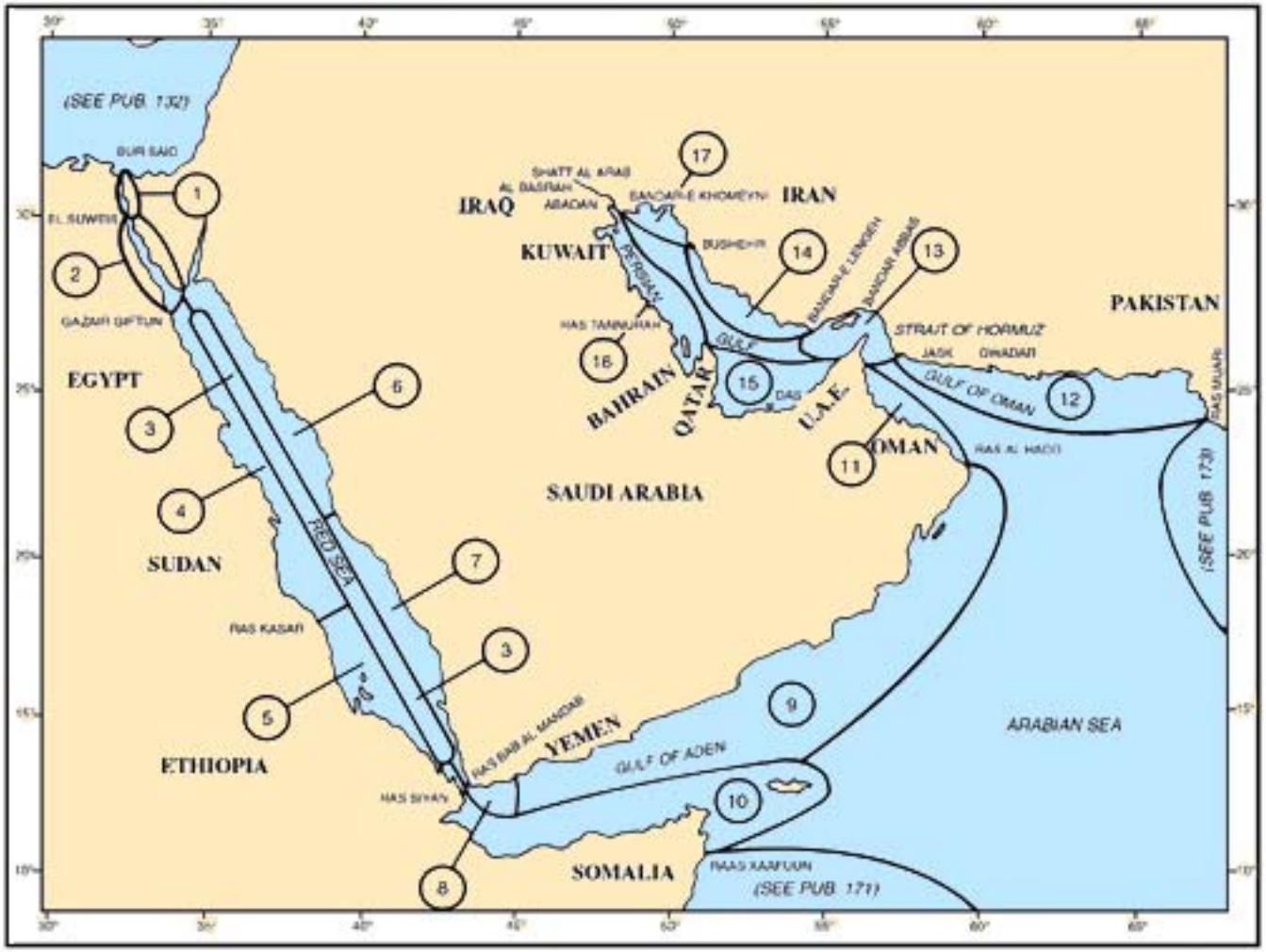
Various port handbooks.

Reports from United States Naval and merchant vessels and various shipping companies.

Other U.S. Government publications, reports, and documents.

Charts, light lists, tide and current tables, and other documents in possession of the Agency.

Date of Change: 12 November 2016	
Notice to Mariners: 46/2016	
Sector	**Paragraphs**
Sector 2	Paragraphs 2.4, 2.5, 2.12, and 2.25
Sector 6	Paragraph 6.35
Sector 7	Paragraphs 7.38, 7.56, 7.60, and 7.64
Sector 9	Paragraphs 9.25 and 9.38
Sector 11	Paragraphs 11.12, 11.21, 11.23, and 11.24
Sector 13	Paragraphs 13.12 and 13.22
Sector 14	Paragraph 14.12
Sector 15	Paragraphs 15.3, 15.5, 15.6, 15.11, 15.12, 15.14, 15.15, 15.19, 15.20, 15.24, 15.34, and 15.39
Sector 16	Paragraphs 16.6, 16.12, 16.14, 16.38, 16.43, 16.44, and 16.47



SECTOR LIMITS — PUB. **172**

Feet to Meters

Feet	0	1	2	3	4	5	6	7	8	9
0	0.00	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74
10	3.05	3.35	3.66	3.96	4.27	4.57	4.88	5.18	5.49	5.79
20	6.10	6.40	6.71	7.01	7.32	7.62	7.92	8.23	8.53	8.84
30	9.14	9.45	9.75	10.06	10.36	10.67	10.97	11.28	11.58	11.89
40	12.19	12.50	12.80	13.11	13.41	13.72	14.02	14.33	14.63	14.93
50	15.24	15.54	15.85	16.15	16.46	16.76	17.07	17.37	17.68	17.98
60	18.29	18.59	18.90	19.20	19.51	19.81	20.12	20.42	20.73	21.03
70	21.34	21.64	21.95	22.25	22.55	22.86	23.16	23.47	23.77	24.08
80	24.38	24.69	24.99	25.30	25.60	25.91	26.21	26.52	26.82	27.13
90	27.43	27.74	28.04	28.35	28.65	28.96	29.26	29.57	29.87	30.17

Fathoms to Meters

Fathoms	0	1	2	3	4	5	6	7	8	9
0	0.00	1.83	3.66	5.49	7.32	9.14	10.97	12.80	14.63	16.46
10	18.29	20.12	21.95	23.77	25.60	27.43	29.26	31.09	32.92	34.75
20	36.58	38.40	40.23	42.06	43.89	45.72	47.55	49.38	51.21	53.03
30	54.86	56.69	58.52	60.35	62.18	64.01	65.84	67.67	69.49	71.32
40	73.15	74.98	76.81	78.64	80.47	82.30	84.12	85.95	87.78	89.61
50	91.44	93.27	95.10	96.93	98.75	100.58	102.41	104.24	106.07	107.90
60	109.73	111.56	113.39	115.21	117.04	118.87	120.70	122.53	124.36	126.19
70	128.02	129.85	131.67	133.50	135.33	137.16	138.99	140.82	142.65	144.47
80	146.30	148.13	149.96	151.79	153.62	155.45	157.28	159.11	160.93	162.76
90	164.59	166.42	168.25	170.08	171.91	173.74	175.56	177.39	179.22	181.05

Meters to Feet

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	3.28	6.56	9.84	13.12	16.40	19.68	22.97	26.25	29.53
10	32.81	36.09	39.37	42.65	45.93	49.21	52.49	55.77	59.06	62.34
20	65.62	68.90	72.18	75.46	78.74	82.02	85.30	88.58	91.86	95.14
30	98.42	101.71	104.99	108.27	111.55	114.83	118.11	121.39	124.67	127.95
40	131.23	134.51	137.80	141.08	144.36	147.64	150.92	154.20	157.48	160.76
50	164.04	167.32	170.60	173.88	177.16	180.45	183.73	187.01	190.29	193.57
60	196.85	200.13	203.41	206.69	209.97	213.25	216.54	219.82	223.10	226.38
70	229.66	232.94	236.22	239.50	242.78	246.06	249.34	252.62	255.90	259.19
80	262.47	265.75	269.03	272.31	275.59	278.87	282.15	285.43	288.71	291.99
90	295.28	298.56	301.84	305.12	308.40	311.68	314.96	318.24	321.52	324.80

Meters to Fathoms

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	0.55	1.09	1.64	2.19	2.73	3.28	3.83	4.37	4.92
10	5.47	6.01	6.56	7.11	7.66	8.20	8.75	9.30	9.84	10.39
20	10.94	11.48	12.03	12.58	13.12	13.67	14.22	14.76	15.31	15.86
30	16.40	16.95	17.50	18.04	18.59	19.14	19.68	20.23	20.78	21.33
40	21.87	22.42	22.97	23.51	24.06	24.61	25.15	25.70	26.25	26.79
50	27.34	27.89	28.43	28.98	29.53	30.07	30.62	31.17	31.71	32.26
60	32.81	33.36	33.90	34.45	35.00	35.54	36.09	36.64	37.18	37.73
70	38.28	38.82	39.37	39.92	40.46	41.01	41.56	42.10	42.65	43.20
80	43.74	44.29	44.84	45.38	45.93	46.48	47.03	47.57	48.12	48.67
90	49.21	49.76	50.31	50.85	51.40	51.95	52.49	53.04	53.59	54.13

Abbreviations

The following abbreviations may be used in the text:

Units

°C	degree(s) Centigrade	km	kilometer(s)
cm	centimeter(s)	m	meter(s)
cu.m.	cubic meter(s)	mb	millibars
dwt	deadweight tons	MHz	megahertz
FEU	forty-foot equivalent units	mm	millimeter(s)
gt	gross tons	nrt	net registered tons
kHz	kilohertz	TEU	twenty-foot equivalent units

Directions

N	north	S	south
NNE	northnortheast	SSW	southsouthwest
NE	northeast	SW	southwest
ENE	eastnortheast	WSW	westsouthwest
E	east	W	west
ESE	eastsoutheast	WNW	westnorthwest
SE	southeast	NW	northwest
SSE	southsoutheast	NNW	northnorthwest

Vessel types

LASH	Lighter Aboard Ship	Ro-ro	Roll-on Roll-off
LNG	Liquified Natural Gas	ULCC	Ultra Large Crude Carrier
LPG	Liquified Petroleum Gas	VLCC	Very Large Crude Carrier
OBO	Ore/Bulk/Oil	VLOC	Very Large Ore Carrier
Lo-lo	Lift-on Lift-off	FSO	Floating Storage and Offloading
NGL	Natural Gas Liquids	FSU	Floating Storage Unit
FSRU	Floating Storage and Regasification Unit	FPSO	Floating Production Storage and Offloading

Time

ETA	estimated time of arrival	GMT	Greenwich Mean Time
ETD	estimated time of departure	UTC	Coordinated Universal Time

Water level

MSL	mean sea level	LWS	low water springs
HW	high water	MHWN	mean high water neaps
LW	low water	MHWS	mean high water springs
MHW	mean high water	MLWN	mean low water neaps
MLW	mean low water	MLWS	mean low water springs
HWN	high water neaps	TFW	Tropical Fresh Water
HWS	high water springs	HAT	highest astronomical tide
LWN	low water neaps	LAT	lowest astronomical tide

Communications

D/F	direction finder	MF	medium frequency
R/T	radiotelephone	HF	high frequency
GMDSS	Global Maritime Distress and Safety System	VHF	very high frequency
LF	low frequency	UHF	ultra high frequency

Navigation

LANBY	Large Automatic Navigation Buoy	SBM	Single Buoy Mooring
NAVSAT	Navigation Satellite	SPM	Single Point Mooring
ODAS	Ocean Data Acquisition System	TSS	Traffic Separation Scheme
CBM	Conventional Buoy Mooring System	VTC	Vessel Traffic Center
MBM	Multi-Buoy Mooring System	VTS	Vessel Traffic Service
CALM	Catenary Anchor Leg Mooring		

The following abbreviations may be used in the text:

Miscellaneous

AIS	Automatic Identification System	MMSI	Maritime Mobile Service Identity Code
COLREGS	Collision Regulations	No./Nos.	Number/Numbers
IALA	International Association of Lighthouse Authorities	PA	Position approximate
		PD	Position doubtful
IHO	International Hydrographic Organization	Pub.	Publication
IMO	International Maritime Organization	SOLAS	International Convention for Safety of Life at Sea
IMDG	Intermational Maritime Dangerous Goods Code		
LOA	length overall	St./Ste.	Saint/Sainte
UKC	Under keel clearance	ISPS	International Ship and Port facility Security
ITC	International Convention on the Tonnage Measurement of Ships (1969)	ECDIS	Electronic Chart Display and Information System

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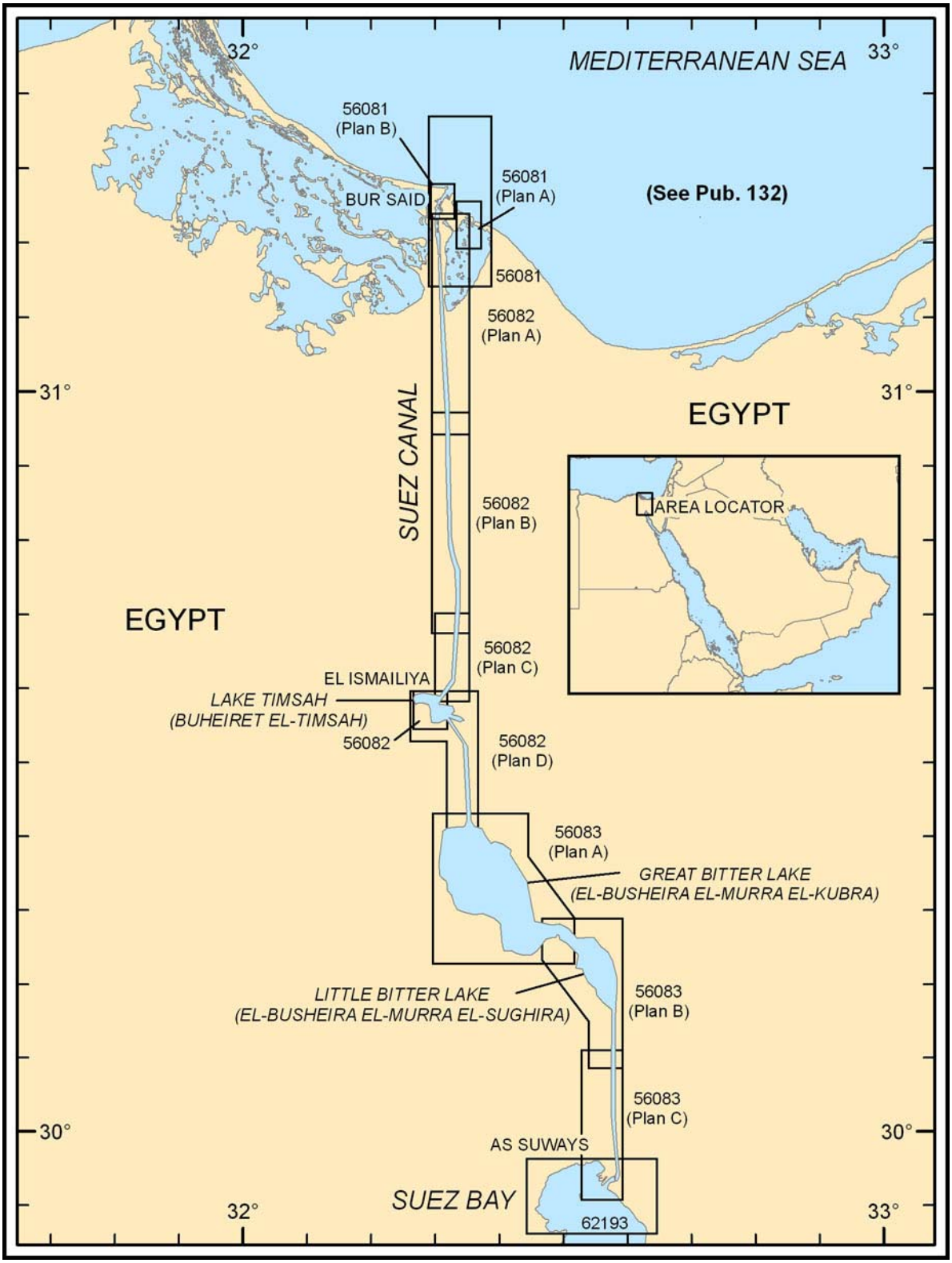
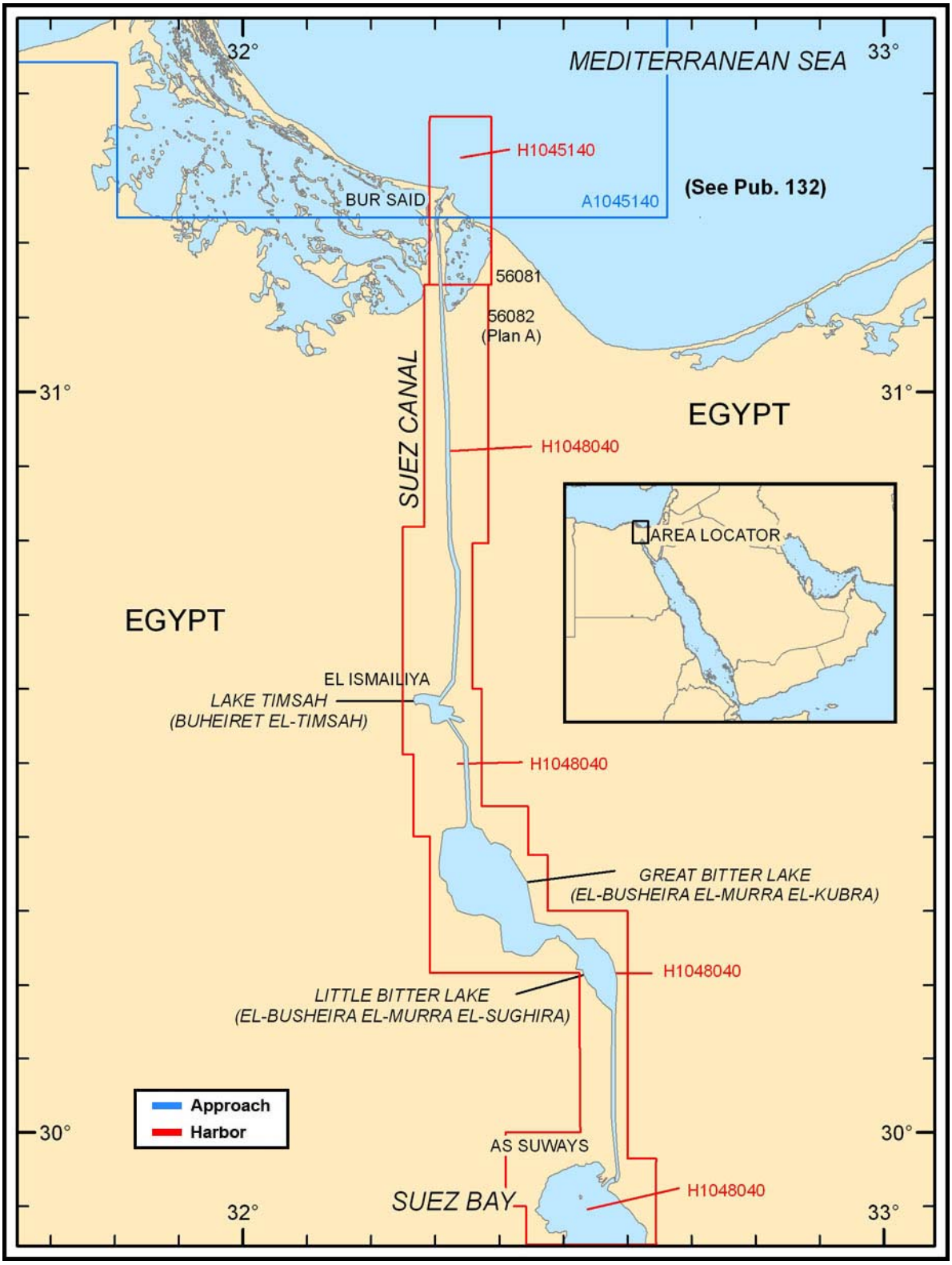


Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR 1 — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 1

EGYPT—THE SUEZ CANAL AND SUEZ BAY

Plan.—This sector describes the Suez Canal and Suez Bay, and is divided into nine parts. Parts A through G contain information for transiting the canal. Part H describes the anchorage areas available to vessels transiting the canal and associated areas. Part I contains a general description of the Suez Canal, its ports, and Suez Bay.

Part A.
General Remarks

Part B.
Suez Canal Vessel Traffic Management System

Part C.
Suez Canal Signals

Part D.
Suez Canal Navigation Regulations

Part E.
Suez Canal Transit Requirements

Part F.
Suez Canal Convoy System

Part G.
Suez Canal Pilotage

Part H.
Anchorage Areas

Part I.
General Description

Part A. General Remarks

1.1 The Suez Canal connects the Mediterranean Sea with the Gulf of Suez, and thence with the Red Sea. The canal is 105 miles long. Proceeding S from Port Said, it runs in an almost undeviating straight line to Lake Timsah. It then cuts to El-Buheira El-Murra El-Kubra (Great Bitter Lake) and El-Murra El-Sughra (Little Bitter Lake), which is now a single body of water, and then S again past Port Suez to reach the Gulf of Suez at Port Taufiq. The canal has no locks and can accommodate very large vessels. Widened and deepened over the years, it now is capable of accommodating ships with a maximum draft of 20.12m. The transit times range from 12 to 16 hours, with an average time of 14 hours, although it is expected the recent (2015) opening of a parallel section of canal between Km 50.0 and Km 122.0 will reduce transit time to 11 hours.

Depths in the Suez Canal are maintained to a centerline depth of 24.0m, except in following areas:

1. Port Said Approach Channel (Lighted Buoys Hm 92 to Km 00)—16.5m.
2. Port Said Main Channel (Km 00 to Km 16.4)—15.5m.
3. Newport Rock Channel (Lighted Buoy Hm 00.0 to Lighted Buoys Hm 80.5)—23.5m.

Caution.—Areas outside the channel limits in the canal have not been surveyed. Little is known about the depth of water and the slope of the canal prism between the dredged channel limits and the shore. Vessels should use caution when navigating along the outer limits of the dredged channel. The Suez Canal Authority should be consulted for the latest information.

Suez Canal Authority Home Page
http://www.suezcanal.gov.eg

The canal is open to vessels of all nations that comply with the conditions stated in the present rules of navigation. All references and circulars, which constitute an integral part of the rules, are issued by the Suez Canal Authority (SCA). Vessels must comply with the provisions of the International Regulations for International Convention for the Safety of Life at Sea and its amendments, the International Convention for Prevention of Pollution from ships, as well as the provisions of the International Regulations for Preventing Collisions at Sea, and all laws, orders, and regulations issued by the Egyptian Government.

The SCA reserves the right to refuse access to the canal waters, or order the towage or convoy of vessels considered dangerous or troublesome to navigation in the canal.

By the sole fact of using the canal waters, masters and owners of vessels bind themselves to accept all the conditions of the present rules of navigation, with which they acknowledge being acquainted with, to conform with these conditions in every respect, to comply with any requisition made with a view to their being duly carried out, and to adhere to the SCA private Code of Signals.

Up-to-date information is available from the SCA or an approved agent.

Every vessel, other than a warship, intending to transit the canal, or staying at Port Said (Bur Said) or Port Suez, or within the limits of the Suez Canal basins or dock, must be represented by an agent and must be approved by the SCA.

Warships intending to transit the canal should pass their request for booking via diplomatic channels, through the Ministry of Foreign Affairs, the Ministry of Defense, and/or the Ports and Lights Administration.

Canal Waters mean the canal proper and the access channels there to, the waters within the SCA concession adjacent to the canal proper, Port Said Harbor, and Port Suez.

The length of the canal proper runs from Km 3.710, West Branch, for vessels entering from Port Said Harbor, and from Km 1.333, East Branch, for vessels entering through the East Approach Channel to Hm 3 at Suez. Included are the two channels of El-Buheira El-Murra El-Kubra (Great Bitter Lake) and

The International Peace Bridge (Al Qantarah Bridge) from N

all canal by-passes.

The width of the canal is bounded by two banks when they are immerged; if the banks are submerged, the width of the canal is limited to the perpendiculars at the point of intersection of the submarine bank with the horizontal plane corresponding to the maximum draft authorized, including squat.

The maximum permitted beam is usually 77.49m. Vessels in ballast, with a beam of between 64.00m and 77.49m and a draft of 12.19m or less (or the vessel's recommended ballast draft), will be permitted to transit in favorable weather conditions and with wind speeds of not more than 10 knots. Ballasted vessels with a beam exceeding 77.49m must have prior approval of the Suez Canal Authority to transit the canal.

The actual draft a vessel may possess while in the canal is dependent upon the convoy the vessel is a member of, the vessel's beam, and the intended speed of transit.

Vessels permitted by the Suez Canal Beam and Draft Tables to transit the Suez Canal at a draft of greater than 15.24m must carry out a satisfactory sea trial at Bur Said Roads or at Port Suez before making their first passage at that draft.

A typical cross-section of the canal shows a channel width of 119m between about the 20m curves. However, areas with a width of l04m are listed in the *Suez Canal Authority Rules of Navigation*.

The International Peace Bridge (Al Qantarah Bridge), a road bridge with a vertical clearance of 68m, crosses the canal between Km 48.0 and Km 49.0.

The maximum draft for loaded vessels transiting N or S is dependent on the vessel's beam, as given in the Suez Canal Beam and Draft Table No. 4, from which the following values have been extracted:

Beam (up to)	Draft
50.00m	20.12m
50.76m	19.81m
51.55m	19.51m
52.37m	19.20m
53.21m	18.90m
54.08m	18.59m
54.99m	18.29m
55.92m	17.98m
56.88m	17.68m
57.88m	17.37m
58.91m	17.07m
59.98m	16.76m
61.10m	16.49m
61.85m	16.15m
62.59m	15.85m
63.32m	15.54m
64.03m	15.24m

At times vessels may be instructed to tie up to mooring bollards located on both banks of the canal.

Aids to navigation.—Additionally, in the vicinity of the 8.5m curve, the canal is marked at various intervals by lighted beacons with the following characteristics:

1. East side of channel—white oval topmark with green border, exhibiting a green fixed light.
2. West side of channel—white oval topmark with red border, exhibiting a red fixed light.
3. Junctions—cardinal topmark over an oval topmark with yellow and black horizontal bands, exhibiting a light with characteristics in accordance with cardinal markings

Suez Canal—Typical E side channel marker

Suez Canal—Typical W side channel marker

4. Boundary between East Branch Channel and West Branch Channel in El-Buheira El-Murra El-Kubra (Great Bitter Lake)—yellow X-shaped topmark, exhibiting a white isophase light.

Tidal buoys, which show the direction of flow of the water, are painted, as follows:

1. Downstream side—red and white bands, with one reflector.
2. Upstream side—black and white stripes, with two reflectors

Therefore, a vessel heading against the flow of water will see a buoy with red and white bands and one reflector. It has been reported that the tidal buoys are no longer present in the canal.

To conform to international convention, the Local Direction of Buoyage is the direction taken by the mariner when approaching the canal from seaward.

In view of the double-ended nature of the canal, there is a point at which the buoyage direction has been reported to be reversed. This is at Km 4.0 in Port Said Harbor and Km 2.8E in Port Said By-pass in approximate latitude 31°13.5'N. To the N of these positions the port hand buoys are on the E side of the channel and starboard to the W. To the S of these positions, the buoyage is reversed.

The canal's banks are marked by kilometer posts numbered from Port Said High Light S. The canal's kilometer posts on the E bank are marked in English numerals; the kilometer posts on the W bank are marked in Arabic numerals.

Where there are two channels, the suffix "E" is used to denote that the position referred to is in the Eastern Channel, e.g. Km 5.6E.

Suez Canal—Typical kilometer post (Arabic)

Positions along the approach channels may also be described by their distance along the channel in Hectometers (Hm) from

the origin of the Sea Channel. At Port Said, Hm 0.0 is Km 0.0. At Bur el Suweis, Hm 0.0 is Km 162.25.

Shiphandling in the canal.—In the pilotage of a vessel in Suez Canal, the main point requiring attention is the speed, which by Suez Canal Authority regulation is normally 7.5 knots. Each vessel has a speed suitable to its size at which it steers best. If a vessel that normally handles well steers badly in the canal, it is probable that its speed is wrong, which should be adjusted accordingly.

In passing from a wide into a narrower portion of the canal, it will be necessary to reduce speed in order to maintain good steering.

It should also be noted that there is a certain speed attainable by each vessel in the canal which will not be exceeded no matter how much the speed of the engines is increased. This is owing to the large displacement of water as compared with the width and depth of the canal and, of course, does not affect a vessel so much in the lakes.

When passing through a curve in the canal, the greatest caution is necessary in very long vessels; there should be a tug towing ahead and the engines should be stopped or going as slowly as possible. Particular attention is required, especially in a vessel with twin screws, to the proximity of the propeller to the banks.

In passing a canal dredge hauled to the bank or a vessel moored to a gare (places where the canal was widened to enable a vessel to secure to the bank so that another might pass) or in a bypass, great caution is required. The speed should be very slow, for at even a moderate speed the reaction of the waves caused by the passing vessel is liable to carry away the hawsers of the stationary vessel, which might then foul the passing vessel.

Close attention is required to the steering so that only a small amount of helm is used. Hand steering only is to be used while in the canal. Use of the vessel's gyro pilot is prohibited.

The canal banks are not always symmetrical to the center of the dredged channel marked by buoys; unevenness in the banks may also affect the vessel's steering. The pilot's advice is essential to keep the vessel in the center of the channel.

When the wind blows across the canal, care must be taken to prevent the vessel drifting to leeward. It is better to stop and secure to the bollards than to risk damaging the propeller by using it near the lee bank, this being the only serious damage vessels are liable to sustain in transiting the canal.

Similarly, with a wind abeam, care is required in getting underway after mooring to the bank.

Tides—Currents.—A strong E set, at a rate of as much as 3 knots, and a weaker W set, at a rate of 1.5 knots, have been reported (2012) in the Port Said approach to the canal. A NW current, with a rate of up to 2 knots, has been reported (2014) in the approaches to Port Said.

Rates of up to 4 knots have been reported in El-Buheira El-Murra El-Sughra (Little Bitter Lake).

Between Port Said and El-Buheira El-Murra El-Kubra (Great Bitter Lake), tidal currents may reach 1 knot; however, it can reach 2 knots with strong prevailing winds. A strong N current in El-Buheira El-Murra El-Kubra was reported (2010) to reach a velocity of 3 knots. It has also been reported (2012) that a vessel experienced a S current, with a rate in excess of 3 knots, between El-Buheira El-Murra El-Kubra and the N entrance of the canal during a northbound transit of the canal.

North to NW currents, at rates of up to 2 knots, have been reported (2014) in the canal between Port Suez and the Bitter Lakes. A 3-knot current, direction unknown, has also been reported along this stretch of the canal.

Peak currents between Port Said and the Bitter Lakes occur about 50 minutes after predicted HW and LW at Port Said.

The duration and velocity of currents in the part of the canal are greatly affected by the relative mean sea levels between the Mediterranean Sea, the Bitter Lakes, and the Red Sea and the meteorological conditions of the region.

An ebb current, at a rate of up to 2 knots, has been reported (2014) in the S approach to Port Suez.

In summer, between July and October, the mean sea level at Port Said and Port Suez is slightly higher than that of the Bitter Lakes. This difference, coupled with evaporation in the Bitter Lakes, causes the predominance of a S current from Port Said to the lakes and a N current from Port Suez to the lakes.

In winter, between December and April, the mean sea level at the Bitter Lakes is slightly higher than that of Port Said and Port Suez. This difference causes the predominance of a N current from the lakes to Port Said and a S current from the lakes to Port Suez.

The lakes along the canal have an important role in dampening the effects of sudden meteorological changes.

Between Port Suez and the Bitter Lakes, the N current is called the flood; the S current is called the ebb. Peak currents occur about 50 minutes after HW and LW at Port Tewfik.

At the entrance to the canal, at Km 159.0, the flood starts at an average of 3 hours after LW at Suez; the ebb starts 3 hours after HW at Suez. Usually in summer, the duration of the ebb exceeds 6 hours. In winter, the flood dominates. The ebb is prolonged by strong NW winds; the flood by strong S winds.

In the S part of the canal, the current averages 1.5 knots and 2.5 knots at springs and are rather strong and uniform.

Six meteorological stations span the canal and information concerning local weather will be passed to vessels from the pilots.

Vessel Traffic Service.—A Vessel Traffic Information Management System (VTIMS) operates in the Red Sea and the Gulf of Suez to provide navigation assistance and advice to shipping. Information on the VTIMS is given in paragraph 2.1.

Caution.—It has been reported that fog, sometimes limiting visibility to less than 100m, may be encountered transiting the canal.

It has been reported (2010) that visual aids to navigation may be difficult to discern in more developed areas of the canal.

It has been reported (2010) that the signal stations in the canal, although charted as being lighted, do not show any lights at night.

It has been reported (2015) barges located on either side of the new northbound channel of the canal may extend into the main channel.

Part B. Suez Canal Vessel Traffic Management System

1.2 The Suez Canal Vessel Traffic Management System (SCVTMS) is a system for ensuring safety of transit in the canal as well as increasing the numerical capacity. The system

offers the following services, which includes continuous monitoring of a vessel's position, speed, off-track, and space between vessels, by means of computerized tracking radars at Port Said, Port Tewfik, and El-Buheira El-Murra El-Kubra (Great Bitter Lake).

1. A Loran-C network covering the canal and its approaches.
2. A voice communication network that enables direct communication between pilots and movement centers.
3. A computerized data base containing vessels particulars and transit requirements.

At Port Tewfik or Port Said, the radar coverage extends about 19 miles offshore.

Vessels approaching the canal, from either end, should call the respective harbor office on the frequencies listed in Part C—Suez Canal Signals.

Vessels calling the harbor office for the first time should give the international call sign and Suez Canal file number. The file number will enable the SCA to retrieve information on the vessel from the data base.

Approaching the roads, vessels are requested to call the harbor office declaring their international call sign.

The harbor office tracks the vessel as long as the pilot is aboard. Vessels will be tracked both by radar and Loran-C in the Great Bitter Lake area and by television, which covers the canal and is controlled from Ismailia.

On approaching either end of the canal, the respective harbor office will be handed the responsibility of follow-up as the vessel proceeds to sea.

Vessels should observe the radio reporting points listed under the "Information to be passed to the SCA on arrival" topic in **Part E—Suez Canal Transit Requirements**.

Part C. Suez Canal Signals

1.3 The Suez Canal Authority (SCA) prescribes the signals, both visual and sound, for use at Port Said and in the Suez Canal.

The manual that contains these signals, *Rules of Navigation, Part III, Communications—Signals*, is held by the pilot for use by the master of the vessel.

Night signal lights shall be hoisted at the foremast head or where best seen by other vessels. Excerpts from the SCA manual (*Rules of Navigation—Part III, Communications—Signals*) are given below.

All flags and pendants referred to, and many of the signals referenced, are those used in the Pub. 102, International Code of Signals.

Suez Canal—Signals

Signal Type	Day	Night	Meaning
Pilot signal	Flag G under a black ball	Three white lights in a vertical line	I require a pilot. See Note.
Aground signals	Black ball above Pennant No. 2 at masthead	Red light at masthead	Vessel aground. Passage clear for tugs.
	Black ball above Pennant No. 2 above Flag N	Two red lights vertically disposed	Vessel aground. Passage not clear for tugs.
Convoy signal	Flag Z	Green light over white light	Last vessel in convoy.
Quarantine signals	Flag Z over Flag S	Red light over white light	I require free pratique.
	Yellow square flag	Red light over green light	Vessel under quarantine during transit.
Special signals used by vessels carrying certain hazardous cargo	Flag B over one black ball	Two red lights over one white light vertically disposed	Tanker carrying bulk petroleum (flash point between 23°C and 49°C).
	One black ball over Flag B	One white light over two red lights vertically disposed	Vessels carrying explosives or other dangerous cargo, including non-gas-free tankers, LPG and LNG vessels, and LNG vessels carrying dangerous cargo in bulk.
	Flag B between two black balls	Three red lights vertically disposed	Vessels carrying bulk petroleum (flash point below 23°C).
	Flag F between two black balls	Four red lights vertically disposed	Vessels carrying radioactive substances.

Suez Canal—Signals			
Signal Type	**Day**	**Night**	**Meaning**
Maneuvering signals	Pennant No. 2	Two white lights vertically disposed	The vessel is making fast. It is to be noted that when the vessel is made fast in the canal the white lights are to be replaced by a red stern light.
	Pennant No. 2 above answering pendant	Red light between two white lights, vertically disposed	Vessel is not ready and will not maintain its place in the convoy. If hoisted by a vessel in the canal, it means "I am securely made fast and can be crossed or doubled by other vessels."
	Pennant No. 1	White light above red light	Vessel is maneuvering to get underway in the canal.
Note.—If proceeding from port to sea, or for changing berths, this signal is to be raised 30 minutes before departure from the dock. If transiting the canal, the signal should be hoisted about 2 hours before the first vessel enters the canal.			

Suez Canal—Typical Signal Station

The only sound signals allowed in the Suez Canal and at Port Said are, as follows:

1. The sound signals laid down in the International Regulations for Preventing Collisions at Sea.
2. Five or six short blasts repeated at short intervals—I am reducing speed and may have to stop or make fast.
3. One prolonged blast—to attract attention.
4. Other sound signals as laid down in the SCA manual.

Vessels approaching the canal are required to observe radio reporting points and pass certain information to the appropriate harbor office when approaching the canal. See paragraph 1.5 (Part E. Suez Canal Transit Requirements) for details.

Vessels approaching the roads should also contact the appropriate harbor office. Vessels intending to maneuver within the canal or its approaches without a pilot aboard should contact Ismailia Coast Radio Station (SUQ) and request permission to do so.

Vessels must have their radio gear in good working order prior to transiting the canal. They must also be fitted with a VHF set capable of being operated from the bridge with a frequency range of 156 to 174 MHz (VHF channels 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 71, 73, and 74). If not fitted with a VHF set, vessels may rent a VHF set from the SCA. Vessel to tug communications are usually on UHF.

The Suez Canal Authority Ismailia may be contacted directly through Ismailia Coast Radio Station (SUQ). The Suez Canal Authority Ismailia can also be contacted by e-mail, as follows:

ismradio@hotmail.com

Masters shall place their communications equipment at the disposal of the SCA during transit of the canal.

Pilots shall be allowed to receive and send all service messages which may be deemed necessary, free of charge, to the SCA.

Radio watches will be kept as directed by the pilot; it may even be required that a continual watch be kept during transit of the canal.

If the UHF or VHF equipment is not operational, the pilot will request contact be established with Ismailia Coast Radio Station (SUQ), as follows:

1. Southbound Convoy:
   a. From the time of first contact until passing Km 6.
   b. From El Firdan (Km 64) to Ismailia (change of pilot).
   c. From Deversoir (Km 97) until anchoring in El-Buheira El-Murra El-Kubra (Great Bitter Lake).
   d. From the time prescribed by the pilot in El-Buheira El-Murra El-Kubra (Great Bitter Lake) until passing Al-Kibrit (Km 121).
2. Northbound convoy:
   a. From the time of first contact until passing the SCA offices at Port Tewfik.
   b. Laden tankers and third generation container ships from 0800 (or, if sooner, from passing Geneffe) until passing the last vessel from the N in the Al Ballah loop.
   c. Other vessels from 1100 (or, if sooner, from passing Geneffe) until passing the last vessel from the N in the Al Ballah loop.

Vessels approaching from seaward make contact, as follows:

Contact	Call sign	VHF channel
Port Said		
Port Management	Port Said 16 *	16
Pilot Vessel and Radar Guidance:		
Outside harbor	Port Said 12	12
Inside harbor	Port Said 13	13
Port Suez		
Port Management	Suez 16	14 and 16
Pilot Vessel and Radar Guidance:		
Outside harbor	Suez 11	11
Inside harbor	Suez 14	14

* It has been reported (2011) that the call sign used is Port Said Control.

Part D. Suez Canal Navigation Regulations

1.4 Suez Canal Navigation Regulations will be found in the manual *Suez Canal Authority Rules of Navigation*, published by the SCA. A copy of these rules is held by the pilot for the masters use. It has been reported (1998) that vessels must request the pilot bring a copy of the *Suez Canal Authority Rules of Navigation* in their Advance Notification of Transit message.

Masters are bound to make themselves well-acquainted with these regulations as a condition of passage through the canal; the excerpts which follow may be of use to vessels approaching the canal.

Transit through the Suez Canal is open to vessels of all nations, subject to their complying with the conditions set down in the *Suez Canal Authority Rules of Navigation*. The SCA reserves the right to refuse access to canal waters or order the towing or convoying of vessels considered dangerous or troublesome to navigation in the canal.

By the sole fact of using the canal (i.e., Suez Canal, Port Said harbor and access channels, etc. within the SCA's concession), masters and owners of vessels bind themselves to accept all the conditions of the current *Suez Canal Authority Rules of Navigation*, with which they acknowledge being well acquainted, to conform with these conditions in every respect, to comply with any requisition made with a view to their being duly carried out, and to adhere to the SCA's private Code of Signals.

When in canal waters, any vessel or floating structure of any description is responsible for any damage and consequential loss it may cause either directly or indirectly to the SCA without option for the owners and/or operators to release themselves from responsibility by purely and simply abandoning the vessel, floating structure, or wreck.

Vessels carrying petroleum or dangerous cargo must comply with these regulations and also with the *Suez Canal Authority Rules of Navigation* and the Appendix for Vessels Carrying Dangerous Cargo, a copy of which is given to masters on their arrival at the canal.

Vessels transiting the canal are required to carry charts SC01 and SC02, which are currently available only in paper format.

The following vessels will not be allowed to transit the canal:

1. Any vessel whose Tropical Load Line is submerged or

whose Plimsoll Marks are not plainly visible.

2. Any vessel considered by the SCA to be dangerous to navigation.

3. Vessels carrying dangerous cargo not conforming to the Appendix of Rules to Navigation for vessels carrying same.

4. Vessels having a list of more than 3°.

5. Vessels trimmed in such a way as to cause poor maneuverability.

6. Vessels with deck loads protruding so as to endanger the safety of transit.

7. Vessels loaded in such a manner so as to impair stability.

8. Vessels whose draft is in excess of that permitted.

9. VLCCs or ULCCs if there is a strong wind (a beam wind of over 10 knots).

10. Any vessel without anchors.

It has been reported (2016) vessels trimmed by the bow will not be allowed to transit the canal until the trim is properly adjusted.

Movement of vessels.—Entering or moving within canal waters without the approval of the SCA and a pilot aboard is prohibited. For information concerning when vessel's may navigate in canal waters without a pilot, see **Part G—Suez Canal Pilotage**.

When several vessels are ready to get underway at the same time, the order of sailing will be set by the SCA. The SCA will prescribe the movements of vessels under way in order to ensure the maximum safety to navigation.

Consequently, no vessel may demand immediate passage through the canal, and no claim for delay arising from the foregoing causes can be admitted. Masters must avoid anchoring in the canal, except in case of absolute necessity.

Navigation of sailing craft of every description by night is entirely forbidden. During night transit, vessels must keep their searchlight on. They must show their regulation lights and keep a lookout forward.

Vessels not provided with searchlights and having no means to use hired ones from shore are only allowed to transit at night in exceptional circumstances, escorted by tugs, with the master being entirely responsible. Vessels going through the canal under these conditions are subject to all the other rules for night transit.

In canal waters, sounding the ship's whistle is only allowed as laid down in the signal section

Boats, other than the SCA's own, are not allowed to come alongside vessels which are underway or maneuvering, except the following at their own risk, which include quarantine and police boats, mooring boats, and the ship's agent's boat.

Prohibitions.—The following prohibitions are hereby notified to masters:

1. Allowing any shots to be fired.

2. Taking boats or floating appliances of whatever description in tow of vessels.

3. Throwing overboard earth, ashes, cinders, or articles of any kind into canal waters at any point during transit from sea to sea.

4. Emptying or letting oil, gas, heavy oil, fuel oil, scouring, cleansing water, or flow from tanks having contained such products. The loading, unloading, and, generally, handling of liquid fuel must be so carried out as to avoid any fuel leaking into canal waters, failing which the SCA reserves the right to stop such operations until the necessary repairs shall have been effected.

5. Picking up, without the direct intervention of the SCA's officials, any object that may have fallen into canal waters.

Whenever any object or merchandise whatsoever falls overboard, it must be immediately reported to the SCA.

Accidents.—Whenever a vessel underway is accidentally stopped it must, if other vessels are following, attract their attention by making the sound signal described in the SCA manual. At night, in addition, the white stern light must be replaced by a red light.

In case of grounding, the master must immediately hoist the signal and send a radio message stating whether a tug is required or not; if required, whether or not passage is clear for the tug and whether lightening is necessary, etc.

When a vessel runs aground, the SCA's officials are alone empowered to order and direct all operations required to get the vessel afloat and, in case of need, to get it unloaded and towed.

All attempts on the part of other vessels to get off a vessel aground are strictly prohibited.

Whenever a collision appears probable, vessels must not hesitate to run aground, should this be necessary to avoid it.

Suez Canal tonnage and dues.—The tonnage on which all dues and charges to be paid by vessels, as specified in these regulations, is the net tonnage resulting from the system of measurement laid down by the International Commission held at Constantinople (Istanbul) in 1873 and duly entered on the special certificates issued by the competent authorities in each country.

For further information on tonnage and dues, *Suez Canal Authority Rules of Navigation* should be consulted.

Searchlights.—Vessels must satisfy the officials of the SCA that they are equipped with an adequate searchlight and overhead lighting. Night transit may be suspended in case of breakdown or inadequate or defective functioning of this apparatus.

The searchlight is to be placed on the bow in the axis of the vessel and must show the canal clearly 1,800m ahead, and be built so as to meet the following criteria:

1. The searchlight is to be able to be operated both horizontally and vertically.

2. The front glass must be of a hardened type that can stand rapid cooling.

3. The reflector must be in two halves of precise ground glass mirror of highest quality or of polished aluminum having at least 95 per cent of the reflective ability of the glass mirror.

4. The two halves of the reflector can be brought together to make a single reflector light and can be separated to give two separate light beams each of 5° in the horizontal, with a dark sector of 0° to 10°.

5. The reflector's body must be provided with a vent on which a flexible hose can be fitted to dissipate the heat.

6. The searchlight must be equipped with two lamp carriers which can be turned into position to let the lamps in the focus of the reflector.

7. The electric system must be of the first class marine

type. The power of the incandescent lamps must be 2,000 watts for ships up to 30,000 SCGT and 3,000 watts for ships exceeding 30,000 SCGT, such that the luminous intensity not less than 3,000,000 candela.

Vessels carrying petroleum, LPG, LNG, or inflammable substances or vessels not gas-free, must have a gas-tight searchlight.

On board electrically-powered vessels or vessels having electrically-powered gear, the number of generators and their individual power output must be sufficient to ensure uninterrupted functioning of the searchlight in the event of a power failure. No exception to this rule will be allowed, except when there is an independent generator and circuit on board specifically set apart for the searchlight. All electrical cable, and fixtures for the searchlight, are to be of a permanent nature, insulated, and gas tight.

Vessels whose bulbous bows are less than 3m below sea level, all LNG or LPG carriers, all vessels entering the canal directly from sea, and vessels entering the canal directly from the anchorage S of Conry Rock must provide their own searchlights.

Two shore electricians must be embarked to operate search lights during the transit, whether they are hired or are provided by the vessel; a sheltered place is to be provided for them.

Recently, a new magnetically-mounted searchlight was authorized. Vessels using this facility are required to be fitted with an unpainted steel plate platform, square or round of 0.75m side or diameter, placed on the centerline on the upper part of the stem.

Overhead lights, visible from all points of the compass and powerful enough to light up a circular area of about 200m diameter around the vessel, are required.

Vessels are also required to illuminate their funnels to aid identification.

Part E. Suez Canal Transit Requirements

1.5 Advance notification of transit.—The Suez Canal Authority (SCA) requires 4 days advance notice (as soon as possible for vessels coming from a nearer port) by telex from vessels that want to join a convoy to pass through the Suez Canal.

The SCA can be contacted, as follows:

1.	Telephone:	20-64-910000
2.	Facsimile:	20-64-914784
		20-64-914785
3.	Telex:	91-63238 SUCAN UN
		91-63543 SUCAN UN
4.	Telegraph:	SUCAN ISMAILIA EGYPT

Vessels possessing special characteristics and wishing to transit the canal should submit a request well in advance. The message must contain the following information:

1. Vessel type, nationality, and name.
2. Draft on day of transit.
3. Suez Canal Gross Tonnage (SCGT) and dwt.

Notice of cancellation or alteration of passage must be given at least 24 hours ahead or a fine will be levied. Vessels arriving without booking ahead will join the convoy if traffic in the canal allows or they may join the next convoy.

Information required in advance of arrival.—The following information should be sent to the SCA through Ismalia Coast Radio Station (SUQ), preferably, or through the vessel's agent, at least 48 hours and 24 hours prior to arrival:

1. Type of vessel, nationality, and name (with former name, if any).
2. Suez Canal Gross Tonnage, dwt, draft, and beam.
3. Whether vessel intends to transit canal or stop in the harbors, including the duration of stay in harbor, if appropriate.
4. ETA Port Said (southbound) or Port Suez (northbound).
5. Quantity and IMO class of any dangerous cargo.

Ismailia Coast Radio Station (SUQ) can be contacted, as follows:

1.	Call sign:	Ismailia Radio
1.	VHF:	VHF channel 68
2.	Telephone:	20-64-3393118
		20-64-3393126
		20-64-3393128
		871-362213310 (INMARSAT-B)
3.	Facsimile:	20-64-3393230
		20-64-3393517
		871-362213312 (INMARSAT-B)
4.	Telex:	91-63238 SUCAN UN
		91-63528 SUQSC UN
		581-462299911 (INMARSAT-C)
		581-362213314 (INMARSAT-B)
5.	E-mail:	ismradio@hotmail.com
		ismradio@mail.suezcanal.gov.eg

Information to be passed to the SCA on arrival.—The appropriate harbor office should be contacted by VHF (or through Ismalia Coast Radio Station (SUQ), if VHF communications is not possible), as follows:

1. Southbound vessels entering from the Mediterranean Sea—About 15 miles from Fairway Lighted Buoy off Port Said (31°21.3'N., 32°20.7'E.) to Port Said Harbor Office on VHF channel 16.
2. Northbound vessels entering from the Red Sea—About 5 miles from Separation Zone Lighted Buoy No. 1 in the Suez Bay approach (29°39.5'N., 32°32.5'E.) to Port of Suez Harbor Office on VHF channel 14.

The following information should be passed at that time:

1. Position (latitude and longitude).
2. Vessel's name.
3. Call sign.
4. Suez Canal Identification Number (SCID).
5. Suez Canal Gross Tonnage and dwt.
6. Draft.
7. Whether vessel is loaded or in ballast.
8. Nature of cargo.
9. Any defects affecting the safety of navigation.

In addition, vessels transiting the canal for the first time should state:

1. Date of building.
2. Whether Suez Canal Tonnage Certificate is held and, if so, its date of issue.
3. Call sign or SCID.
4. Length overall.
5. Beam.
6. Type of engines.

7. Whether vessel intends to transit canal or only stop in the harbor.

It has been reported (2015) vessels transiting the canal for the first time and possibly being required to use escorting tugs shall submit the following information to the Survey Section at the port of entry (Port Said or Port Tewfik) 7 days prior to transit:

1. Suez Canal Tonnage Certificate with full calculation sheets.
2. General arrangement plan with scale.
3. Capacity plan.
4. Engine room arrangement plan with scale.

Vessels with an azimuth propulsion system transiting the canal for the first time and having a beam greater than 40m or less than 20m must successfully pass a sea trial in the open sea prior to transiting the canal.

It has been reported (2003) that information concening the location and condition of the vessel's anchors and the required searchlights (see paragraph 1.4), as well as the vessel's last port of call and next port of call, were requested.

Non-operational VHF or UHF communications equipment.—Special requirements will be in effect if the vessel's VHF or UHF equipment is non-operational. For further information, see paragraph 1.3 (Part C—Suez Canal Signals).

Documents.—The following documents must be readily available:

1. Suez Canal Special Tonnage Certificate.
2. Certificate of Registry.
3. Statistical Declaration.
4. Extract from any of the vessel's official documents and information concerning its type and cargo.
5. Declaration concerning the use of double bottom tanks and the lower part of high tanks.
6. Declaration concerning vessels in ballast.
7. Declaration of state of navigability.
8. The last classification certificate issued.
9. Capacity plan.
10. General arrangement plan.
11. Piping plan of LPG and LNG vessels.
12. Canal searchlight certificate.
13. Four copies of the crew list.
14. Four copies of the passenger list.
15. Any other information relevant to the vessel's transit.
16. It has been reported (2011) that heavy-lift or semi-submersible vessels carrying heavy loads must provide an original certificate from the loading port, stating the details of the cargo, prior to transit.

Pre-transit procedures.—All vessels ready to enter the canal must have their ladders and jib booms run in, their boats swung in and any derricks, obstructing the view forward, lowered.

Vessels must be equipped with a rudder angle indicator and an engine RPM indicator in the wheelhouse, easily seen by the pilot.

The bow anchors must be ready to let go. Prior to entering the canal, it must be ascertained that main engines, steering gear, engine order telegraph, rudder angle and RPM indicators, VHF, and radar are in good working order.

Vessels in ballast must fill spaces used for carrying water ballast as directed by the SCA.

Deck cargo is to be stowed in a way so as to provide a clear view from the navigating bridge while transiting the canal, as well as not to affect the vessel's stability.

Mooring ropes.—Vessels shall have at least six flexible floating mooring lines, in good condition, fitted with eyes. Vessels equipped with tension mooring wires may reduce this number to four. Any mooring lines likely to produce sparks are forbidden on board tankers or any vessels carrying inflammable substances.

Mooring boats.—Mooring boats must be in constant readiness for lowering to run the hawsers to the mooring bollards without delay. The number of mooring boats required is based upon the vessel's SCGT. Vessels hire mooring boats from a mooring company approved by the SCA, as follows:

1. Vessels under 2,500 SCGT—one mooring boat or one motor boat.
2. Vessels from 2,500 to 5,000 SCGT—one motorboat.
3. Vessels from 5,000 to 30,000 SCGT—one motorboat and one mooring boat, or two motor boats.
4. Vessels over 30,000 SCGT—two motor boats.

Masters may request additional boats. The lifting appliances handling mooring boats must have a Safe Weight Limit of at least 4 tons, and must not be placed so far aft that the boat and crew are exposed to the ship's propellers.

Tug escort requirements.—Large bulk carriers, ULCCs, VLCCs, and other designated vessels will be escorted by tugs, as follows:

1. Loaded vessels of less than 70,000 Suez Canal Net Tons (SCNT) will be escorted by one tug if the SCA finds it necessary for technical reasons or when the vessel's draft is greater than 14.3m.
2. Loaded vessels from 70,000 to 90,000 SCNT will be escorted by one tug.
3. Loaded vessels over 90,000 SCNT will be escorted by two tugs.
4. Vessels in ballast over 130,000 SCNT will be escorted by one tug.
5. LPG and LNG vessels over 25,000 SCNT will be escorted by one tug. Gas-free vessels will be treated as tankers in ballast.
6. Vessels in ballast with a beam of over 66.5m, up to a beam of 71.02m, will be escorted by one tug.
7. Vessels in ballast with a beam over 71.02m will be escorted by two tugs.
8. Towed scrap vessels in ballast of 80,000 SCNT and over will be escorted by one tug.
9. Loaded heavy-lift ships are to be escorted by one or more tugs.
10. Integrated units will be escorted by one tug on their first transit.
11. Vessels with an azimuth propulsion system:
    a. Vessels with a beam greater than 40m will be escorted by two tugs.
    b. Vessels with a beam of 20 to 40m will be escorted by one tug.

The above-mentioned vessels, as well as vessels under 100,000 dwt if their draft is greater than 14.33m, have to prepare two polypropylene ropes of 16-inch circumference to join the stern to the tug during stopping operations. The ropes should be eye-spliced to fit in the quick release hook on the tug

and with adequate length to give a distance between the fore of the tug and the stern of vessel at about 50m.

On the vessel, these ropes will be made fast on port and starboard stern bitts. The eyes will be hanging over the stern about 2m above the water and lashed with rope stoppers to break loose when necessary.

The SCA may impose mandatory tug escorts in the following instances:

1. The Suez Canal Authority may require any vessel to take a tug or tugs through the canal, when in its judgment such action is necessary to ensure safety to the vessel or to the canal.
2. Any vessel without mechanical power, or the machinery of which are/or become disabled, or steers badly, or who is liable to become unmanageable for any reason, shall be towed through the canal.
3. Vessels having engine or steering gear trouble for the second time during the same passage.
4. Vessels who, owing to deck cargo, containers, cranes or constructions, have an obstructed view from the wheelhouse and wings.
5. Vessels of 1,500 SCGT and over unable to use one of their two anchors, built with one anchor, or built with more than one anchor if only one of them is located on the bow.
6. Drilling vessels.
7. Vessels with two engines on one propeller, one of which is out of order for any reason, and cannot maintain a speed of at least 10 knots without a current sea trial to assure the speed and a valid Seaworthiness Certificate.
8. Vessels with two engines on two propellers, one of which is out of order.
9. On the master's request for one or more tugs.
10. Submarines must be escorted by one or two tugs.
11. Aircraft carriers are to be escorted by two tugs.
12. General cargo vessels and multipurpose vessels carrying class 1 explosives shall be escorted by tugs, as follows:
    c. Explosive cargo less than 50 per cent of total cargo—one tug.
    d. Explosive cargo 50 per cent or more of total cargo—two tugs.

At Port Said, tugs maybe placed at the disposal of masters if the SCA deems it necessary. Vessels maneuvering in the harbor are required to provide their own hawsers.

Wire tow-ropes are not allowed. The SCA may order that certain defective vessels, or vessels carrying dangerous cargo, shall be towed or convoyed in the canal by one of the SCA's tugs.

With the exception of certain cases involving fire, grounding, etc., the master of a vessel utilizing a tug placed at its disposal has the exclusive direction and control of the maneuvering of both the vessel and the tug.

Shipowners are authorized to have their vessels towed or convoyed by their own tugs, or tugs belonging to third parties, upon their entire responsibility; such tugs must be approved by the SCA.

Part F. Suez Canal Convoy System

1.6 Vessel transits through the Suez Canal are facilitated using a convoy system. The convoy system consists of one Southbound Convoy and one Northbound Convoy.

Southbound Convoy

Group A is made up of vessels in Port Said. Vessels in this group enter the canal at the S end of Port Said Harbor.

Group B is made up of the following vessels anchored in the Northern Anchorage Area:

1. Third and fourth generation container vessels.
2. VLCCs in ballast.
3. Vessels with a draft of over 12.8m.
4. LPG, LNG, and non-gas-free vessels, whether loaded or in ballast.
5. LASH vessels over 40,000 SCGT.

Vessels in Group B enter the Port Said By-pass Approach Channel in time to join Group A at Km 17.0.

Group C is made up of vessels in the South Anchorage that will enter through Port Said West Approach Channel in time to join Group B at Km 17.0.

Vessels in the Southbound Convoy must be ready to proceed by 2300, although vessels may join the convoy after this time at additional cost. The Southbound Convoy departs at 0330 and usually proceeds without stopping to the S exit of the canal at Port Suez.

The speed of transit is 14 km/hour (7.6 knots) for tankers and 16 km/hour (8.7 knots) for all other vessels.

Northbound Convoy

Group A is made up of the following vessels:

1. Naval vessels.
2. Third and fourth generation container vessels.
3. LASH vessels over 40,000 SCGT.
4. LPG, LNG, and non-gas-free vessels, whether loaded or in ballast.
5. Loaded chemical carriers.

Group B is made up of the following vessels:

1. Loaded VLCCs.
2. Conventional loaded tankers.
3. Heavy bulk carriers with a draft greater than 11.6m or a length between perpendiculars greater than 289.7m.

Vessels in the Northbound Convoy must be ready to proceed by 2300, although vessels may join the convoy after this time at additional cost. The Northbound Convoy departs at 0400 and usually proceeds without stopping to the N exit of the canal at Port Said.

The Southbound Convoy uses all Western Bypass routes to avoid the Northbound Convoy, while the Northbound Convoy uses all Eastern Bypass routes.

Part G. Suez Canal Pilotage

1.7 Pilotage is compulsory for all vessels, whatever their tonnage, when entering, leaving, moving, changing berth or shifting on Canal Waters or Port Said and Port Suez harbors. Any exception must be explicitly authorized by the Suez Canal Authority (SCA). However, the SCA reserves the right to assign a tug master on board vessels under 1,500 SCGT, and a coxswain on board vessels under 800 SCGT, instead of a pilot.

Navy ships and vessels carrying dangerous cargo must have a pilot, regardless of their tonnage.

Masters are held solely responsible for all damage or acci-

Suez Canal—Typical Pilot Boat

dents of whatever kind resulting from the navigation or handling of their vessels, directly or indirectly, by day or night.

When a vessel is transiting the canal, the master or the master's qualified representative should be present at all times on the bridge. The master or the master's qualified representative is to keep the pilot informed of any individual peculiarities in the handling of the vessel, thus permitting the pilot to better navigate and move the vessel.

The duties of pilots commence and cease at the entrance buoys of Port Said and Port Suez. The pilot only gives advice on maneuvering the vessel, course to steer, etc. The pilot puts at the disposal of the master the experience and practical knowledge of the canal, but as the pilot cannot know the defects or difficulties of maneuverability for every vessel. This responsibility falls completely upon the master.

It is the responsibility of the master, taking into account the indications given by the pilot, to give the necessary orders to the helm, to the engines, and to the tugs. However, in the interest of rapid maneuvering, if the master prefers that the pilot give orders directly, then those maneuvers carried out by the pilot are still considered as orders of the master, and the responsibility of the master as well.

The pilot has to ensure that the vessel abides by:

1. The articles of Rules of Navigation.
2. The orders of transit given by movement control.

Pilots are employed in four stages.

For southbound vessels, pilots are engaged, as follows:

1. From Fairway Lighted Buoy to berths in Port Said Harbor through Port Said Harbor Approach Channel or from the North Anchorages (Zone One and Zone Two) through Port Said By-pass Approach Channel to the N entrance to Port Said By-pass.
2. From Port Said Harbor, or the N entrance to Port Said By-pass to Ismailia.
3. From Ismailia to the pair of lighted buoys marking the S entrance to the canal.
4. From the pair of lighted buoys marking the S entrance of the canal to Km 80.5, the S entrance to Newport Rock Channel. However, pilotage make be requested to cease at Km 44.4 at Newport Rock.

For northbound vessels, pilots are engaged, as follows:

1. From the Deep-Draft Anchorages S of Conry Rock, or from the Main Anchorage Waiting Area, to the pair of lighted buoys marking the S entrance of the canal.
2. From the pair of lighted buoys marking the S entrance of the canal to Ismailia.
3. From Ismailia to the N entrance to Port Said By-pass.
4. Through Port Said By-pass Approach Channel to Km 80.0.

Additional pilots will be assigned to vessels in the following situations:

1. Vessels greater than 80,000 SCGT.
2. Vessels with a poor view from the bridge.
3. Vessels which, due to slow speed or other causes, that

Pontoon bridge—Ready for deployment

have to transit the canal in stages.

4. Vessels that do not have suitable accommodations for the pilot to rest when not underway.

5. Fourth generation container vessels, third generation container vessels over 60,000 SCGT, and LASH vessels of 35,000 SCGT or greater.

6. Masters may request an additional pilot or the SCA may assign one if it deems it necessary.

The signal requesting a pilot should be hoisted 2 hours. before the expected time of getting underway. See Part C—Suez Canal Signals for specific signals.

Pilots for navigation in the Suez Canal are due on board 1 hours 30 minutes after the signal has been hoisted. Pilots for proceeding to sea or for changing berth are due 30 minutes after the signal has been hoisted.

Pilots are exchanged at Ismailia (30°35'N., 32°17'E.).

Pilot boarding positions are given in the table titled **Suez Canal—Pilot Boarding Positions**.

When a pilot is unable to board vessels due to bad weather in the approaches to the canal, vessels may navigate without a pilot under their own responsibility in the following circumstances:

1. Southbound vessels joining a southbound convoy, via Port Said By-pass Approach Channel from the Mediterranean Sea anchorage areas at the N end of the canal to the entrance to the canal at Km 0.0 of Port Said By-pass Channel.

2. Southbound vessels in a southbound convoy from Km 162.0 to sea.

3. Northbound vessels joining a northbound convoy from the Deep-Draft Anchorage of the Main Anchorage waiting area to the entrance to the canal, when a canal pilot will board near Km 161.1.

4. Northbound vessels in a northbound convoy from Km 3.0E in Port Said By-pass Channel.

Suez Canal—Pilot Boarding Positions	
Vessels entering from the Mediterranean Sea	
VLCCs, fourth and third generation container vessels, LASH vessels over 35,000 SCGT, LPG and LNG vessels (both loaded or not gas-free), and vessels with a draft greater than 12.8m	North Anchorage Area (Zone One)
Vessels with drafts between 11.9m and 12.8m	North Anchorage Area (Zone Two)
All other vessels	Near Fairway Lighted Buoy

Suez Canal—Pilot Boarding Positions	
Note.—Caution is necessary as the pilot may board anywhere between the expected boarding position and the entrance to the Port Said By-pass.	
Vessels entering from the Red Sea	
VLCCs, large bulk carriers, fourth and third generation container vessels, LASH vessels over 35,000 SCGT, LPG and LNG vessels (both loaded or not gas-free), and vessels with a draft greater than 11.6m	Anchorage area S of Conry Rock
All other vessels	Waiting area N of Conry Rock

Pontoon bridge—Deployed

Upon sighting the signal that a pilot is coming out, vessels must make ready to bring the pilot aboard and enter the canal without delay. A vessel at anchor in a waiting area must shorten its cable and make a lee for the pilot launch to come alongside.

Accommodation ladders should be rigged for use by the pilot. Vessels should be aware that this is in contravention to the normal IMO-approved procedure of boarding the pilot via a pilot ladder. Should the accommodation ladder be situated near the vessel's propeller, a pilot ladder should be rigged amidships.

Vessels with a high freeboard should provide a mechanical hoist for the pilot. A ship's officer should be in attendance when the pilot boards.

If a pilot's services are dispensed with after arrival on board or the time of departure be postponed, or if a pilot sails with a vessel due to heavy weather or due to the vessel's request, additional charges will be made.

A spare cabin or space should be set aside where the pilot can rest during the vessel's waiting period. Vessels unable to provide this space will be subject to delays and extra pilotage dues.

In the event of the pilot being suddenly unable to go on with pilotage duties, the master must:

1. Warn the vessel astern of the intended maneuvers by the visual and sound signals as listed in Part C—Suez Canal Signals, as well as by VHF or other means via Ismailia Radio Station (SUQ).
2. Reduce speed and contact the Movement Office at Ismailia for advice on making fast if in the canal or entrance channels, or anchoring if in the lakes.
3. Keep the Movement Office at Ismailia informed at all times via UHF or VHF, with confirmations by INMARSAT or by other means via Ismailia Radio Station (SUQ).

Part H. Anchorage Areas

1.8 The anchorages given below are used by vessels

Suez Canal—Typical security facility

awaiting transit of the Suez Canal. Regulations for their use are detailed in the preceding sections. Anchorages within the canal proper, including Buheiret El-Timsah and El-Buheira El-Murra El-Kubra (Great Bitter Lake) are given in Part I—General Description in paragraph 1.9 and paragraph 1.10, respectively. All of the anchorages described below are best seen on the appropriate chart.

Port Said.—Off Port Said, three anchorage areas are available; they are all best seen on the chart.

North Anchorage (Zone 1) is for deep-draft vessels with a draft greater than 12.8m waiting to enter the Suez Canal.

North Anchorage (Zone 2) is for deep-draft vessels waiting to enter the Suez Canal. Vessels authorized to use this anchorages are third generation container vessels, VLCCs in ballast or partially loaded, and vessels with drafts between 11.9m and 12.8m. Each anchor of the eight berths has a radius of 750m and are designated V1 through V8.

South Anchorage is for vessels with a draft of up to 11.9m waiting to enter Bur Said Harbor or the Suez Canal through Bur Said Harbor. Each of the 15 anchor berths has a radius of 500m and are designated C1 through C15. The bottom is mud, good holding ground.

Anchorage is prohibited within a charted Prohibited Anchorage Area W of charted anchorages. Anchorage is also prohibited between the E limit of North Anchorages (Zone 2) and South Anchorage and Bur Said East Branch.

Vessels from sea should, if practicable, avoid entering the Bur Sa'id (Port Said) anchorage areas between 0100 and 0500 when vessels within these areas are leaving to form convoys for entering the canal.

Caution is necessary in this area; some vessels waiting to make a southbound transit of the Suez Canal do not anchor, but drift or transit slowly in the area N of the anchorage areas.

Port Suez.—South of Suez Bay, nine charted anchorage berths are located SE of Conry Rock; these anchorage berths are available to northbound VLCCs, bulk carriers, third generation container vessels, and vessels with drafts greater than 11.6m. The berths are designated V-1 through V-9.

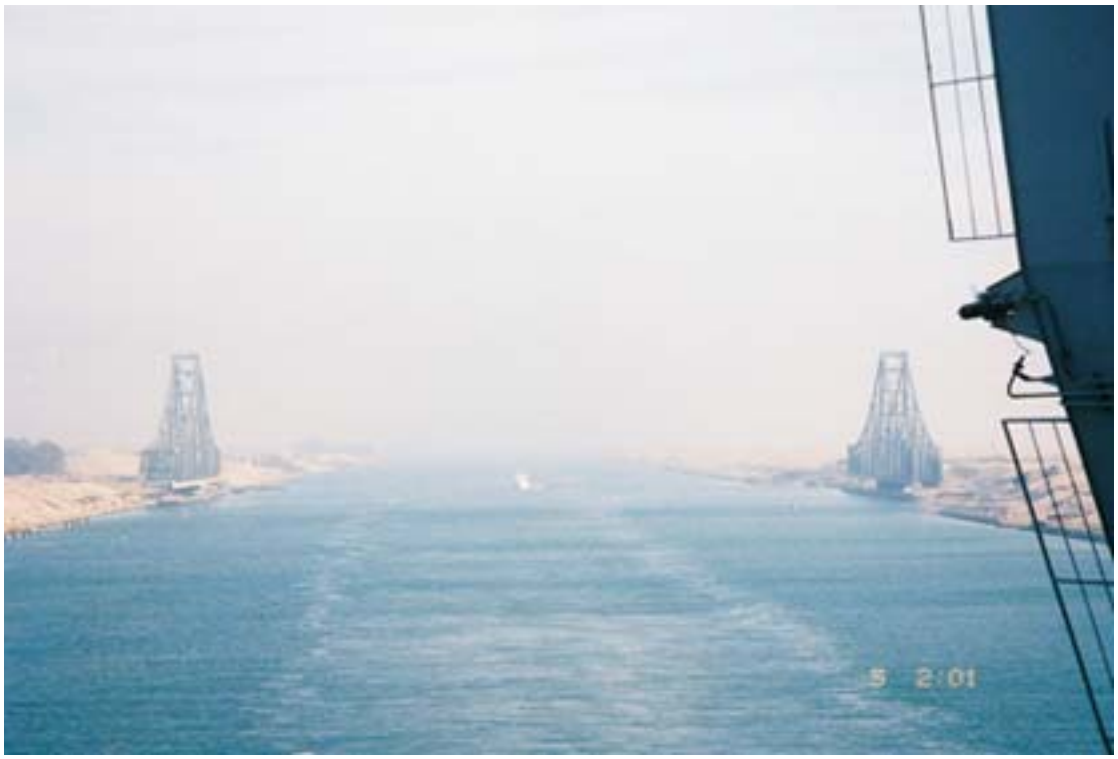
All other northbound vessels should anchor in the charted waiting area N of Conry Rock; the waiting area has 24 charted anchorage berths designated E-1 through E-24. Anchorage is prohibited in the charted area W of the waiting area.

Fourteen anchorage berths, designated W-1 through W-14, each with a radius of 300m, are located W of the S end of Newport Rock Channel and NW of the charted prohibited anchorage area; they may best be seen on the chart. Vessels wishing to use these anchorages must have their agents submit a written request to the Port Tewfik Transit Sector prior to using these anchorages.

It has been reported (2010) that vessels will occasionally anchor outside the charted anchorage areas.

A dangerous wreck lies on the W edge of this area, 1.5 miles N of SC No. 2 Lighted Float. Another dangerous wreck, marked close S and E by lighted buoys, lies in the charted prohibited anchorage area, about 0.5 mile NE of SC No. 2 Lighted Float.

Anchorages in El-Buheira El-Murra El-Kubra (Great Bitter Lake) and El-Buheira El-Murra El-Sughra (Little Bitter Lake)



El Firdan Bridge from N

are described in paragraph 1.9.

Anchorages in Suez Bay (Bahr el Qulzum) are described in paragraph 1.13.

Part I. General Description

1.9 Port Said (Bur Said) (31°16'N., 32°18'E.) was founded in 1859, when the Suez Canal was inaugurated. It is situated largely on man-made land; a low sandy strip separating the Mediterranean Sea from Lake Al-Manzilah. It lies at the N entrance to the Suez Canal. Port Said is described in Pub. 132, Sailing Directions (Enroute) Eastern Mediterranean.

Charted navigational aids in the approaches to Port Said (Bur Said) may be difficult to discern at night due to excessive background lighting.

Vessels should use caution as it has been reported (2015) the merging of the Port Said Channel, the Port Said Bypass, and the approach channel to the Suez Canal Container Terminal presents a challenge to identifying the buoyage in this area.

The **Suez Canal Container Terminal** (31°13'N., 32°21'E.) is located E of the Bur Sa'id By-Pass. The terminal is approached through a buoyed channel dredged to a depth of 18.5m. The terminal consists of four berths, with a total length of 1,200m and an alongside dredged depth of 16.5m. An additional berth in the continuing construction of the second phase has been completed.

It has been reported (2016) a new approach channel to the terminal, with a length of 9,500m, a width of 250m, and a dredged depth of 18m, now leads directly to the terminal and provides 24-hour access to the terminal.

The terminal can be contacted, as follows:

1. Telephone: 20-66-3254960
2. Facsimile: 20-66-3254970
3. E-mail: scct@scctportsaid.com
4. Web site: http://www.scctportsaid.com

Several pontoon bridges, bridges, submarine pipelines, ferries, and cable areas cross the channel at various places along the canal, and may best be seen on the appropriate chart.

Egyptian military security facilities are located throughout the length of the canal on both the E bank and the W bank.

The International Peace Bridge (Al Qantarah Bridge) has been previously described in paragraph 1.1.

The El Firdan Bridge, a road and rail swing bridge, crosses the canal at Km 68.0, about 2 miles S of the SCA signal tower at El Firdan. Further information can be obtained at the following web site:

El Firdan Bridge
http://www.halcrow.com/html/media/egypt.htm

As previously mentioned in **Part A—General Remarks** (paragraph 1.1), the canal is maintained to a centerline depth of 24.0m except at the previously-described locations.

Bur Said Bypass and Bur Said West Branch are straight, from sea or from about Km 4.0, respectively, to their junction at Km 17.0.

From Km 17.0 to El-Qantara, about 15 miles S, the canal is

El Firdan Bridge

Gebel Maryam War Memorial (Km 82.0)

straight and passes through what was formerly the bed of Buhayrat Al Manzilah (Lake Manzala).

On the E side, this lake is now a dry flat sandy plain scarcely higher than the level of the canal; the W side is slightly lower and receives the waters of the Nile through various channels.

The E bank of the canal is being constantly increased by the deposit of dredged material. The W bank is formed of the black sandy mud and clay from the lake bottom.

The Suez Canal Bur Said West Branch is entered between two lighted buoys moored at the S end of Husein Basin. The Bur Said Bypass, also known as the Suez Canal East Branch, enters the Mediterranean Sea about 2.5 miles SE of the **Bur**

Gebel Maryam War Memorial (Km 82.0)

Said High Light (31°16'N., 32°19'E.).

From El-Qantara to **Buheiret El-Timsah** (30°35'N., 32°18'E.), a distance of about 17 miles, the canal passes through low sand hills until it reaches the depression near El-Ballah. About 2 miles N of El-Ballah, the canal runs S in two branches for about 5.5 miles.

The canal through the lake has been sufficiently widened to permit turning and anchoring.

Al-Ballah By-pass, also known as Al Ballah Eastern Branch, is a straight cut between Km 51.0 and Km 60.0. El Ballah West Branch is normally used by the Second Southbound Convoy (N2), which ties up here to let the Northbound Convoy pass. There are 15 berths with shore bollards situated on the E side of El Ballah West Branch.

Buheiret El-Timsah (Lake Timsah) lies almost in the center of the canal. Timsah West Branch is marked by lighted buoys through the lake.

Only vessels with a draft not greater than 5.5m are permitted to anchor between this above area and the shore NW. Six designated anchorage berths, best seen on the chart, are located in Timsah West Branch.

Buheiret El-Timsah By-pass is cut on a curve E of Timsah West Branch between Km 76.0 and 82.0.

1.10 Ismailia (El-lsmailiya) (30°35'N., 32°17'E.) (World Port Index No. 48050), an intermediate port of the Suez Canal situated on the N shore of Lake Timsah, is the Control Center of the Suez Canal Authority. Ships transiting the canal change pilots at this port. There is quayage for lighters in the harbor.

Two conspicuous war memorials stand along the banks of the canal in the vicinity of Ismailia, as follows:

1. East bank at Km 77.0—An Egyptian war memorial, about 66m high, resembles an upturned bayonet.
2. West bank at Km 82.0—Gebel Maryam War Memorial, about 40m high, commemorates those who defended the Suez Canal during World War I.

Between Tusun and Km 93.0, 3.5 miles S, the canal runs straight, through compact sand or clay which is not hard enough to be dangerous to vessels.

From Km 93.0, Deversoir By-pass (Difirsuwar By-pass) divides the channel into two parts to pass through the Bitter Lakes. The E branch is cut E of the original canal. There are plantations of trees on the W bank, along with a signal station at Deversoir (Difirsuwar).

El-Buheira El-Murra El-Kubra (Great Bitter Lake) and **El-Buheira El-Murra El-Sughra** (Little Bitter Lake) (34°15'S., 32°33'E.) occupy a depression formerly connected with Bahr El-Qulzum (Suez Bay). Together, they extend about 19 miles in a N to S direction, with a greatest width of about 6 miles. The lakes are separated by a point on which is situated the El-Kabrit Signal Station.

The channels through El-Buheira El-Murra El-Kubra connect the Deversoir By-pass (Difirsuwar By-pass) to the El-Kabrit Loop and are marked by buoys. The E branch is dredged to 23.5m, while the W branch is maintained to a depth of 15m.

There are dredged anchorage areas on either side of the channels dredged through the lake, the boundaries of which are marked by buoys. The Eastern Anchorage is for the use of

Egyptian War Memorial (Km 77.0)

northbound vessels, while the Western Anchorage is used by southbound vessels. Each anchorage is sub-divided into several smaller anchorages of varying depth. The bottom is reported to be mud and silt.

These smaller anchorages are numbered, are prefixed with an E or W, and are best seen on the chart. An anchorage for vessels with a maximum draft of 4.8m is located NE of Anchorage Area E2 and may best be seen on the chart. The depth in each anchorage area is, as follows:

1. Area W1—13.5m.
2. Area W2—13.0m.
3. Area W3—14.5m.
4. Area W4—9.0m. It has been reported (2015) this area is no longer used as an anchorage due to shoaling.
5. Area W5—13.0m.
6. Area E1—22.5m.
7. Area E2—18.0m.
8. Area E3—17.5m.
9. Area E4—16.0m.

Abu Sultan Quay, located at the NW corner of the larger lake, about 2.5 miles ESE of the signal station at Difirswar, is protected by a detached breakwater which is in disrepair. Depths alongside are reported to be 1.5 to 2.7m.

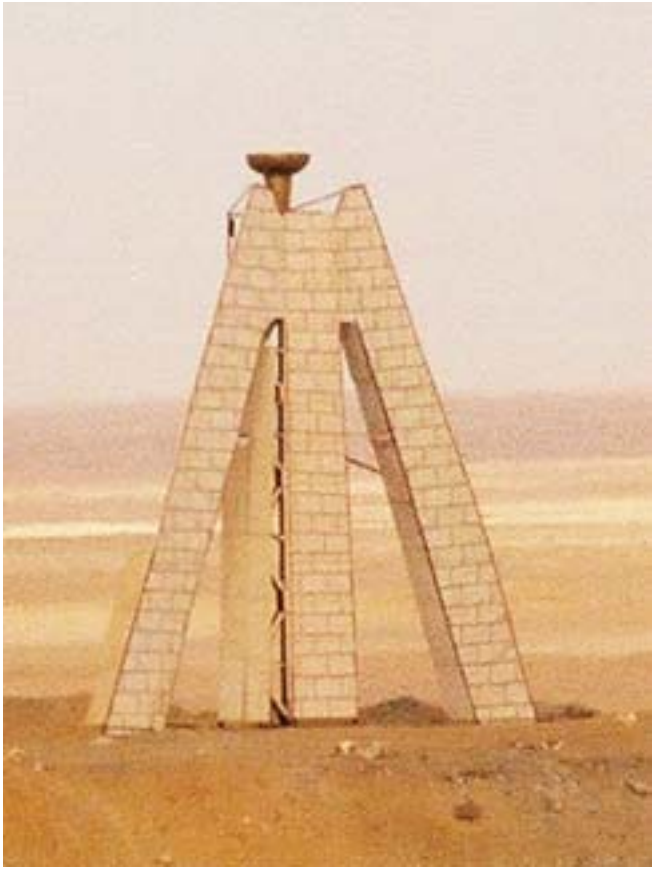
Fanara Quay (30°17'N., 32°21'E.), about 7 miles SSE of Abu Sultan Quay, has a depth of 2.4m alongside.

El-Kabrit Loop connects El-Buheira El-Murra El-Kubra and El-Buheira El-Murra El-Sughra. The channels are separated by a bank with depths of less than 2m, on which are located mooring posts.

The canal from El-Buheira El-Murra El-Sughra to El-Suweis (Suez), a distance of about 11 miles, trends S about 6 miles from the S end of El-Buheira El-Murra El-Sughra, then curves slightly E about 5 miles; it then curves gradually SW, past the area known as Port Tewfik, and into Suez Bay.

This part of the canal passes through hard, and sometimes rocky, ground. The rocky areas, where it would be dangerous for vessels to moor to the bank, are marked by buoys, and by red posts on the banks. At El Shatt, on the E bank between Km 157.0 and Km 158.0, there are 550m of wharf space for lighters, with a depth of 2.4m alongside.

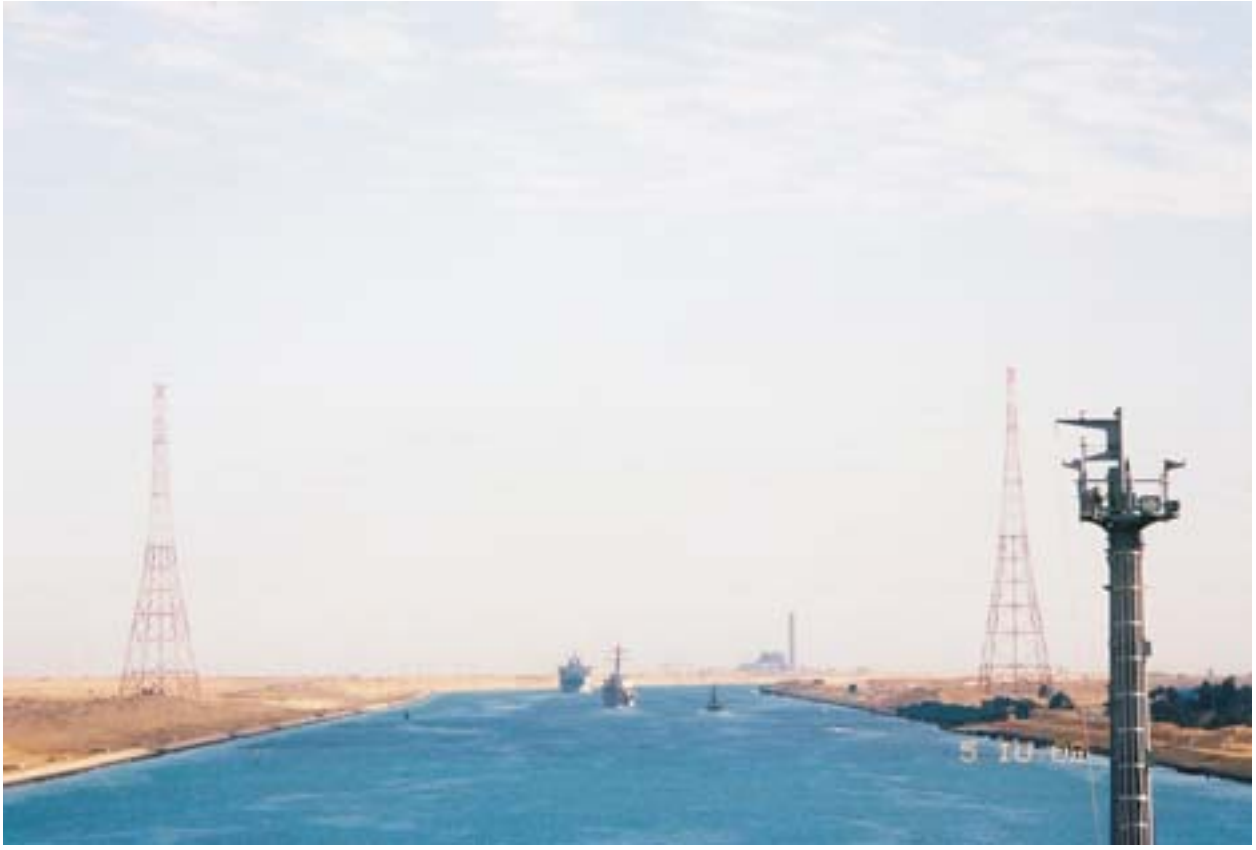
The conspicuous Sinai Liberation Monument stands on the E bank of the canal at Km 138.4.



Sinai Liberation Monument

Caution.—Power lines, with a vertical clearance of 135m, cross the canal close S of Km 153.0.

1.11 Port Tewfik (29°56'N., 32°34'E.) is that part of Suez Canal lying within 1 mile of its S entrance. South Basin, situat-



Power lines near Km 153.0 from N

Suez Canal—Newport Rock Light (left)

Suez Canal—Green Island from E

ed at the N end of the Port Tewfik "gare," has depths of less than 4.5m.

Gares are places at which the canal was widened to allow a vessel to secure to the bank so that another might pass.

A Suez Canal Authority signal station, which is a prominent metal structure with transverse arms, stands on the NW side of the S entrance to the canal.

Had el-Marakib (Qad el-Marakib) (29°56'N., 32°34'E.), within the S entrance of the canal at its E side, is a low sandy point covered at high water. A drying sand bank extends about 0.5 mile W and SW of the point. A breakwater extending across the sand bank S of Had el-Marakib, is connected to that point by sheet piling.

Wharves occupy the canal side of the point, the S half of which has a charted depth of 8.5m. Port Tewfik is described in paragraph 1.14.

Birket Misalla Light is shown from a beacon standing 2 miles SE of Had el-Marakib. A landing strip and a beacon are located 0.5 mile NNW and 1 mile NW, respectively, of the light.

Suez Bay

1.12 Suez Bay (Bahr el Qulzum) (29°54'N., 32°32'E.), extending about 4.5 miles S from its head, is entered between **Ras al-Adabiyah** (29°52'N., 32°30'E.) and **Ras Misalla** (29°49'N., 32°37'E.).

The Suez Quarantine Station, where there is a pier with a flagstaff at its head and a conspicuous water tower, lies about 5.5 miles ENE of Ras Adabiyah.

Large expanses of reefs border the sides of the bay, which should not be approached without local knowledge.

The shores of Suez Bay are low and sandy, except to the SW, where Jabal Ataqah ascends from the shore to a maximum elevation of 570m.

Eastward of this mountain range and on the N side of the bay is a desert plain, with the town of Suez still farther E on a spit of the desert.

On the E side of the bay a plain, mostly sand, extends about 12 miles inland in a SE direction, gradually rising to moderately-high hills.

Along the N side of the bay are numerous storage tanks located up to 2.5 miles W of As Suways, as well as two conspicuous chimneys.

A cable area lies on the W side of the bay, and may best be seen on the chart.

Tides—Currents.—Strong S winds raise the water level in Suez Bay, which affects the currents in the canal. The greatest rate, about 1.75 knots, is attained near El Kubra, Km 149.0. During strong S winds, the N current attains a rate of 2.5 knots at springs.

Off South Basin, care must be taken to guard against a strong current setting across the canal, frequently opposing the current in the canal.

Depths—Limitations.—Depths in the middle of the bay range from 11 to 18.5m, mud and clay. There are numerous detached patches of 6.5m or less scattered throughout the bay, as well as occasional drying patches.

Fringing shoal flats and reefs front the sides of the bay, extending as far as 1.5 miles offshore.

Al-Jazirat al-Khadra (Qala Kebira) (29°55'N., 32°32'E.) is a coral shoal of less than 5.5m lying in the middle of the bay. Green Island, lying in the middle of the shoal, is marked by a light. Lighted buoys and beacons mark the extent of a shoal area around the island.

An offshore oil berth, located 1 mile NW of Green Island, is described in paragraph 1.14.

Two conspicuous wrecks lie 0.6 mile NE and 1.5 miles E, respectively, of the light marking Newport Rock. The first wreck appears as a vessel at anchor, listing to port, while only the

Suez Canal—Conspicuous chimney close E of South Entrance

Suez Canal—South Entrance from S

masts of the second are visible.

Newport Rock (Zenobia) (29°53'N., 32°33'E.) is a small knoll of soft mud, marked by a light, with a depth of 6.7m.

Caution.—Above and below-water wrecks, mostly unmarked by buoys, are scattered throughout the Suez Bay. The wreck positions are best seen on the chart.

Lights and lighted buoys in Suez Bay may be difficult to make out, especially if there is much shipping in the bay. Aids to navigation may also be difficult to distinguish at night due to excessive background lighting.

1.13 The three main fairways in the approaches to Suez Bay are Eastern Channel, Western Channel, and Newport Rock Channel.

Vessels entering the port from sea or leaving the port for sea should use Western Channel, except for vessels anchoring in Berth 1C and Berth 2C, which should use Eastern Channel.

Vessels entering the canal from the port should use Western Channel, joining Eastern Channel SE of Green Island, except the vessels in anchorage Berth 1C to Berth 7C, which should proceed direct to the canal entrance.

Vessels entering the port from the canal should use Eastern Channel and then Western Channel, except for vessels anchoring in Berth 1C to Berth 7C, which may proceed directly to these berths.

Eastern Channel projects SSW and S from the lighted buoys marking the S entrance to Suez Canal, 0.5 mile SW of Port Tewfik to Newport Rock, 2.5 miles S. The channel is maintained to a depth of 23.5m; anchorage is prohibited within it.

Western Channel lies NW, W, and S of Green Island. Newport Rock Channel projects 2 miles S from the S end of Eastern Channel abeam Newport Rock. The channel is reported to be maintained to a depth of 23.5m.

Pilotage.—Pilotage is compulsory. See Part G—Suez Canal Pilotage for details.

Vessels are recommended not to enter Suez Bay when the pilot boat is prevented from coming out due to foul weather. However, masters of vessels may call the SCA via radio to make other arrangements.

Limiting Values of Anchorage Berths in Suez Bay

Anchorage Berth No.	Maximum draft	Radius of swing area
Group A Anchorages		
1A	11.3m	274m
2A	11.3m	274m
3A	11.3m	274m
4A	11.3m	274m
5A	11.3m	274m
6A	11.3m	274m
7A	11.3m	274m
8A	11.3m	274m
9A	11.3m	274m
10A	11.3m	274m
Group B Anchorages		
1B	11.3m	290m
2B	11.3m	290m
3B	11.3m	290m
4B	11.3m	350m
5B	11.3m	290m
6B	11.3m	290m
7B	11.3m	350m
8B	10.7m	290m
9B	11.3m	290m
10B	11.3m	213m
11B	11.3m	198m
12B	11.3m	198m
13B	11.3m	213m
Group C Anchorages		
1C	7.6m	213m
2C	7.6m	213m
3C	7.6m	213m
4C	9.1m	305m
5C	7.6m	244m
6C	7.6m	183m
7C	7.6m	183m
8C	9.1m	213m
9C	9.1m	244m
10C	7.6m	183m
11C	7.6m	183m
12C	10.7m	244m
13C	10.7m	183m
14C	10.7m	183m
15C	7.6m	183m
16C	10.7m	183m
Group D Anchorages		
1D	—	360m
2D	—	360m
3D	—	360m
4D	—	260m
5D	—	260m

Limiting Values of Anchorage Berths in Suez Bay		
Anchorage Berth No.	**Maximum draft**	**Radius of swing area**
6D	—	230m
Group H Anchorages		
1H	12.6m	274m
2H	12.6m	274m

Regulations.—All ships underway in the roads shall conform to the International Regulations for Preventing Collisions at Sea. Other regulations are, as follows:

1. Navigation shall be limited to approved channels only.
2. Crossing or overtaking in the channels is expressly forbidden.
3. Vessels must proceed with caution and at reduced speed.
4. Vessels must not anchor except in designated anchorages.
5. Vessels proceeding S in Eastern Channel have priority. Northbound vessels should wait outside until the channel is clear.

Anchorage.—Numerous anchorage berths, allocated by the SCA, are available in Suez Bay, and are best seen on the chart. Limiting values of each berth are given in the accompany table titled **Limiting Values of Anchorage Berths in Suez Bay**.

For information on anchorages in the approaches to Port Suez S of Suez Bay see paragraph 1.8.

Caution.—A dangerous wreck, with its masts visible and marked close E by a lighted buoy, lies in Berth 7B.

A dangerous wreck, marked close N by a lighted buoy, lies close N of the Group C anchorages.

It has been reported (2015) buoys in the Newport Rock Channel may be located up to 225m from their charted positions.

As Suways (Port Suez) (29°58'N., 32°33'E.)

World Port Index No. 48040

1.14 Several berthing facilities are scattered about As Suways (Port Suez) and are described below.

Bur Ibrahim, the port for As Suways, is connected to the city by a causeway on which there is a railroad.

The harbor consists of a N basin and a S basin, separated by a central quay. The basins are fronted by breakwaters, through which there is an entrance 114m wide leading to the basins. An entrance channel to the basins has a least depth of 7.2m.

Range lights on the central quay, in line bearing 060°, lead into the harbor.

North Basin has over 737m of quayage with charted depths of 6.4 to 8.8m alongside. Outside this basin there are berths with at least 4m alongside.

South Basin, at the head of which there are drydock and repair facilities, has about 670m of quayage with charted depths of 6.5 to 8.5m alongside.

The central quay has numerous berths with depths up to 8.5m. South Quay, lying on the SE side of South Basin, is built of stone, with depths of 5.3m alongside.

A floating dock, approached by a channel dredged to a depth of 10m, lies just S of South Basin, and may best be seen on the chart.

Had el-Marakib (Qad el-Marakib), on the E side of the canal entrance, was described earlier in paragraph 1.11, with a least depth of 8.5m in its S portion.

Port Tewfik (29°56'N., 32°34'E.), on the W side W of the canal entrance, consists of South Basin, with depths of less than 4.5m. A channel E of South Basin leading to El-Dars Basin has been dredged to a depth of 6m; the basin has also been dredged to a depth of 6m.

Al Mina Al Jadidah (El-Mina El-Gadida) (29°57'N., 32°32'E.) is the area located NW of Bur Ibrahim. It is fronted by a detached breakwater marked by a light at each end.

The W side of the area is enclosed by a breakwater extending S from Petroleum Basin toward the entrance W of the detached breakwater.

The W entrance has a depth of 10m; the maximum depth of the E entrance is 5.2m.

Petroleum Basin is enclosed by breakwaters, except on its S side. The approach channel has depths of 5.7 to 8.3m. Vessels are urged to contact the local authorities for the latest information on this basin before attempting to berth here.

An offshore petroleum terminal is available about 2 miles SW of the Petroleum Basin. It has been reported that one berth is operational, with an alongside depth of 11.5m. The berth can accommodate a vessel up to 60,000 dwt, with a maximum length of 228m and a maximum draft of 10.3m.

Aspect.—Conspicuous chimneys, 70m high, stand among storage tanks about 0.4 mile N of Petroleum Basin.

Storage tanks extend along the N shore of Suez Bay for 1.5 miles W of Petroleum Basin.

A gray cooling tower and a chimney, both prominent, stand to the W of Petroleum Basin. A large factory and a green-gray concrete water tower stand 2 miles further WSW.

Regulations.—It has been reported (2013) that vessels calling at As Suways only for owner's matters (crew change, bunker supply, awaiting instructions, etc.) and intending to anchor in the W area must obtain written permission from the Red Sea Port Authority at least 24 hours prior to arrival. This permission should be submitted to the Suez Canal Authority in order for such services to be rendered.

Signals.—During gales from the S, which are liable to occur from October to March, a black flag is displayed by day, and three red lights, disposed vertically, are exhibited at night, at the signal station near the S corner of South Basin.

When As Suways is closed because of bad weather, two black cylinders, disposed vertically, are displayed by day, and a green light between two red lights disposed vertically, are shown at night, at the signal station at Port Tewfik.

Contact Information.—The port authority can be contacted, as follows:

1. Telephone: 20-62-331123
   20-62-603136
2. Facsimile: 20-62-331117

1.15 Junat al'Adabiyah (Adabiya Bay) (29°52'N., 32°28'E.) is entered NW of Ras el-Adahiya, in the SW part of

Suez Canal—Port Suez—Mosque close S of South Basin

Suez Canal—Port Suez—El-Dars Basin from S

Suez Canal—Port Suez—Entrance to Al-Mina Al-Jedida (New Harbor) from S

Suez Bay. Its S and W shores are fringed with a coral reef, while the bay is encumbered with rocks and shoals.

Al-Adabiyah (29°52'N., 32°28'E.) (World Port Index No. 48045) lies in the SW part of Junat al'Adabiyah. Two quays extend SE from the shore about 1.5 miles WNW of Ras Al-Adabiyah. The facilities are used mainly for the importation of grain. Berthing limitations are given in the accompanying table titled **Al-Adabiyah—Berthing Limitations**.

Junat al'Adabiyah affords good and sheltered anchorage, in depths of 8.2 to 14.6m, mud, about 1.5 miles WNW of Ras el-Adabiya. Two charted anchorage areas, designated No. 1 and No. 2, each have a swing radius of 213m and can accommodate vessels with a maximum draft of 11.3m.

Vessels anchor in Suez Bay in numbered berths as allocated by the SCA; these berths are best seen on the chart.

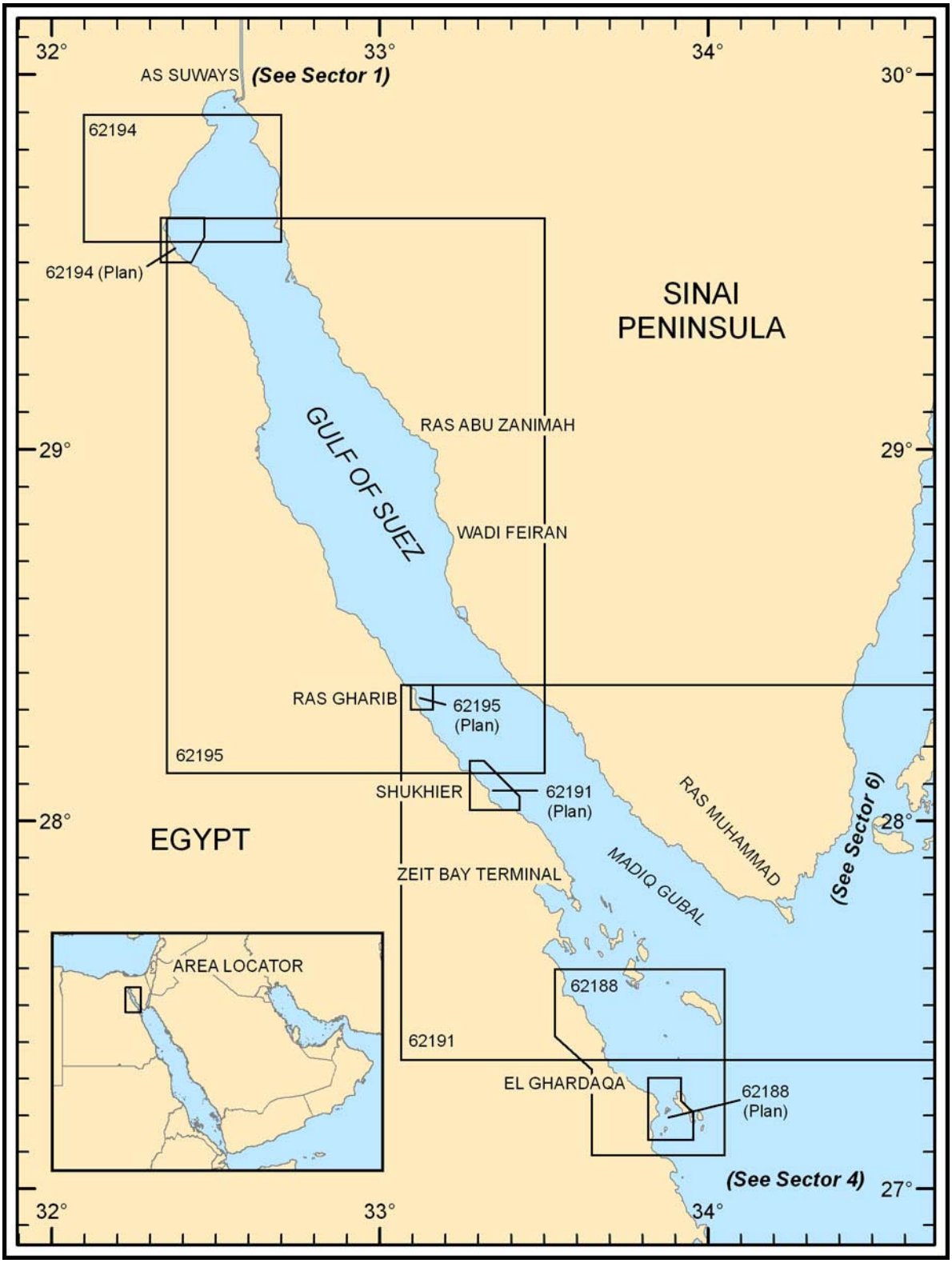
Vessels approach Al-Adabiyah with the head of the SW quay bearing 243°. When the light on Shab Ataqa is abeam, course may be changed as necessary for entering the harbor.

Ras al-Adabiyah (29°52'N., 32°31'E.) is described in paragraph 2.2.

Al-Adabiyah—Berthing Limitations

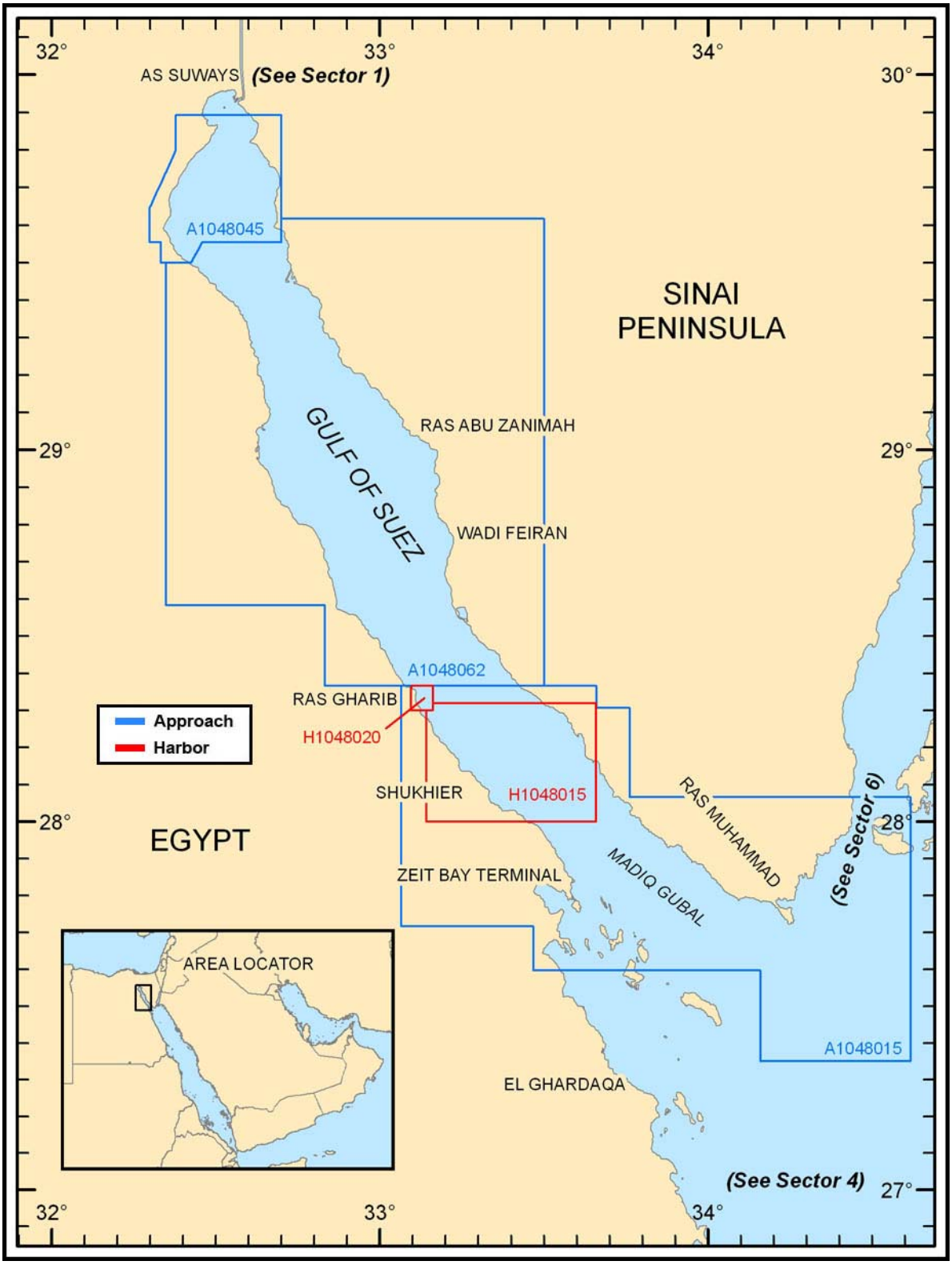
Berth	Length	Max. draft	Remarks
No. 1	80m	13.0m	Grain and naval vessels. See Note.
No. 2	350m	13.0m	General cargo. See Note.
No. 3	150m	13.0m	General cargo. See Note.
No. 4	215m	13.0m	General cargo. See Note.
No. 5	220m	13.0m	Grain and naval vessels. See Note.
No. 6	300m	13.0m	General cargo.
No. 7	100m	12.5m	Grain.
No. 8	150m	12.5m	General cargo.

Al-Adabiyah—Berthing Limitations			
Berth	**Length**	**Max. draft**	**Remarks**
No. 9	175m	12.5m	Containers.
Cement berth	100m	10.0m	
Note.—Vessels using these berths may only berth during daylight hours with their bows facing W.			



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **2** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 2 — DNC LIBRARY INFORMATION

SECTOR 2

EGYPT—THE GULF OF SUEZ

Plan.—This sector describes the Gulf of Suez (Khalij As Suways) from Bahr El-Qulzum to the Gazair Giftun, including Madiq Gubal.

The W shore of the Gulf of Suez, from Ras el-Adabiya to Gazair Giftun is described first. The E shore of the Gulf of Suez, from Ras Misalla to Ras Muhammad, is then described. The arrangement is generally SSE and SE from Bahr El-Qulzum.

General Remarks

2.1 Winds—Weather.—Winds from the N prevail in the Gulf of Suez most of the year. An occasional moderate S gale may occur during the period from December to March. The effect of N and NW wind is generally diminished close to the W shore, particularly in the vicinity of high land.

During strong NW winds in the gulf, it is usually calm during the day S of Jabal Ataqah, on the W side of Bahr El-Qulzum. At El Suweis, the N wind usually freshens late in the afternoon and continues until about midnight.

Tides—Currents.—Almost simultaneously, HW occurs in the gulf between El Suweis and **Kas Gharib** (28°21'N., 33°06'E.). It is HW in the S part of the gulf when it is LW at El Suweis. The tidal currents set N throughout the gulf while the tide is rising at El Suweis, and to the S when it is falling there.

Both currents set mid-channel, with a maximum velocity of 1.5 knots at springs and 0.5 knot at neaps, except in the vicinity of Ras Abu Darag, on the W side of the gulf, about 36 miles S of El Suweis; near Sheratib Shoals, on the E side of the gulf, 88 miles SSE of El Suweis; and off the islands in Madiq Gubal, where the direction is uncertain.

In Madiq Gubal, the current velocity is from 1.5 to 2 knots and sets N longer than S, but in the vicinity of the reefs, they frequently set toward them.

Aspect.—The Gulf of Suez is backed by high land, which in many cases closely approaches the coast and provides conspicuous landmarks. Both shores of the gulf are bordered by coral reefs; those on the E side extend a considerable distance from the shore, while on the W side they are, in general, quite close to the coast. A number of off-lying patches are scattered throughout the Gulf of Suez and in Madiq Gubal.

Regulations.—The IMO has approved a set of special Navigation Regulations in the Gulf of Suez, which is consistent with the volume of traffic transiting the area and special local conditions. The regulations apply to all vessels and are in addition to the International Regulations for Preventing Collisions at Sea. See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details.

Vessels in the Red Sea, bound for Egyptian ports, should do the following:

1. Request permission to enter Egyptian waters from the Port Authorities 48 hours prior to crossing the 23°N parallel.
2. Send ETA at least 24 hours in advance stating last port of call, position, course and speed.
3. Contact the Port Authorities when within 24 miles of the Egyptian coast for entry instructions.
4. Vessels in the Gulf of Suez should maintain a continuous listening watch on VHF channel 16.

No overtaking is permitted between latitudes 28°00'N and 28°20'N. Overtaking is also prohibited in the vicinity of rigs or oil fields.

The Gulf of Suez Traffic Separation Scheme has been established to separate southbound and northbound traffic. The scheme extends from a position about 5 miles S of Ras el Adabiya to a position E of Shaker Island. The scheme may best be seen on the appropriate charts. This is an IMO-adopted scheme.

Traffic lanes for westbound and southeastbound vessels, approaching and leaving, respectively, the Ain Sukhna Terminal join the main N separation zone and are indicated on the chart of the area.

All islands withing Egyptian territorial waters in the Red Sea are declared Protected Areas. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Vessel Traffic Service.—A Vessel Traffic Information Management System (VTIMS) operates in the Red Sea and the Gulf of Suez to provide navigation assistance and advice to shipping, as requested. Information on the VTIMS stations, which all operate 24 hours, is given in the accompanying table titled **Red Sea and Gulf of Suez Vessel Traffic Information Management System (VTIMS)**.

The VTIMS provides the following navigation assistance services to vessels in the Gulf of Suez area:

1. Automatic surveillance and tracking of vessels arriving at the Gulf of Suez approaches.
2. Automatic determination of arrival times at ports.
3. Automatic continuous tracking and monitoring of position and speed for all vessels transiting the Gulf of Suez.
4. Instantaneous information concerning vessels transiting the Gulf of Suez.
5. Compilation of a data base for vessel information, navigation rules, traffic flow, and navigation reports.
6. An efficient means of communications with vessels arriving at and transiting the Gulf of Suez.
7. Safe transit through the Gulf of Suez for vessels and cargo.

Participation in the VTIMS is compulsory for all vessels over 300 tons. Vessels should send the following information, via their agent, to the appropriate Vessel Traffic Center (VTC) 48 hours prior to arrival:

1. Vessel name and nationality, including any previous names.
2. Draft, beam, and dwt.
3. Whether vessel intends to transit the Gulf of Suez or berth/anchor in a port in the area. If the latter is the case, the length of stay should be given.
4. ETA.

5. Any dangerous cargo on board. If yes, state the quantity and class according to IMO regulations.

Vessels should request permission from the appropriate VTC to transit the Gulf of Suez not later 24 hours prior to the transit date. The request should contain the following information:

1. Vessel name.
2. Nationality.
3. Type of vessel.
4. Draft.
5. Gross tonnage.
6. Deadweight tonnage.

Vessels should contact the appropriate VTC on VHF channel 16, 2 hours prior to arrival at the Gulf of Suez TSS, stating the following information:

1. Position (latitude and longitude).
2. Gross tonnage and dwt.
3. Draft.
4. Whether vessel is loaded or mot.
5. Type of cargo.
6. Any defects affecting the safety of navigation.
7. If transiting the Gulf of Suez for the first time:
   a. Date of construction.
   b. Call sign or IMO number.
   c. Length overall.
   d. Beam.
   e. Type of engine.

When arriving at the VTIMS area, vessels should call the appropriate VTC, as follows:

1. Southbound vessels—All vessels departing the Suez Canal and approaching latitude 29°50'N should contact Ras el-Adabiya VTC on VHF channel 16 to receive instructions.
2. Northbound vessels—All vessels departing the Red Sea and approaching latitude 27°20'N should contact False Ras Gharib VTC on VHF channel 16 to receive instructions.

Vessels changing sectors within the VTIMS area should check in and check out with the appropriate VTC.

Vessels entering ports within the VTIMS area should report directly to the port on VHF channel 16 or the port calling channel and check out with the appropriate VTC.

Vessels leaving the VTIMS area should check out with the appropriate VTC.

In an emergency, vessels should contact the appropriate VTC on VHF channel 16 or the current working channel.

Anchorage.—There are several convenient anchorages in the Gulf of Suez for small vessels during bad weather. Nearly all are in the vicinity of coral reefs, and great care is necessary when approaching them. When possible, the sun should be kept astern.

During NW winds it is advisable to keep a moderate distance offshore when anchoring because of the possibility of an unexpected shift of wind.

The proper updated charts should he consulted before anchoring.

Caution.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details on areas dangerous due to mines.

Prudence and planning are essential to safely navigate the Gulf of Suez due to the high concentration of shipping using the Suez Canal, and the extensive offshore mineral exploration and exploitation operations in and about the seaway.

Numerous oil rigs and flares exist on both shores of the Gulf of Suez; many of the oil rigs and platforms are marked by lights and, in some cases, by racons. Many of these are temporary and the mariner should not rely on their charted position when navigating.

The following oil fields located in the Gulf of Suez are surrounded by restricted areas into which only authorized vessels may enter:

1. Zaafarana Oil Field (29°10.5'N., 32°41.6'E.).
2. East Tanka Oil Field (28°59.1'N., 32°56.8'E.).
3. October Oil Field (28°51.1'N., 33°04.3'E.).
4. North Amer Oil Field (28°49.2'N., 32°55.0'E.).
5. Belayim Oil Field (28°36.0'N., 33°08.0'E.).
6. Amer Oil Field (28°23.6'N., 33°05.7'E.).
7. Shab Gharib Oil Field (29°10.5'N., 32°41.6'E.).
8. Ramadan Oil Field (29°10.5'N., 32°41.6'E.).
9. July Oil Field (28°14.9'N., 33°15.4'E.).
10. Badri Oil Field (28°14.1'N., 33°27.0'E.).
11. Morgan Oil Field (28°11.3'N., 33°28.7'E.).
12. Nessim Oil Field (28°05.3'N., 33°32.4'E.).
13. South Belayim Oil Field (28°07.5'N., 33°38.3'E.).
14. Waly Oil Field (28°02.7'N., 33°36.2'E.).
15. Sidki Oil Field (27°56.6'N., 33°38.7'E.).
16. East Zeit Oil Field (27°52.3'N., 33°41.3'E.).
17. Shab Ali Oil Field (27°51.3'N., 33°52.1'E.).
18. Hilal Oil Field (27°50.2'N., 33°43.7'E.).
19. Ashrafi Oil Field (27°48.9'N., 33°43.5'E.).
20. Geisum Oil Field (27°38.3'N., 33°41.2'E.).

Red Sea and Gulf of Suez Vessel Traffic Information Management System (VTIMS)			
Vessel Traffic Center	**Contact Information**		**VTIMS Boundary**
North Sector VTC			
Ras el-Adabiya VTC (29°51'16.8N., 32°29'03.0"E.)	Call sign:	Ras el-Adabiya VTC	Northern boundary—A position about 5 miles S of Ras el-Adabiya (29°51'16.8"N., 32°29'03.0"E.). Southern boundary—Platform Delta 10 (28°37'13.2"N., 33°06'40.8"E.) at Ras Sheratib.
	Frequency:	VHF channels 16 and 20	
	Telephone:	20-62-3316340	
	Facsimile:	20-62-3316341 20-62-3316342	
	Telex:	581-462299912 ADBA X (INMARSAT-C)	

Red Sea and Gulf of Suez Vessel Traffic Information Management System (VTIMS)			
Vessel Traffic Center	**Contact Information**		**VTIMS Boundary**
South Sector VTC			
False Ras Gharib VTC (28°30'54.6"N., 32°57'39.6'E.)	Call sign:	False Ras Gharib VTC	Northern boundary—Platform Delta 10 (28°37'13.2"N., 33°06'40.8"E.) at Ras Sheratib. Southern boundary—A position E of Shaker Island (27°27'12.0"N., 34°02'12.0"E.).
	Frequency:	VHF channels 16 and 61	
	Telephone:	20-65-3626835 20-65-3626836	
	Facsimile:	20-65-3626670	
	Telex:	581-462299913 GHAR X (INMARSAT-C)	

Caution should be exercised when in the vicinity of oil fields as drill rigs, production platforms, submarine pipelines, and other various hazards, both above and below water, may be present. Entry into certain areas containing oil fields is prohibited.

Aids to navigation in the Gulf of Suez are reported to be unreliable. Aids may be missing, unlit, or off station. Vessels should navigate with particular caution.

The Gulf of Suez—West Shore

2.2 Ras al-Adabiyah (Ras Adahiya) (29°52'N., 32°30'E.) is the extremity of a low, sandy spit forming the SW entrance point of Bahr El-Qulzum. Ras al-Adabiyah is bordered by a shore bank which extends about 1 mile NE, N, and NW. The bank has depths less than 5.5m and the inner part dries.

A prominent stranded wreck lies about 0.3 mile ESE of Ras al-Adabiyah. A group of houses stands about 0.5 mile SW of the point.

Between Ras al-Adabiyah and Ras Abu el Darag (Ras Abu Darag), about 29 miles S, the coast recedes W to form a large bay. The S shore of this bay is backed by Gebel El-Galala El-Bahariya, a range extending about 22 miles inland.

Caution.—An extensive foul area, best seen on the chart, extends N and NE of Ras al-Adabiyah.

2.3 Ras Muhajjarah (29°49'N., 32°29'E.) is located about 3 miles SW of Ras al-Adabiyah. A radio tower stands 1 mile N of the point. A light, with a racon, is exhibited about 3 miles SW of the point.

Ras Sidat Terminal (29°46'N., 32°27'E.) is a permanently-moored storage tanker located 1.2 miles ESE of Ras Sidat. A submerged oil pipeline extends W from the tanker to the shore.

Sokhna Port Gas Tanker Terminal (29°41'N., 32°22'E.) (World Port Index No. 48035) is located about 6.5 miles SW of Ras Sadat Terminal. The channel approaching the terminal is 120m wide, with a dredged depth of 8m. The maximum draft permitted alongside is 7m.

2.4 North Ayn Sukhnah Port (Sokhna Port) (29°39'N., 32°22'E.) (World Port Index No. 48030) is located about 2.5 miles S of Sokhna Port Gas Tanker Terminal. The port presently consists of two basin but three more basins are planned to be added to the harbor.

Sokhna Port Home Page

http://www.dpworldsokhna.com

Depths—Limitations.—The harbor is reached from the E through a channel dredged to a depth of 18m and marked by lighted buoys. Two lighted breakwaters extend from the shore as the harbor is reached. The inner portion of the entrance channel and the turning basin have been dredged to 17m. Vessels up to 170,000 dwt can be accommodated.

The bulk terminal can accommodate two 30,000 dwt vessels or one vessel of 150,000 dwt.

The South Basin consists of a bulk liquid ammonia terminal, with a reported (2012) dredged depth alongside of 17m.

North Ayn Sukhnah Port—Berth Information		
Berth	**Length**	**Depth**
Northeast side of North Basin		
General cargo terminal	350m	17m
Bulk terminal	400m	17m
Southwest side of North Basin		
Container terminal	450m	17m
Fertilizer terminal	300m	17m
Liquid terminal	—	17m

Aspect.—A group of tanks stands NW of the quays. A port control tower stands N of the channel along the shoreline.

Range lights, in line bearing 270°, lead through the dredged channel between the breakwaters.

Pilotage.—Pilotage is compulsory for all vessels 50m long and over. Pilots board in the vicinity of Fairway Lighted Buoy.

Regulations.—The vessel's ETA should be sent, via the agent, 72 hours, 48 hours, and 24 hours prior to arrival. The ETA should also be directly confirmed with the pilot station.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Sokhna Port
2. VHF: VHF channel 12

3. Telephone: 20-62-3710071
4. Facsimile: 20-62-3710070
5. E-mail: dpwsokhna.commercial@dpworld.com

Anchorage.—Eight circular anchorage areas, designated S1 through S8 and best seen on the chart, for vessels waiting to enter the port, are located in an area E of the port.

Caution.—Mariners are cautioned that the area outside the channel is incompletely surveyed and that uncharted shoals may exist.

2.5 Ayn Sukhnah (29°35'N., 32°22'E.) (World Port Index No. 48055) consists of an open roadstead containing four Single Buoy Moorings (SBMs) and an anchorage area SE of the cargo berths.

Ain Sukhnah is a private port controlled by SUMED and is situated about 29 miles S of Suez. Crude oil is off-loaded from ships that are too large to enter the Suez Canal fully loaded. The oil is pumped in pipelines to Sid Kerir.

Winds—Weather.—Winds from the N are prevalent for most of the year, with few dust storms.

Visibility is usually excellent; fogs are infrequent and rainstorms rare. Summers are hot and dry, while winters are relatively cool.

Tides—Currents.—The mean tidal range at the port is 2.3m. The tidal current sets N on the flood and S on the ebb with a maximum drift of 0.5 knot.

Depths—Limitations.—Berth 1 and Berth 2 are located, respectively, about 2 miles ESE and SE of the coast. They can accommodate vessels up to 350,000 dwt, with a maximum draft of 22.8m. With special permission, Berth 2 can accept a vessel up to 400,000 dwt.

Berth 3 can accommodate vessels up to 150,000 dwt, with a maximum draft of 16.7m. However, vessels up to 200,000 dwt may be accepted with prior permission.

Berth 4 can accommodate vessels up to 500,000 dwt, with a maximum draft of 31.5m.

Charted depths at the berths may be reduced up to 5.2m by installations on the sea bed.

The Mooring Master will indicate if conditions are safe enough to pick up the mooring buoy at the berth and will warn the master when conditions warrant stopping the transfer operations, and/or vacating the berth. The limiting conditions at the mooring buoys are, as follows:

1. Maximum wind speed—35 knots.
2. Maximum tidal range—2m.
3. Maximum wave height—3.4m.
4. Maximum surface current—2 knots.
5. Maximum sea bed current—1 knot.

Aspect.—Two radio towers, 80m and 130m in elevation, stand 1 mile WNW and NW respectively, of the landing place of the pipelines. Numerous tanks stand between the radio towers and the coast.

Pilotage.—Pilotage is compulsory. A Mooring Master will board the vessel within 2 miles SE of SBM Lighted Buoy No. 4.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details on regulations pertaining to vessels in Egyptian waters and the Gulf of Suez.

Vessels should send an ETA message by telex (91-54033 SUMED UN or 91-54108 SUMED UN) to SUMED Alexandria, as follows:

1. Immediately on sailing from the loading port.
2. If there is a change in ETA exceeding 6 hours.
3. Seventy-two (72) hours, 48 hours, and 24 hours prior to arrival.

The terminal should be contacted by VHF 6 hours prior to arrival on VHF channels 78 and 79, if available, or on VHF channel 16.

Additionally, see the regulations described in paragraph 2.1. Shore leave is not permitted. Ship's engines should be ready for immediate maneuvering.

Signals.—The International Code of Signals Flag "B" shall be flown by day, and an all-around red light shall be displayed by night, during oil transfer operations.

Contact Information.—The terminal can be contacted, as follows:

1. Telephone: 20-62-3363071
2. Facsimile: 20-62-3360354

Anchorage.—Anchorage is available in the charted anchorage area SE of the mooring buoys, in charted depths of 38 to 54m, over a sandy bottom.

Directions.—Keeping in mind the IMO-adopted regulations for vessels sailing in the Gulf of Suez, vessels should observe the charted Traffic Separation Scheme, using the appropriate caution when joining, crossing, or leaving a traffic lane.

Caution.—Disused cables have been reported to lie in an area between the Traffic Separation Scheme and the port limits and also in the E portion of the anchorage. Vessels are urged to exercise the appropriate caution.

Vessels sailing between 29°25'N and 29°35'N are to coordinate their passage with the tankers proceeding to Ayn Sukhnah oil terminal.

2.6 Ras Abu el Darag (Ras abu Darag) (29°23'N., 32°34'E.) lies about 18 miles SE of Ain Sukhna. A light, with a racon, is shown from a white round concrete tower surrounded by white buildings standing close seaward of a ruined lighthouse.

From Ras Abu el Darag to Ras az Zafaranah, about 17 miles SSE, the coast is bordered by coral reefs extending as much as 1 mile offshore. A rocky spit extends about 0.5 mile offshore from a position 2.5 miles SE of Ras Abu el Darag; a similar spit extends from a position about 0.5 mile NW of Ras az Zafaranah. A conspicuous radio mast stands in an approximate position about 3.5 miles SSE of Ras Abu el Darag.

Ras az Zafaranah (29°07'N., 32°40'E.) is reported to give a good radar return up to a distance of 19 miles. The point is marked by a light with a racon.

Zaafarana Terminal (29°10'N., 32°41'E.) (World Port Index No. 48057), consisting of a moored offshore tanker, is located about 4.7 miles NNE of Ras az Zafaranah. Vessels up to 130,000 dwt, with a maximum length of 259m and a maximum draft of 16.7m, can be accommodated. Vessels should send their ETA 72 hours, 48 hours, and 24 hours in advance to the Egyptian General Petroleum Company and the terminal. The pilot boards in the anchorage in position 28°59.0'N, 32°41.6'E. The terminal can be contacted on VHF channels 8 and 16.

Between Ras az Zafaranah and Ras Gharib, about 51 miles SSE, there are some coastal indentations, but no prominent

land features. The coast is backed by an undulating desert plain rising gradually to the bases of mountains, which are about 3 to 20 miles inland.

Jabal Thilimet, in a position about 8 miles SW of Ras az Zafaranah, has four knobs and is a good landmark. A cairn stands on the summit. Some tanks standing close to the shore about 4 miles SE of the summit are conspicuous.

The high tableland of Gebel el Qalala el Qibliya, which extends SW from a position about 16 miles SW of Ras az Zafaranah, rises at its N end to Gebel Umm Zenetir. The NE extremity is a conspicuous nipple-shaped hill, 1,218m high, surmounted by a cairn, lying about 7 miles SSE of Gebel Umm Zenetir.

Gebel Umm Tenassib, about 26 miles SSE of Jabal Umm Zenetir, has a sharp conical peak at its S end.

Using caution, the coast between Marsa Thelemet and **Ras Gharib** (28°21'N., 33°06'E.) can be approached to within 1.5 miles.

Anchorage for small vessels with local knowledge can be taken at several places S of the coastal reef off Ras az Zafaranah.

2.7 **Mersa Thilimit** (29°03'N., 32°38'E.) is a narrow bight having a width of about 0.5 mile between the reefs bordering its sides. There is good anchorage in the bight, but caution must be used to avoid the reefs.

Range lights, in line bearing 302°, lead into the entrance of Mersa Thilimit. The range lights stand in the vicinity of a building at the head of the bight. Should the range be indistinguishable, a conspicuous peak at the N end of the hills behind the building, in range with the center of the building, will lead into the entrance on the same bearing.

When inside the reef, vessels should steer N and anchor E of the aforementioned building.

A pier, which dries, and is marked at each extremity by a light, stands S of Mersa Thilimit and is best seen on the chart.

Ras Rawahimi (28°44'N., 32°50'E.), in a position about 22 miles SSE of Mersa Thilimit, has a cove on its S side which is sheltered from N by a reef. The point is marked by a light with a racon.

An oil platform stands in the separation zone, between the traffic lanes, about 8 miles NE of Ras Rawahimi. A second oil platform stands on the E edge of the southbound traffic lane, about 6 miles ENE of the same position. A submarine pipeline extends from each platform to a point close N of Ras Rawahim.

Ras Abu Bakr (28°33'N., 32°56'E.), about 12 miles SSE of Ras Rawahimi, is fronted by a reef. A submarine pipeline extends about 20 miles NNE from Ras Abu Bakr to a production platform.

Caution.—An area close N of Ras Abu Bakr is declared dangerous due to mines.

Several oil rigs and flares burning waste oils stand near the coast between a position about 2 miles NNW of Ras Abu Bakr and Ras Gharib.

Amer Oil Field lies close offshore between Ras Abu Bakr and False Ras Gharib. Submarine pipelines connect the individual platforms to the shore.

2.8 A number of buildings and oil tanks stand in the vicinity of **False Ras Gharib** (28°29'N., 33°00'E.).

Ras Gharib (28°21'N., 33°06'E.), about 10 miles SE of False Ras Gharib, is a prominent coastal projection near the foot of a whitish-appearing range of low hills.

Shab Gharib Oil Field lies close offshore about 3 miles NW of Ras Gharib. Submarine pipelines connect the individual platforms to the shore.

Gebel Gharib, about 18 miles SW of Ras Gharib, is a solitary precipitous peak that at night can often be seen from the gulf and is a good landmark.

Caution.—A dangerous wreck lies in the southbound lane of the traffic separation scheme about 3.5 miles NNE of Ras Gharib.

2.9 **Ras Gharib** (28°21'N., 33°06'E.) (World Port Index No. 48020), the port lying immediately S of the coastal projection of the same name, comprises an open roadstead off a shore-based petroleum terminal. The terminal has three submarine pipelines extending to offshore berths for loading crude oil in the roadstead. All pipelines are in a charted area where unauthorized vessels are prohibited from navigating or anchoring.

Winds—Weather.—Winds from the N prevail during most of the year, force 3 to 5, with some calms in December and January. Gales from the S that are of short duration, occur on very rare occasions, but cause the anchorage to become untenable.

The N wind causes some swell in the anchorage but is not usually severe enough to interfere with the working of lighters.

Small boats can lay alongside the piers, which are well protected.

A moderate swell around the promontory of Ras Gharib is experienced on most days. Rain hardly ever falls and infrequent sandstorms do not interfere with work in the anchorage.

Tides—Currents.—The mean tidal rise is 0.4m; the spring rise is 0.5m.

Depths—Limitations.—No. 1 Berth (North Berth) will accommodate vessels up to 137m long, with drafts of 7.3m. No. 2 Berth (South Berth) will accommodate vessels up to 183m long, with drafts of 9.7m. No. 3 Berth (New South Berth) will accommodate vessels up to 299m long, with drafts of 16.7m.

A dangerous wreck and a 9.4m shoal lie, respectively, 0.5 mile SE and 0.5 mile E of North Berth.

Aspect.—Several oil rigs, both onshore and offshore, lie in an area about 3 miles N of Ras Gharib. Ras Gharib Light and the buildings of the terminal are conspicuous.

Pilotage.—Pilotage is compulsory; the pilots may be contacted through the harbormaster's office on VHF channel 2, 4, or 16. Vessels are boarded in the charted Waiting Area.

Regulations.—Berthing and unberthing are done during daylight hours only. Berthing may also be delayed by strong winds.

See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details on regulations pertaining to vessels in Egyptian waters and the Gulf of Suez.

Contact Information.—The harbormaster's office may be contacted on VHF channel 2, 4, or 16.

Anchorage.—The pilot will conduct the vessel to a suitable anchorage if conditions warrant it.

Directions.—Keeping in mind the regulations mentioned above, vessels should observe the Traffic Separation Scheme, exercising the appropriate caution when joining or leaving it.

The terminal proper should be approached from the SE, using caution, as the 20m curve is charted up to 1.5 miles off this section of coast.

Several lights and range beacons used by the pilot to assist in anchoring or berthing are available, but are difficult to identify until close inshore.

Caution.—A Prohibited Anchorage Area, best seen on the chart, lies between Ras Gharib and Ras Dib, about 25 miles SE; the coast is low and fringed by reefs. A vessel should not approach the shore closer than 1.5 miles or proceed into depths less than 22m. Along this stretch are a few 12.8 to 18.3m spots about 0.5 mile outside the 20m curve.

The light structure on Ras Shukheir is below the cliff line and is difficult to distinguish. At night the light is surrounded by brighter lights and is difficult to identify.

A Prohibited Anchorage Area, best seen on the chart, extends over almost the whole width of the Gulf of Suez, from a point about 2 miles S of Ras Gharib to a point about 3 miles S of Ras Shukheir.

Ramadan Oil Field, consisting of several production wells, lies about 9.5 miles NNE of Ras Shuqayr. July Oil Field (Yulyu Oil Field), lying 4 miles SW of the first field, lies within the Separation Zone and is connected to the W shore of the gulf by a submarine pipeline; a conspicuous flare marks the field. Badri Oil Field and Morgan Oil Field, both contained within a Prohibited Area and best seen on the chart, lie about 7 and 10 miles, respectively; SE of July Oil Field; a flare platform is located on the SW side of the Badri complex.

Uncharted oil and drill rigs may be encountered in this area, some of which may be placed temporarily within the Traffic Separation Scheme. Service vessels may be encountered crossing the Traffic Separation Scheme.

Vessels should avoid overtaking in the Precautionary Area off Ras Shukheir.

2.10 Ras Shukheir (Ras Shukhayr) (28°08'N., 33°17'E.) (World Port Index No. 48015), which is about 15 miles SE of Ras Gharib, consists of two offshore berths devoted to petroleum products, contained within a Restricted Area, and an offshore LPG terminal about 5.5 miles further SE.

Winds—Weather.—For most of the year the prevailing winds are from the NNW. It is strongest from May to August, when it occasionally reaches gale force. The swell raised by these gale winds makes use of the anchorage and the berths difficult.

Depths—Limitations.—Berth 1 can accommodate vessels of 229 to 305m in length, with a maximum draft of 19.5m. Berth 2 can accommodate vessels of 229 to 305m in length, with a maximum draft of 17.1m.

The LPG terminal, known as Berth 4, can accommodate vessels up to 1,600 dwt, with a maximum length of 100m and a maximum draft of 5.2m.

A small harbor for vessels not more than 70m in length is situated close SE of Ras Shukheir. The harbor, which has two piers, has general depths of about 9m, and is obstructed by a bar with a depth of 5.2m. Large cargo vessels anchor outside the harbor to lighter.

Aspect.—Ras Shukheir rises in gravel cliffs to a height of 77m. A group of brown tanks stands on top of the cliffs. There are numerous oil tanks and other oil installations at the foot of the cliff. The point is marked by a light. A conspicuous flare burns intermittently about 1 mile SSE of the light. A buoyed channel leads to Berth 4.

Pilotage.—Pilotage is compulsory and is available during daylight hours only. The pilot boards in position 28°09.5'N, 33°20.4'E.

Regulations.—Berthing is accomplished during daylight only, but vessels must request permission to berth at night. Unberthing takes place day or night.

Vessels are required to send their ETA to the terminal operators through Alexandria Coast Radio Station (SUH) or Port Said Coast Radio Station (SUP) 72 hours in advance and maintain contact until arrival at the terminal. The ETA should also be sent to PANINTOIL Cairo, and repeated to GUPCO Cairo, 72 hours, 24 hours, and 12 hours prior to arrival. Six hours prior to arrival, the vessel should contact the terminal on VHF channel 16.

The vessel's last confirmation message should contain an estimate of the time required by the vessel to discharge ballast, which is pumped ashore.

Vessels leaving the terminal and intending to use the northbound traffic lane should inform other vessels of their intentions on VHF and should enter the northbound traffic lane only when there is no southbound traffic in the vicinity.

All vessels proceeding in or out of the terminal, including vessels serving the oil fields, should cross the southbound and northbound flow of traffic only through the charted Precautionary Area.

See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details on regulations pertaining to vessels in Egyptian waters and the Gulf of Suez.

Contact Information.—The terminal may be contacted on VHF channels 2, 4, and 16.

Caution.—Vessels should observe the Precautionary Area off the port and the limits of the charted oil fields, as may best be seen on the appropriate chart.

Caution is advised as this anchorage lies within the middle of the gulf and exposed to all winds. A wreck, with a depth of 33m, lies just NW of the anchorage. Vessels should take the greatest care in approaching this anchorage and sail for it via the Precautionary Area off the port.

The terminal operators report that if the vessel is directed to anchor within the vicinity of the oil berths, vessels should never anchor to the N of the berth. Vessels should anchor at least 0.25 mile from the edge of the traffic lane.

Keeping in mind the IMO-adopted regulations mentioned in paragraph 2.1, observe the Traffic Separation Scheme charted in the gulf. Watch for heavy cross traffic, especially within the Precautionary Area, and remember to remain at least 0.5 mile S of the southbound Separation Line.

2.11 Ras Dib (28°02'N., 33°25'E.), at the N end of Jabal az Zayt, is marked by a light. A radar conspicuous wreck lies 1.5 miles WNW of the light.

Between Ras Dib and Umm al Kiman, about 15 miles SSE, the coast is fringed by a reef. Jabal az Zayt (Gebel el-Zeit), which rises from 0.5 to 1 mile inland and appears as islets from a distance, backs the coast along this sector. The summit of this range is about 8 miles SSE of Ras Dib and the S end of the range forms a peninsula.

Ras az Zayt, in a position about 7.5 miles SSE of Ras Dib, projects slightly from the coast. Several submarine pipelines, contained within a Prohibited Anchorage Area, extend across the S portion of the gulf, and are best seen on the chart.

Umm Al Kiman (27°50'N., 33°35'E.) is a low sandy islet on the S part of a coral reef, the E edge of which lies about 0.3 mile offshore; a coast guard station is on the islet. A large flat roofed building stands on the point W of Umm al Kiman.

Close SW of Umm al Kiman is a bight, with the ruins of several stone buildings near its shores. To the W of the bight is a hill surmounted by a beacon.

From the mainland abreast Umm al Kiman to **Franken Point** (27°14'N., 33°51'E.), about 39 miles SSE, the coast is bordered by reef, outside of which are innumerable islands, shoals, reefs, and channels. To the S of the peninsula at the S end of Jabal az Zayt, the coast is generally low. The peninsula is connected by a reef to Jazirat Ghanim, low and sandy, about 0.6 mile SSE.

2.12 Zeit Bay Terminal (27°50'N., 33°36'E.) (World Port Index No. 47985) consists of a Single Buoy Mooring (SBM) located about 1 mile ESE of Umm al Kiman.

Suez Oil Company Port Home Page

http://www.suco-eg.com

Winds—Weather.—The weather is Zeit Bay is normally good. The visibility is usually excellent, with few dust storms and infrequent fog.

The winds are generally NNW and are steady from May to October, with a maximum speed of 45 knots, although between June and September winds are almost non-existent. Gales can be expected from the NW between October and May.

Depths—Limitations.—The berth will accept vessels up to 240,000 dwt, with a minimum length of 167.6m, a maximum length of 198m and a maximum allowable draft of 25.9m. The vessel's trim should not exceed 2m by the stern.

Aspect.—The SBM is colored yellow and has a light.

Pilotage.—Pilotage is compulsory. The pilots board in the charted Waiting Area located about 1.2 miles SE of the terminal.

Regulations.—Vessels should send their ETA 72 hours, 48 hours, and 24 hours in advance to Suez Oil Company (SUCO) Cairo.

Vessels should contact the terminal (call sign: Zeit Bay Radio) 12 hours and 6 hours prior to arrival on VHF channels 12 and 16.

Berthing, which may be prevented by winds greater than 25 knots, is accomplished in daylight only, and must be completed by 1600. Unberthing may be done at any time.

Contact Information.—SUCO Cairo can be contacted, as follows:

1. Telephone: 20-2-23466377
   20-2-23465909
2. Facsimile: 20-2-33035434
   20-2-33462571
3. E-mail: suco@suco-eg.com

Anchorage.—A waiting anchorage, which is also used by vessels at East Zeit Bay Terminal, is located in Bughaz el-Zeit, and may best be seen on the chart. The anchorage, which is 1 mile in radius, shows charted depths of 20 to 38m, over a bottom charted as coral, holding quality unknown.

2.13 East Zeit Terminal (27°51'N., 33°36'E.) (World Port Index No. 47987), about 1.2 miles N of Zeit Bay Terminal, consists of a Single Buoy Mooring (SBM).

Winds—Weather.—Information on winds and weather can be found with Zeit Bay Terminal in paragraph 2.12.

Depths—Limitations.—The terminal accepts vessels up to 130,000 dwt, but no less than 35,000 dwt. Vessels up to 255m long can be accommodated but the distance between the vessel's bow and its manifold can be no greater than 137m. The maximum allowable draft 18.3m.

Pilotage.—Pilotage is compulsory. The pilots board in the charted Waiting Area located about 1.2 miles SE of Zeit Bay Terminal.

Regulations.—Vessels should send their ETA 72 hours, 24 hours, and 12 hours in advance to EXPLORESSO through Port Said Coast Radio Station (SUP) or El Quseir Coast Radio Station (SUK); vessels should include the details of any equipment required to connect the tanker to the 0.3m floating hose.

Vessels should contact the terminal (call sign: East Zeit Terminal), 4 hours before arrival on VHF channel 13. The terminal should be contacted before approaching if it is necessary to use the Waiting Area.

Vessels should arrive trimmed 1.2 to 1.8m by the stern.

Vessels are berthed during daylight hours only. Unberthing can be done at any time.

Anchorage.—A waiting anchorage, which is also used by vessels at Zeit Bay Terminal, is located in Bughaz el-Zeit, and may best be seen on the chart. The anchorage, which is 1 mile in radius, shows charted depths of 20 to 38m, over a bottom charted as coral, holding quality unknown.

2.14 Ghubbat Az Zayt (27°47'N., 33°31'E.), on the SW side of the peninsula, is bordered by a bank extending as far as 0.4 mile offshore in places.

From Ras al Bahr, the SW entrance point of Ghubbat az Zayt, a reef extends about 0.8 mile E and 1 mile N.

A spit, with a depth of 2.3 to 5.5m, extends about 1 mile NNW of the latter reef.

The entrance channel leading into Ghubbat az Zayt has a least depth of 7.3m and is about 0.2 mile wide between the reef extending E from Ras al Bahr and the foul ground extending S from the peninsula.

2.15 Zeit Bay LPG Terminal (27°48'N., 33°34'E.) (World Port Index No. 47989) has been established on the NE shore of Ghubbat Az Zayt.

Suez Oil Company Port Home Page

http://www.suco-eg.com

Information on winds and weather can be found with Zeit Bay Terminal in paragraph 2.12.

The terminal can accommodate vessels up to 2,500 dwt, with a maximum length of 108m and a maximum draft of 8m. Berthing may be delayed if the wind speed exceeds 19 knots.

Berthing and unberthing are allowed during daylight hours only.

Pilotage is compulsory. Pilots board in the charted Waiting Area located 3 miles S of Zeit Bay Terminal.

The vessel's ETA must be sent 72 hours, 48 hours, and 24 hours in advance to Suez Oil Company (SUCO) Cairo. Contact information is given in paragraph 2.12.

Caution is advised as the approaches to the bight pass through an oil field, best seen on the chart.

2.16 Ras Jamsah (27°38'N., 33°35'E.) rises in yellowish and white hills to an elevation of 81m, with several buildings charted on it. A small jetty projects from the E side of the peninsula, about 0.7 mile NNW of the peninsula's S end. The peninsula is reported to give a good radar return up to a distance of 22 miles.

Reefs, on which Umm al Heimet and Umm al Heimet Saghira lie, extend about 10 miles SSE from **Geziret Ghanim** (27°46'N., 33°36'E.). A second string of reefs, among which is Shab Jamsah, extends about 5 miles SSE from Ras Jamsah.

A third string of reefs, interspersed with islets and boulders, extends about 7 miles in the same direction from a point W of Ras Jamsah. The channels between these reefs and between the reefs and the islands to the E are quite intricate.

Anchorage.—Jamsah Anchorage, E of Ras Jamsah and N of Shab Jamsah, has depths of 7.3 to 14.6m. It is exposed to N winds, which generally create a nasty sea.

Kibrit Anchorage, about 0.6 mile SE of Ras Jamsah, between Shab Jamsah and Shab Barok, affords good anchorage, in 6.4 to 16.5m. A beacon stands about 0.1 mile within the SE end of Shab Barok.

Gebel Ush (27°30'N., 33°33'E.), a double peak, is located about 2 miles from the coast. It is the highest peak in the coastal range, which terminates in Gebel Abu Shar al Qibli, about 10.5 miles SSE.

Gebel Ushsh is reported to give a good radar return up to a distance of 25 miles.

The Gulf of Suez—Islands and Dangers off the West Shore

2.17 Juzur Ashrafi (Guzur Ashrafi) (27°47'N., 33°42'E.) consists of three reefs, with several islets, 1.8 to 4.5m high, composed of dead coral and sand, on the two W reefs.

The reef to the E consists of three patches, the S one of which is about 2 miles long and covered at LW. The two N patches are narrow and separated by a shallow passage.

A disused light structure, a red iron framework tower, 43m high, stands on the SE end of the N patch. A stranded wreck lies 1 mile NW of the disused light structure. A small pier is near the base of the above tower.

Lighted platforms stand 0.7 mile ENE and 1.5 miles W of the abandoned lighthouse.

A light is reported to be shown from the SE end of about the middle patch. The light structure is reported to give a good radar return up to a distance of 14 miles.

Shab Mukowarat (27°47'N., 33°41'E.), the central reef of Juzur Ashrafi, is about 6 miles in length, with several islets on its N part and **Sandy Islet** (27°43'N., 33°43'E.), 2m high, near its S extremity.

Vessels with local knowledge and a draft not exceeding 3.7m can obtain anchorage in a natural basin in the reefs entered from E, a little more than 1 mile N of Sandy Islet. Within this basin there are depths of about 3.7 to 12.8m, sand.

The height of the water in this locality is considerably affected by the wind. The tidal currents within 2 miles of these reefs are very uncertain in direction.

Qaysum ash Shamaliyah (North Qaysum) (27°42'N., 33°41'E.) is flat with a small hill, 17m high, about 0.3 mile S of its NE extremity.

Quaysum al Janubiyah (South Qaysum) extends S and SW from a position about 1 mile SE of Sandy Islet. The island is low and sandy with a 30m hill at its NE end and an 18m hill about 2 miles farther SW; the former is conical and dark brown while the latter is white and sandy.

The N part of this island has white sandy cliffs. A beacon marks the end of a reef extending E from the E extremity of the island.

Jazirat Jubal, about 3 miles SE of Qaysum al Janubiyah, rises in its NE part to a round summit, 121m high; the E side of the island is steep-to. The island is a good landmark.

Shab Jubal extends about 3 miles NNW from the N end of Jazirat Jubal and is marked on its NW edge by a beacon.

Jazirat at Tawilah (27°35'N., 33°44'E.) is low, flat, and composed of coral. The summit in the E portion of the island is topped by a cairn. Shab Abu Shayban, close SE, covers at HW.

2.18 Gaziret Shakir (Shadwan Island) (Shaker Island) (27°30'N., 34°00'E.) is high and rugged, with the hills, cut up by ravines, having rather steep sides.

From a distance, the island appears flat. Gaziret Shakir is reported to give a good radar return up to a distance of 17 miles. A stranded wreck lies on the island's E shore.

Approaching Gaziret Shakir closer than 1.6 miles by day and 3.25 miles by night is prohibited. This regulation does not apply to shipping using the Traffic Separation Scheme NE of the island.

Anchorage is obtainable off the SW side of Gaziret Shakir, 5.5 miles WNW of Gaziret Shakir Light, with shelter from N winds, in a depth of 11m, sand and coral, but this is a prohibited area.

Shab Umm Ush (27°35'N., 33°53'E.) covers at LW. The edges of this reef are clearly visible during daylight and, except for two 3.7m patches lying within 0.5 mile of its W and NW sides, there are no off-lying dangers.

Blind Reef, about 2 miles SSE of Shab Umm Ush, is very narrow, steep-to, and not clearly visible.

2.19 Shab el Erq (Shab el Erg) (27°24'N., 33°52'E.), about 9 miles WSW of the SE extremity of Gaziret Shakir, is a crescent-shaped reef, covered at HW. Melana Beacon stands on the N end of Shab el Erq.

Shadwan Channel (27°35'N., 33°50'E.) is entered from N between Jazirat Jubal and Shab Umm Ush, 3 miles SE. It extends 4 miles SSW, then 12 miles SE, and enters the Red Sea between the SE end of Gaziret Shakir and Umm Qamar Island, 9 miles SW.

A small detached reef, about 0.2 mile in diameter and which dries, lies 3.5 miles SSE of the S end of Jazirat Jubal in the fairway of Shadwan Channel. It has been reported that this reef does not exist.

The channel is deep and free from dangers in the fairway, except for the small reef mentioned earlier. As NW winds prevail in this area, vessels of low power may use it with advantage when proceeding N.

Shadwan Channel should be used in daylight only, but many convenient anchorages are available for use by night.

The Gulf of Suez—East Shore

2.20 Ras Misalla (29°49'N., 32°36'E.) is low and sandy. A detached shoal, with a least depth of 5.5m, lies about 1 mile NW of Ras Misalla.

Conry Rock (29°49'N., 32°35'E.), with a least depth of 6.7m, lies about 1.5 miles SW of Ras Misalla. Patches with depths of 6.9m and 9m lie, respectively, 0.5 mile NE and 1.5 miles E of the rock.

The coast between Ras Misalla and Ras Sudr, 14 miles S, is fringed with coral reefs. Vessels are advised to remain outside of the 30m curve if sailing outside of the Separation Lane on this side of the gulf.

Ras Sudr (29°36'N., 32°41'E.) is low, sandy, and bordered by reefs. An 18.3m patch lies about 3.5 miles WSW of the point, while an air field marked by masts showing aircraft warning lights is situated on the point.

South Shoal (29°39'N., 32°36'E.), a detached shoal having three heads and a least depth of 10.6m, lies about 5 miles NW of Ras Sudr. A wreck, with a least known depth of 7m, lies SE of South Shoal, about 2 miles NW of Ras Sudr.

Caution.—A dangerous unsurveyed wreck, with a least known depth of 7m, lies about 3.5 miles WNW of Ras Sudr.

2.21 Ras Sudr Oil Terminal (29°35'N., 32°42'E.) (World Port Index No. 48053), an offshore oil terminal, lies about 1.5 miles SE of Ras Sudr. There are several oil tanks, buildings, water tanks, and a small pier on the shore of this bight. Two towers stand about 5 miles ESE of Ras Sudr.

The maximum tidal range is about 0.6m.

Winds from N prevail throughout the year. South winds are most likely to occur in winter and spring, accompanied by heavy squalls.

The oil berth consists of a stage, secured to mooring buoys, which is connected to the shore by pipelines for oil and water; there is a depth of 7.9m at the berth. Vessels of 17,000 to 30,000 dwt, with a maximum length of 167m long and a maximum draft of 9.1m, can be accommodated.

The vessel's ETA should be sent, via the agent, 7 days in advance and confirmed 72 hours and 24 hours prior to arrival. The ETA message should include, in addition to the vessel's ETA, the following information:

1. Type and quantity of cargo to be loaded/discharged.
2. Arrival drafts forward and aft.
3. Any other requirements.

Anchorage may be obtained in the bay SE of Ras Sudr, 1 mile offshore, in depths of about 13m.

Gebel Sinn Bishr is a conspicuous white cliffy mountain, about 16 miles ENE of Ras Sudr, in a break in the apparently table-topped Gebel el-Tih. The latter is a tract of high comparatively table-topped land, which terminates in bold steep slopes on this side of the peninsula. It extends to the E for nearly two-thirds of the distance across the Sinai Peninsula, in about latitude 29°10'N.

2.22 Ras Matarimah (29°27'N., 32°43'E.) lies about 9 miles SSE of Ras Sudr. The point, which is low and sandy, has a drying reef extending about 0.5 mile S. Much discolored water has been observed near this point.

Two towers, the SE one of which is black and conspicuous, stand on the hilly slopes about 6 miles E of Ras Matarimah. A flare is charted 8 miles NE of the point.

Qad Malab, with a least depth of 1.2m, extends about 2 miles from shore between Ras Malab and Ras Lagiya (Ras Lagia), about 4 miles NW.

Ras Malab (29°12'N., 32°55'E.), about 18 miles SSE of Ras Matarimah, is low and sandy. The white buildings of a gypsum mining company and a black water tower, 9m high, stand close E of the point and shows up well. Gypsum is loaded S of the point. Discolored water has been observed in the vicinity of Ras Malab.

A small pier for use of lighters and local craft is E of the point; there is also a pipeline for loading oil. There are mooring buoys close ESE of the pier.

A pair of beacons, in range 333°, stand close W of the above small pier. A large prominent rock, resembling a sawed-off tree trunk, stands about 1 mile E of the pier.

Vessels should approach this bight with Gebel Hammam Faraun ahead bearing 070°. When the prominent rock mentioned above bears 040°, steer for it on that bearing until the beacons are in range.

Vessels anchor with both anchors down on a SSE heading with their sterns secured to bollards near the root of the pier.

Jebel Thal is sometimes mistaken for Gebel Hammam Faraun. The front beacon of the 333° range is also reported to be inconspicuous.

2.23 Gebel Hamman Farun (29°11'N., 32°59'E.), about 3 miles SE of Ras Malab and close to the coast, has a precipitous bluff on its W side which is conspicuous from SE. A cairn stands on the peak. A short distance S is Jabal Thal, a sharp peak.

The range of hills a little N of Gebel Hamman Farun are white and noticeable, but from there N the mountains are some distance inland with few prominent features.

Between Ras Malab and Ras Abu Zenima, about 13.5 miles SE, the coast is backed by Gebel Hamman Farun and Jabal Thal in its N part.

Extending SE from these peaks and close to the coast is a series of small mountain ranges, mostly of white chalk.

These gradually decrease in elevation and terminate W of the dark **Jabal Samra** (28°59'N., 33°16'E.).

About 10 miles SE of Ras Malab is the W extremity of a tract of low hills, terminating in a scarp 73m high. This range is so close to the coast that the sea washes its base.

Close S is the mouth of a wadi, marked by dark basaltic rocks, which show up well against the surrounding limestone.

Ras Abu Zenima (29°03'N., 33°06'E.), low and composed of gravel, is backed by a flat sandy plain. It is fringed by reefs, which dry in places, and extends nearly 0.5 mile from shore.

2.24 Abu Zanimah (29°02'N., 33°07'E.) (World Port Index No. 48060), an ore-loading port, is entered between Ras

Abu Zenima and Cairn Point, about 2 miles ESE. The bay, sheltered from NW and N winds, has general depths of 18.3 to 25.6m.

Tides—Currents.—The tidal range is 1.2m.

Depths—Limitations.—The ore pier, about 1 mile ESE of Ras Abu Zanima, has an L-head with a length of 48m. Except during S winds, vessels up to 40,000 dwt and with a maximum draft of 10m can lie alongside the L-head of the ore pier, with bows to the W, using anchors, lines to the shore, and buoys fore and aft to secure to.

Aspect.—The bay is backed by a rugged mass of hills which rise to the mountains farther inland; one of these, about 3 miles E of Ras Abu Zenima, is 309m high, white, square-topped, and conspicuous. Gebel Matalla, 296m high, is detached and stands about 2.5 miles NE of Ras Abu Zenima.

A remarkable round hill, 48m high, lying close NNW of Cairn Point, has well-defined layers and a flat summit marked by a cairn.

Regulations.—Vessels will usually be met by an official of the mining company, who will advise as to mooring or anchoring.

The vessel's ETA should be sent, via the agent, 7 days in advance and confirmed 72 hours and 24 hours prior to arrival. The ETA message should include, in addition to the vessel's ETA, the following information:

1. Type and quantity of cargo to be loaded/discharged.
2. Arrival drafts forward and aft.
3. Any other requirements.

Directions.—Vessels entering should keep a conspicuous round hill, 48m high, about 0.2 mile NNW of Cairn Point, bearing 082° until the ore pier bears 018°. Course can then be altered for the anchorage. A lighted range, in line bearing 012°, leads to the pier.

Anchorage.—Good anchorage can be taken, in 21.9 to 25.6m, sand and mud. During strong S winds, the anchorage is untenable and landing is often impracticable.

Caution.—From September to May, S winds make the anchorage untenable.

The coast from a position about 4 miles ESE of Cairn Point is backed by a plain about 4 miles wide and extending about 12 miles S. The hills approach the coast at the S end of this plain, and for about 15 miles farther S the coast is low at distances of 1 mile to 4 miles inland. Light-colored hills rise again, about 11 miles S of Jabal Samra, gradually increasing in height, and join Gebel Abu Darba, about 27 miles S. A 491m peak, about 3.5 miles NNE of Gebel Abu Darba, is a good landmark.

2.25 Ras Badran Oil Terminal (Ras Budran) (28°57'N., 33°10'E.) (World Port Index No. 48025) consists of a Single Buoy Mooring (SBM) contained within the prohibited anchorage area.

Winds—Weather.—The climate at the terminal is good. Visibility is usually excellent, with few dust storms or rain showers and infrequent fog.

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Winds are predominantly from the NNW at about 20 knots during the summer, but may increase to as much as 45 knots, especially between October and May. Winds are almost insignificant between June and September.

Depths—Limitations.—The SBM can accommodate vessels of 30,000 to 250,000 dwt, with a maximum draft of 18m and a length of 152 to 345m.

A shoal patch, with a depth of 12.6m, was reported to lie 1.5 miles SE of the SBM.

A jetty, 120m long and protected by a breakwater, projects from the shore near Ras Badran, and will accept alongside drafts of 6.5m.

Pilotage.—Pilotage is compulsory. The pilot boards about 2.5 miles SSW of the SBM.

Regulations.—Vessels berth during daylight hours only. Vessels may unberth at any time.

Vessels may not berth if wind speeds are greater than 25 knots.

Vessels should send their ETA to Suez Oil Company (SUCO) Cairo 72 hours, 48 hours, and 24 hours in advance. Vessels should contact the terminal 12 hours and 6 hours prior to arrival on VHF channel 12.

Contact Information.—SUCO can be contacted, as follows:

1. Telephone: 20-2-23466377
   20-2-23465909
2. Facsimile: 20-2-33035434
   20-2-33462571
3. E-mail: suco@suco-eg.com

Anchorage.—A waiting anchorage for vessels to berth is to be obtained, in depths of 29 to 51m, good holding ground, within the area indicated on the chart 3.5 miles S of the terminal. Anchorage outside the area is prohibited.

Caution.—Caution should be exercised when approaching the mooring as numerous oil platforms, including East Tanka Oil Field and October Oil Field, are connected to each other and the shore by submarine pipelines in an area within about a 10-mile radius of Ras Badran.

A prohibited anchorage area, best seen on the chart, encloses several offshore structures in the vicinity of Ras Badran.

At **Ras Abu Rudeis** (28°54'N., 33°10'E.), about 3 miles S of Ras Badran, are some conspicuous oil tanks and an airfield.

2.26 Wadi Feiran Terminal (28°45'N., 33°13'E.) (World Port Index No. 48065) is a petroleum-loading terminal consisting of three submarine pipeline berths lying about 9 miles S of Ras Abu Rudeis.

Depths—Limitations.—There are three offshore berths for tankers connected with the shore by submarine pipelines. Vessels are berthed with their anchors down and secured to mooring buoys. Two spar buoys are moored close NW of No. 1 Berth and No. 2 Berth.

No. 1 Berth can accommodate tankers of 105,000 dwt, with a maximum length of 274m and a maximum draft of 16.1m.

No. 2 Berth can accommodate tankers of 50,000 dwt, with a maximum length of 244m and a maximum draft of 12.2m.

No. 3 Berth, used for LPG, can accommodate tankers of 20,000 dwt, with a maximum length of 190m and a maximum draft of 5.2m.

Care is required when berthing during S winds; during periods of strong winds, berthing may be delayed.

Aspect.—Several conspicuous oil tanks stand on shore. An opening in the light-colored hills shows up well against the dark ranges further inland.

Pilotage.—Pilotage is compulsory; berthing and unberthing are normally carried out during daylight hours only. Pilots board about 1 mile SW of No. 1 Berth.

The pilots may be contacted (call sign: Abu Rudeis) on VHF channels 6, 8, and 16 and should be contacted when within VHF range.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for regulations pertaining to vessels in Egyptian waters.

Vessels should send their ETA via their agent 72 hours and 24 hours in advance.

Contact Information.—The facility can be contacted, as follows:

1. Telephone: 20-2-22621739
   20-2-22621740
2. Facsimile: 20-2-22609792

Anchorage.—Anchorage is available about 2 miles W to SW of the terminal, in a depth of 31m, sand.

Directions.—Vessels should approach the berths from W, with the tanks bearing not more than 090°, to avoid the shoal water N of the port.

2.27 Ras Sharatib (28°40'N., 33°12'E.) is reported to be low and sandy. A mooring buoy is located about 1.4 miles WSW of the point; a submarine gas pipeline extends E from the mooring buoy to the shore.

From the W side of the gulf, the massive summit of **Jabal Sirbal** (28°39'N., 33°39'E.) and Jabal Umm Shawmar, about 23 miles farther SE, may be seen above the hills near the coast.

Caution.—Belayim Oil Field, lying about 5 miles SW of Ras Sharatib and best seen on the chart, contains shoal water and oil rigs which present a hazard to navigation. It is surrounded by a restricted area in which anchoring and fishing are prohibited.

2.28 Al Balaim (28°34'N., 33°15'E.), a lagoon entered through a 0.9m channel lying about 8 miles SSE of Ras Sharatib, has a maximum depth of 14m in its center. Tidal currents run strongly through the entrance.

Jabal Abu Durbah, close SE of the entrance to Al Balaim, has a 449m high rounded summit. Two conspicuous white patches lie near the shore, about 3 miles SE of Jabal Abu Durbah; four oil tanks stand on the coast about 2 miles further SE.

Both Jabal Abu Durbah and Jabal Abu Huswan, a 677m peak lying 6 miles SE, appear as islands from a distance.

The coast from abreast Jabal Abu Durbah is backed by a coastal range for a distance of about 23 miles in a SE direction. This range lies close-to and parallel with the shore and terminates in Jabal Hamman Saiydna Muse (Gebel Hammam Saidna Musa).

Jabal Musa (Mount Sinai), 2,285m high, about 36 miles E of Gebel Abu Daba, is generally obscured by other mountains, except from a position near **Ras Malab** (29°12'N., 32°55'E.).

Caution.—Many banks and shoal patches lie off this section of coast, some of which lie within the northbound Traffic Separation Lane. All vessels, especially deep-draft vessels, should use the appropriate caution when transiting the fairway from a point about 24 miles S of Marsa Wadi Firan to Madiq Jubal.

2.29 Tor Bank (El-Tor Bank) (At-Tur Bank) (28°15'N., 33°23'E.), extending in a SE direction from a position centered about 10 miles NE of **Ras Shuqayr** (28°08'N., 33°17'E.), has a least charted depth of 7.3m.

A 12.8m patch and a 20.5m patch lie within the Precautionary Area off Ras Shuqayr.

Moresby Shoals (28°10'N., 33°27'E.), with a least depth of 5.5m, lies SE of Tor Bank.

Felix Jones Patches (28°04'N., 33°36'E.), with a least reported depth of 8m, lie about 10 miles SE of Moresby Shoals.

Caution.—Bardi Oil Field, Morgan Oil Field, oil platforms, and other associated structures and dangers are located within a restricted area and a prohibited anchorage area, which encompass most of the dangers listed above. Both areas are best seen on the appropriate chart.

Vessels serving the oil fields on Tor Bank and using the Ras Shukheir Terminal, previously described in paragraph 2.10, should cross the traffic lanes only through the Precautionary Area and should time their transit to avoid impeding any traffic in the traffic lanes.

Vessels should avoid overtaking in the vicinity of Tor Bank from Felix Jones Patches until N of July Oil Field (28°16.3'N., 33°14.7'E.).

2.30 El Tur Harbor (28°14'N., 33°37'E.) (World Port Index No. 47982), a small fishing and pilgrimage port with an inner and outer harbor, is partially sheltered on its W and SW sides.

Depth—Limitations.—A pier used by offshore oil-service vessels is 75m long, with a depth of 6m alongside.

Aspect.—A conspicuous white mosque stands at the head of the harbor. A conspicuous 24m high tower stands on the SE side of the port.

Leading beacons, in range 095°, stand near the shore SE of the boat harbor. These beacons are not visible until almost in range, when they appear in a gap in the trees. Lights, vertically disposed, are shown from these beacons during the pilgrimage season or by request.

Bey Beacon, 11m high, stands on the center of Irq Riyah. A stranded wreck, on a S heading and marked by a light, lies close SW of Bey Beacon. This wreck, which has the appearance of a vessel at anchor, obscures the beacon to vessels approaching from W.

Pilotage.—Pilotage is compulsory. The pilot boards in position 28°13.6'N, 33°35.0'E.

Regulations.—Vessels should send their ETA, via the agent, 72 hours, 48 hours, and 24 hours prior to arrival and confirm their ETA at the pilot boarding position.

Contact Information.—The port authority can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 20-69-3770563
3. Facsimile: 20-69-3770592
4. E-mail: redseaut@idscl.gov.eg

Anchorage.—The harbor does not have enough room for large vessels, and often during the pilgrimage season it is overcrowded with small vessels.

There is anchorage within the harbor, in 10.9m, mud and sand, with Grafton Beacon, located at the end of a reef extending S from the W entrance point of the harbor, bearing 230°, about 0.2 mile.

Anchorage can also be taken, in about 18m, good holding ground, about 0.2 mile S of Grafton Beacon. This anchorage is exposed to NW winds.

The boat harbor is sheltered from all but S winds.

Directions.—Vessels entering by the N channel, which leads N of Irq Riyah in a least depth of 10.9m, should steer on the 095° range to a point about 0.1 mile S of Grafton Beacon. Then haul to the N, keeping the beacon about 0.1 mile distant until E of it, and then proceed to the anchorage. It should be borne in mind that the depths within the harbor shoal abruptly.

Vessels entering by the channel E of Irq Riyah, which has a least depth of 20.1m in the fairway, must rely on Bey Beacon and the coastal reef, as Irq Riyah is barely discernible. Grafton Beacon should be steered for on a bearing of 348°, until about 0.1 mile S, then proceed as directed above.

Caution.—There are several patches, with depths of 10.9 to 18.3m, lying within 4.5 miles W through S of the inner harbor.

Irq Riyah, sheltering the harbor from the SW, is a drying coral reef. Depths less than 9.1m extend about 0.5 mile N and 0.5 mile S, respectively, from the center of the reef.

This reef neither breaks nor shows discoloration, and it should be approached with caution. A 5.5m patch and a 5.8m patch lie about 0.5 mile SSW and 0.5 mile SW, respectively, of the boat harbor.

2.31 The coast between El Tur and Ras Muhammad, at the S end of the Sinai Peninsula (Shibh Gazirat Sina), is backed by a sandy plain, which rises gradually to a height of about 305m at the base of the mountains about 12 miles inland. This plain also extends NW for a considerable distance between the coastal range and the mountains inland.

Qurayn Atut (28°09'N., 33°52'E.), a dark sugarloaf peak about 479m high, lies about 14 miles ESE of El Tur and is a good landmark. Jabal Mazraiyah, with a rugged top about 16.5 miles farther SE, is another conspicuous landmark.

This latter peak, when seen from W, has the appearance of an outcrop of rock with three small peaks about midway between the coast and the inland mountain range.

Shaykh Riyah (28°09'N., 33°40'E.), in a position about 5 miles SSE of El Tur, affords sheltered anchorage, in 9.1 to 12.8m, sand. The W side of this inlet is formed by a low sandy point, which projects S from the coast for about 0.4 mile, and is fringed on its W and S sides by a reef.

A detached shoal, with a least depth of 3.9m, lies about 0.5 mile SE of the extremity of the above sandy point. The passage between the detached shoal and the coastal reef E is about 0.3 mile wide, with a least depth of 14.2m.

Caution.—A 7.3m patch lies about 3 miles SW of Shaykh Riyah; it lies near the N end of a bank with depths of 9.1 to 18.3m. Between Shaykh Riyah and Ras Kanisah, about 17.5 miles SE, drying reefs and other submerged dangers extend up to 2.5 miles from the coast.

Oil production platforms, best seen on the chart, are also located off the coast.

2.32 Between the low and sandy **Ras Kanisah** (27°56'N., 33°53'E.) and Ras Muhammad, about 24 miles SE, the coast is bordered by coral reefs which extend, in some cases, about 5.5 miles offshore.

The depths in the vicinity of the dangers are very abrupt and soundings give very little warning of the proximity of reefs.

During daylight, the change in the color of the water from deep blue to bright green is quite apparent.

Poynder Shoal (27°55'N., 33°44'E.), with a depth of 5.5m, lies about 8 miles W of Ras Kanisah.

Caution.—A prohibited anchorage area extends over the whole of the gulf off this section of the coast, and is best seen on the chart.

2.33 **Marsat Al Qadi Yihya** (27°55'N., 33°54'E.), entered between Ras Kanisah and Ras al Millan, about 4 miles SE, has several shoals in its entrance. It is sheltered on its W side by a reef extending about 1 mile ESE from Ras Kanisah and on its SE side by Shab ad Daqiyiq.

Shab Rayyis, awash at LW, consists of two patches connected by shoal water and lies in the entrance of this bay. The best channel into the bay lies N of Shab Rayyis.

The passage E of Shab Rayyis has several 1.8 to 3.6m patches in it, which render it intricate to traverse.

Mersa Zaraba (27°50'N., 34°00'E.), about 3.5 miles SE of Ras al Millan, is a bight in the coastal reef. The entrance of this bight, with a least depth of 10.9m, lies between two detached 5.5m patches off the SE end of Shab Al Megeeda and a reef about 0.4 mile farther E.

Shab Ali (27°50'N., 33°50'E.), the outermost danger off this part of the coast and separated from the coast by Inner Channel, consists of numerous coral reefs and shoals.

Azov Patch, with a depth of less than 1.8m, lies near the NE end of Shab Ali, in a position about 2 miles SW of Ras Kanisah.

2.34 **Shag Rock** (27°46'N., 33°53'E.), the southernmost rock of this group, is 1m high. A line of breakers has been reported to extend S of the rocks. A stranded wreck lies close NW of Shag Rock. During thick weather vessels should pass Shab Ali at a safe distance, as depths of about 36m lie within 2.5 miles to the W.

A stranded wreck lies on the W edge of Shab Ali, about 6 miles NW of Shag Rock. This wreck was reported to be quite conspicuous, with its hull and stack plainly visible, and was said to be easily mistaken for a vessel underway.

A dangerous wreck lies in the S entrance of Inner Channel, about 3.5 miles NNE of Shag Rock.

Inner Channel (27°50'N., 33°53'E.) is about 1.5 miles wide and may be safely used by day. A bank, with depths of 12.8 to 18.3m, extends across the channel between Shab Ali and Shab ad Daqiyiq.

Vessels approaching from the N should take care to avoid Poynder Shoal; a good lookout should be kept for detached rocks, especially in the vicinity of Azov Patch.

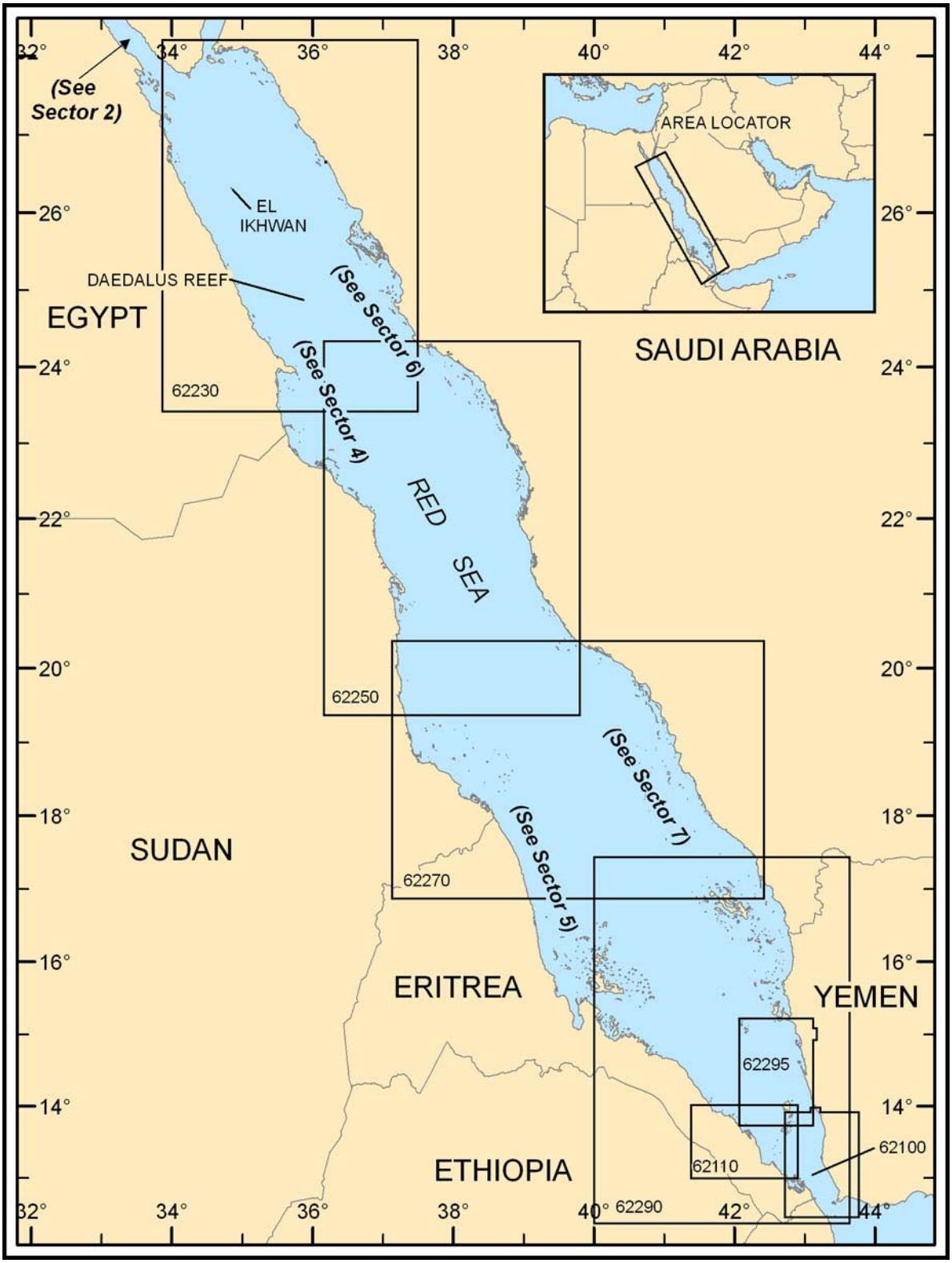
An oil field, consisting of several production platforms and a conspicuous flare, lies on the E side of Shab Ali and may best be seen on the chart.

Several lighted beacons have been established in Inner Channel, including Shag Rock and Ras Kanisah. The platforms are

also lighted.

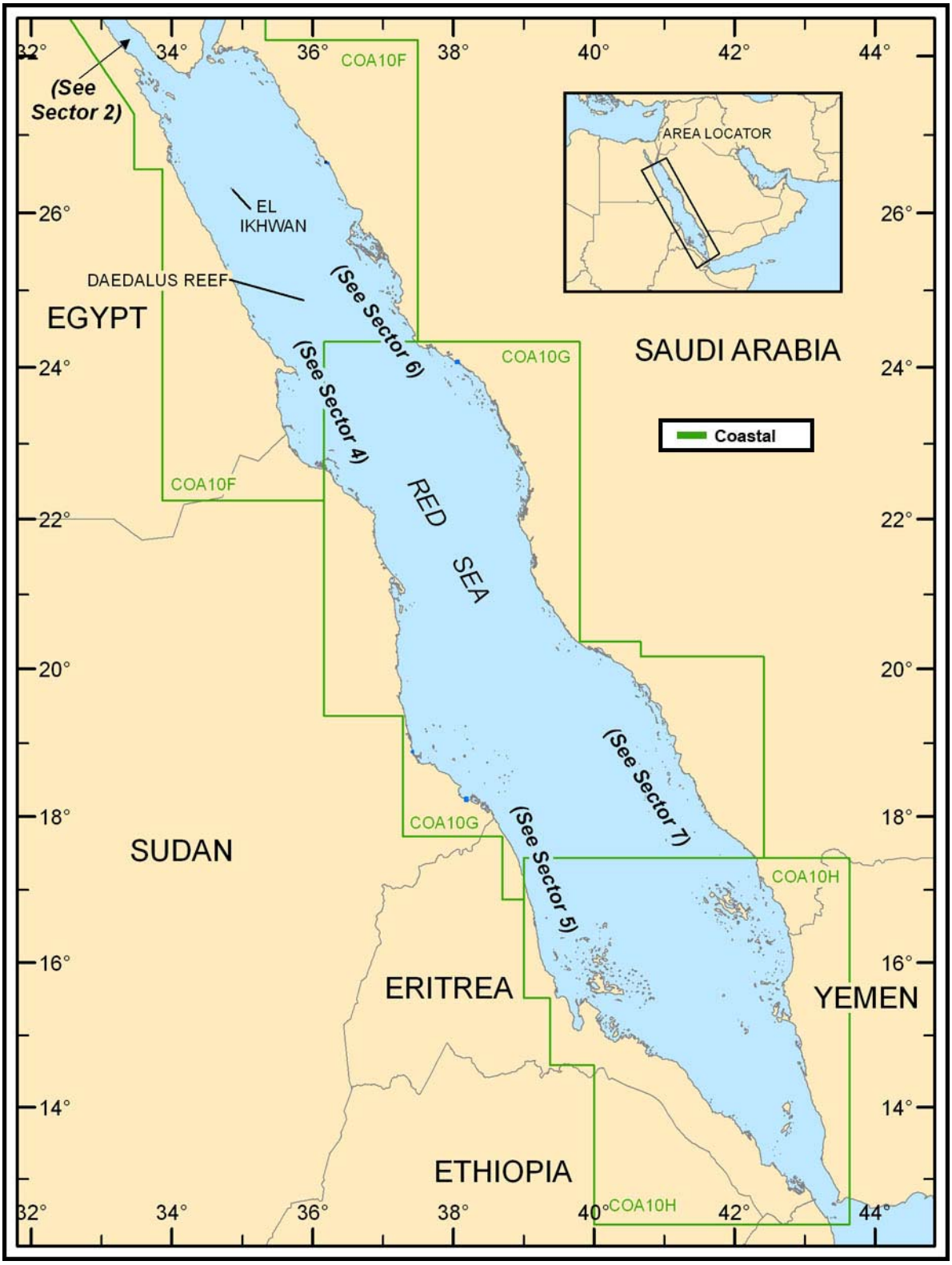
Anchorage is prohibited in Inner Channel, but temporary anchorage can be taken off the S end of Shab Ali, near Shag Rock, in 27 to 37m.

2.35 Madiq Gubal (Strait of Jubal) (27°40'N., 34°00'E.) forms the junction between the Gulf of Suez and the Red Sea. It is about 6 miles wide at its narrowest part and is bordered by innumerable shoals and reefs.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **3** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 3 — DNC LIBRARY INFORMATION

SECTOR 3

THE RED SEA—CENTRAL PASSAGE

Plan.—This sector describes the principal islands and dangers lying in Central Passage in the Red Sea between Madiq Gubal and Ras Bab al Mandeb. The descriptive sequence is from NNW to SSE.

General Remarks

3.1 Central Passage through the Red Sea from Madiq Gubal as far as Jabal Attair, about 830 miles SSE, is free from dangers, but the direct course passes much closer to the E side of the Red Sea than the W.

It is advisable, therefore, to steer from near Daedalus Reef for a position about midway between the coastal banks, from where a vessel can proceed to Jabal Attair.

Ships using the central track should keep in depths over 183m until about 28 miles from Jazirat Jabal Zuqar if making for Qanat Abu Ali (Abu Ali Channel), but if intending to pass W of that island they should not proceed into depths less than 183m until W of the N extremity of Jazirat al Hanish al Kabir, the largest island of Jazair Hanish.

Winds—Weather.—In the Red Sea N of 20°N, the wind is mainly from between NW and N in all months. Over the remainder of the sea such winds are predominant from May to September; from October to April, the wind is mainly from between S and SE.

There is no record of any cyclone having entered the Red Sea, and thunderstorms are infrequent, as is rainfall. It is extremely hot from June to September and the heat, combined with the high humidity in the S part of the Red Sea during these months, makes the climate oppressive.

Tides—Currents.—Currents setting in any direction may be experienced throughout the year in the main shipping track of the Red Sea. The velocity of the majority of currents experienced in any direction does not exceed 1 knot, and only on rare occasions does it exceed 2 knots. Currents in the vicinity of islands near the central passage will be described with their related features.

Mean sea level is about 0.2m higher in January and about 0.2 to 0.3m lower in August and September, but meteorological conditions, barometric pressure, and wind may cause local variations.

Vessel Traffic Service.—A Vessel Traffic Information Management System (VTIMS) operates in the Red Sea and the Gulf of Suez to provide navigation assistance and advice to shipping, as requested. Further information on the VTIMS can be found in paragraph 2.1.

Caution.—Unconfirmed reports were received concerning explosions, possibly caused by mines, near ships in the area of Ras Bab al Mandeb. Additionally, a vessel was believed to have struck a mine at position 18°25'N, 40°10'E. Another vessel was reported to have struck a mine in the position 26°48'N, 34°39'E. No further reports have been received concerning mining activities in the Red Sea. The areas concerned are believed to be safe for surface navigation. However, vessels are urged to exercise the appropriate caution.

Cross currents, setting in E or W directions, are not infrequent and are observed both in the middle of the central passage and elsewhere. A good berth should be given to all outlying reefs and shoals; this is most important, as the velocity of these currents increases rapidly as the reefs are approached.

Caution is particularly necessary when approaching Madiq Gubal from S, and when proceeding S from the vicinity of the Suakin Archipelago to Jazirat Az Zuqur.

In mid-channel of Madiq Gubal, the velocity of the tidal current is from 1.5 to 2 knots, but within 2 miles of the reefs the direction is uncertain. There appears to be no perceptible tidal current elsewhere until near Ras Bab al Mandeb.

All islands withing Egyptian territorial waters in the Red Sea are declared Protected Areas. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Islands and Dangers in Central Passage

3.2 **El-Ikhwan** (El Akhawein) (The Brothers) (26°19'N., 34°51'E.), consisting of North Islet and South Islet, are nearly steep-to. They are separated from each other by a channel about 1 mile wide. El-Ikhwan is reported to give a good radar return up to a distance of 15 miles.

The channel between the islets has depths of about 73 to 344m. Both islets are fringed by reefs. A depth of 5.5m extends about 137m NW from the NW extremity of South Islet.

Abnormal refraction has enabled these islets to be seen from a distance of 100 miles.

On the SW side of North Islet, there is an iron pier, 55m long, which extends to the reef On the SE extremity of the same islet, there is a bollard to which vessels can secure during N winds, riding by a single line.

A light, with a racon, stands on North Islet.

Tides—Currents.—When passing the islets, especially at night, it is prudent to give them a fairly wide berth, as currents occasionally set W in their vicinity.

3.3 **Abu el Kizan** (Daedalus Reef) (24°56'N., 35°52'E.) sometimes dries during LW but is always covered at HW. It is steep-to and may be passed on either side.

A light, with an iron pier extending from it, stands on the SW end of the reef. A racon is located at the light.

Abu el Kizan is reported to give a good radar return up to a distance of 14 miles. It is a poor target when bearing 250°.

An area of discolored water was reported to lie approximately 60 miles SSE of Abu el Kizan.

Tides—Currents.—Between Abu el Kizan and El-lkhwan, a vessel experienced a current setting NE at a velocity of about 0.5 knot.

Caution.—The coral reefs surrounding El-Ikhwan and Abu el Kizan have been declared protected areas. Anchoring on the reefs is prohibited except in an emergency.

Abu el Kizan (Daedalus Reef) Light from E, distant 3 miles

El-Ikhwan from NW

3.4 From Abu el Kizan to Jabal Attair, about 660 miles SSE, the central passage is clear of dangers. A direct course between these two places passes much closer to the E shore of the Red Sea, than the W shore.

To keep more nearly in the middle of the passage, it is advisable to steer for a position in 17°00'N, 40°40'E, which is about midway between the banks off-lying each shore, and then proceed to Jabal Attair.

Abnormal magnetic variation has been observed along a line extending from a position 28 miles E of **Elba Reef** (22°00'N., 37°00'E.) to a position about 60 miles N of Elba Reef.

3.5 **Jabal at Tair** (15°33'N., 41°50'E.) has a large central peak which is brown in color. The other peak is conical in shape on some bearings; there is a steep rocky yellow bluff on the SE side of the island. Sulfurous jets of steam appear at the summit of the island, but no smoke has been seen in recent years.

From NW and SE, the island appears high and conical, sloping gradually toward the coasts. It is steep-to and a good landmark.

Jabal at Tair is reported to give a good radar return up to a distance of 20 miles. It could be mistaken for a ship. A light is situated on the island.

The coastal banks, with less than 183m, lie about 11 miles E and 9 miles W of this island. Navigation is dangerous within the outer edges of these banks. Abnormal magnetic variation has been observed within a distance of 5 miles from the island.

Tides—Currents.—A current setting NW and NNW, at a velocity of about 2 knots, was experienced for 5 days, about 12 to 16 miles N and E of Jabal at Tair; a strong SSE wind was blowing at the time.

During December, the currents have been observed to set between Jabal Attair and Jaza'ir az Zubayr in an E direction at a velocity of nearly 1 knot. During May, they have been observed to set between NW and NE at a velocity of from 0.5 to 1 knot. During June, little or no current has been observed in this area.

Anchorage.—From the beginning of May to the end of August, with the prevailing winds from the NW and WNW, anchorage can be taken off the S side of Jabal at Tair, in 29.3m, with the E and W extremities of the island bearing 062° and 273°, respectively.

The nearest danger to this berth has a depth of 5.5m and is about 0.4 mile distant. Discolored green water appears to ex-

tend from some distance offshore, with a bottom of white sand, but no depth of less than 10.1m has been found.

There is very little current at this anchorage.

Caution.—A major volcanic eruption occurred on the island in late 2007. It has been reported that the W part of the island has collapsed. Vessels are urged to use extreme caution when navigating in this vicinity.

3.6 Jaza'ir az Zubayr (15°03'N., 42°10'E.) are a group of islands, islets, and rocks extending about 13 miles in a SSE direction. This group is rugged and almost entirely devoid of vegetation, except Saba Island, on which are a few stunted bushes.

Jaza'ir az Zubayr were reported to lie between 1 mile and 2.5 miles SW of their charted positions.

Quoin Islet (15°12'N., 42°04'E.) is of a light brown color. It is not easily distinguishable at night and if passing close to this group, a good lookout should be maintained. Deep water is about 0.2 mile off it. A depth of 20m lies about 0.6 mile SSW of the islet.

Haycock Island (15°10'N., 42°07'E.) is rather steep-to. Two patches of 35 and 16.5m lie between this island and Quoin Islet.

Rugged Island, Table Peak Island, Saddle Island, and Low Island all lie on a rocky bank having depths less than 37m.

This bank extends to within about 0.5 mile SW of Haycock Island. A small group of rocks, the highest of which is 25m high, lies a little less than 0.5 mile WNW of the NW side of Saddle Island. A rock, 7.9m high, lies about 0.5 mile E of the S extremity of Low Island.

These islands are fringed by banks, with less than 5.5m over them, which, in places, extend as much as 0.5 mile offshore.

There is a least depth of 9.1m in the fairway between Rugged Island and Table Peak Island and a least depth of 6.4m between the latter island and Saddle Island. The bottom is sand, coral, and shells. On the bank E of Saddle Island and Low Island is a least depth of 6.4m.

Saba Island (15°05'N., 42°09'E.) has two prominent hills, both having craters. Two lagoons, connected to the sea, are fringed with mangroves. The island is bordered by a reef which extends nearly 1 mile SSW. Connected Island lies on the S edge of this reef, and Shoe Rock, 5.2m high, is on the SE edge of the reef in a position about 0.5 mile NE of Connected Island. Saba Island is reported to give a good radar return up to a distance of 20 miles.

Caution.—Volcanic activity has been reported (2012) between Quoin Island and Jabal Zubayr. Depths may be shoaler than charted and vessels are advised to avoid this area.

3.7 Jabal Zubayr (15°04'N., 42°10'E.) has a central hilly range extending from the N extremity of the island to its S end; North Peak, a little over 0.5 mile from the N extremity of the island, is square-shaped.

A 224m conical hill, about 0.3 mile N of the S extremity of the island, is the summit of this range. A stranded wreck lies close S of the island.

Centre Peak Island, the S island of the Jaza'ir az Zubayr group, is steep-to. Some water tanks stand on the beach of a small bay on its SW side. A 172m hill, the highest on the island, has a disused light structure standing on it, about 0.5 mile N of the S end of Centre Peak Island. Another disused light structure stands at an elevation of 158m on the SE end of the island. A light is shown on the islet.

The channel between Centre Peak Island and Jabal Zubayr is about 0.5 mile wide and has a least depth of 12.8m. A current, caused by local winds, is sometimes strong.

Centre Peak Island is reported to give a good radar return up to a distance of 19 miles.

Tides—Currents.—In the vicinity of Avocet Rock and Ras Mujamilah, about 18 miles NE, little or no current has been experienced during October, November, and December, although S winds were blowing almost constantly.

During the Northeast Monsoon, there is often a heavy sea from about 15 miles N of Jazair Abu Ali to about 15 miles NW.

Anchorage.—From the beginning of May to the end of August, during the prevailing NW winds, anchorage can be taken, in 21.9m, mud, with the disused light structure near the center of Centre Peak Island bearing 240°, distant about 0.5 mile. During August, vessels should not lie here during the night, as squalls of rain and wind from the SE sometimes occur at sunset.

At other times of the year, with prevailing SSE winds, anchorage can be taken, in 14.6 to 18.3m, in the middle of the channel between Saba Island and Jabal Zubayr.

The best position is with the E extremity of Saba Island bearing 000°, the N extremity of Jabal Zubayr bearing 071°, and Shoe Rock nearly in range with the N extremity of Connected Island.

This channel has a least width of about 0.1 mile in the fairway. With SW winds, which are frequent during the winter, this anchorage is open to wind and sea and is not recommended.

Caution.—Middle Reef, with depths of less than 1.8m, lies in a position about 2 miles E of Low Island. It is narrow and steep-to; the sea breaks over it with any swell.

3.8 East Rocks consists of one rock, 1.5m high, and a rock, with less than 1.8m, on which the sea breaks, about 183m farther NW; they lie about 3 miles NE of North Peak on Jabal Zubayr and are steep-to within 183m.

Williamson Shoal, about 1.5 miles SSW of East Rocks, has a least depth of 10.1m. Evans Rock, a pinnacle with a depth of 7.3m, lies about 1.5 miles E of the S extremity of Jabal Zubayr. A small steep-to coral shoal, with a depth of 5.5m, lies about 0.7 mile SW of Evans Rock.

Shark Shoal, about 2.5 miles SE of the SE extremity of Centre Peak Island, has a least depth of 12.8m, coral. There are often reports of tide rips in the vicinity of this shoal.

South Shoal, with a least depth of 25m, lies about 2 miles SSE of the SE extremity of Centre Peak Island.

Penguin Shoal lies about 11 miles to the ESE of the SE extremity of Jabal Zubayr; it is a small steep-to rocky patch, with a depth of 6.4m.

Caution should be exercised in this vicinity as it has not been closely examined. Similar shoals may be close by. The passage E of Jaza'ir az Zubayr is not recommended.

Avocet Rock (14°22'N., 42°42'E.) is a small steep-to coral patch, with a least depth of 5m.

Jazair Hanish

3.9 The islands comprising these groups are dark brown volcanic hills with rocky eminences of various shapes. Jazirat Jabal Zuqar, Jazirat al Hanish as Saghir, and Jazirat al Hanish as Kabir are the principal islands.

Jazair Abu Ali (14°05'N., 42°49'E.) are barren and, being whitish-brown in color, are not easily seen at night. Reefs and rocks border this group as far as 91m offshore.

Jazair Abu Ali are reported to give a good radar return up to a distance of 17 miles. Quoin Island is marked by a light and reported to give a good radar return up to a distance of 10 miles.

An islet, 1.8m high, whose N end lies about 0.1 mile SSW of the W extremity of Quoin Island, has some sunken rocks close off its N and S ends; shoal water extends about 0.1 mile E from its S extremity.

The channel between this islet and the SW side of Quoin Island should not be used. A bank, with a depth of 23m, lies about 3.5 miles NE of Quoin Island.

Pile Island, 87m high, lies about 0.1 mile NE of Quoin Island and is composed of two parts joined by a reef. Pile Island is fringed by rocks and reefs on its N and W sides, is almost steep-to on its E side, and is inaccessible.

Anchorage.—Anchorage, in 16.5m, sand and coral, can be taken between Pile Island and Quoin Island with the light structure on Quoin Island bearing 270°, distant approximately 0.3 mile. This anchorage is considered safe only from the middle of May to the middle of December during the prevailing NNW winds.

Occasional wind and rain squalls from the SE occur in August, and vessels are advised not to remain at the anchorage when they take place. At other times of the year this anchorage is unsafe.

Regulations.—IMO-adopted Traffic Separation Schemes (TSS) lie on either side of Jazair Hanish. One is located in the waters E of Jazirat Jabal Zukar; the other is located in the waters W and S of Jazirat al Hanish Al Kabir. Both schemes are best seen on the chart.

The following recommendations are made regarding the use of each TSS:

1. Northbound vessels approaching Jazair Hanish from Bab al Mandeb are requested to use the northbound traffic lane of the TSS located E of Jazirat Jabal Zukar.
2. Southbound vessels approaching Jazair Hanish from the Red Sea are requested to use the southbound traffic lane of the TSS located W and S of Jazirat al Hanish Al Kabir.

Following these recommendations will minimize the amount of vessel crossing traffic in the Precautionary Area located at the N entrance of the Bab al Mandeb Traffic Separation Scheme.

3.10 Qanat Abu Ali (Abu Ali Channel) (14°04'N., 42°48'E.), between the NE side of Jabal Zuqar and the SW side of Quoin Island, is deep and free from dangers in the fairway; it has a navigable width of about 2 miles.

Vessels should keep in the middle of the channel, as tidal currents here are very irregular and occasionally set across it.

At night or in hazy weather, the high land of Jabal Zuqar often has a peculiar distant appearance and East Point, being low with white sand behind it, may then resemble water and not be identified until dangerously close to it.

Vessels from either direction should keep in mind the rocks SW of Quoin Island and the dangers off East Point.

3.11 Jazirat Jabal Zuqar (Az Zuqar) (14°00'N., 42°45'E.), the highest island in the Red Sea, rises to lofty barren hills, which appear as sharp peaks on some bearings. The N side of the island is bordered by reefs, which extend about 0.5 mile offshore, W of North Point, the low N extremity of the island.

West Point, the W extremity of the island, and all the extremities on the W, S, and E sides of the island, as far N as East Point, its E extremity, can be approached to within 0.5 mile.

Between North Point and East Point, the coast is fringed by reefs which extend about 91m offshore. Each point is low and rocky. A 4.6m patch was reported to lie about 0.2 mile ENE of East Point; a sunken wreck lies in about the same approximate position.

A depth of 17.8m lies about 1 mile E of East Point. Jazirat Jabal Zuqar is reported to be radar conspicuous.

High Island has a rather conical appearance from N and a flat appearance from SE. Its S extremity lies about 1 mile N of North Point; the island is steep-to within 183m. High Island is reported to give a good radar return up to a distance of 14 miles.

Regulations.—An IMO-adopted Traffic Separation Scheme lies in the waters E of Jazirat Jabal Zukar and may best be seen on the chart. For further information, see paragraph 3.9.

3.12 Jazirat Sharq (Shark Island) (13°58'N., 42°42'E.) lies about 2.5 miles SSE of West Point on Jazirat Jabal Zuqar. A rock, awash, lies close off the NW extremity of the island and a sunken rock lies close off the middle of its E side. The SW side of Jazirat Sharq is fringed by reefs.

Tides—Currents.—Tidal currents around Jazirat Jabal Zuqar are very irregular, but they appear to set along its coasts. At the anchorage on the N side of the island, it was reported that the flood current sets SW at 2.5 knots and the ebb sets NE.

Anchorage.—An anchorage for small vessels, sheltered from S winds, is in a bay on the NE side of Jazirat Jabal Zuqar, about 0.3 mile NW of East Point; a swell sets into this anchorage.

There is good shelter from S winds for large vessels, in 20.1m, sand and coral, with the summit of Quoin Island, bearing about 085° and just open of North Point; a charted dark square tomb near the coast, about 1.5 miles WSW of North Point, bearing 187°; and the 624m summit of Jazirat Jabal Zuqar bearing 166°.

This anchorage is reported to be about 0.5 mile from the coastal reef.

Anchorage can generally be taken off the NW side of Jazirat Jabal Zuqar, in 12.8 to 18.3m, between about 0.1 to 0.2 mile off the coastal reef, and in 31 to 48m, about 0.5 mile off this same reef.

South Bay, on the SW side of Jazirat Jabal Zuqar, offers good anchorage between Near Island and the large projection of the SE side of the island. The best berth is in the NW part of the bay, in 14.6m, midway between the N part of Near Island

and the coast of Jazirat Jabal Zuqar, with the N extremity of Near Island bearing 289°.

Anchorage can be taken in the E part of South Bay, in 22m, coral, with a point a little over 0.5 mile ESE of the NE extremity of Near Island in range 294° with the N extremity of Near Island, and the SE entrance point of the bay bearing 191°.

There are two stone huts and a hut for water tanks on the NE shore of South Bay.

A small bay at the S end of Jazirat Jabal Zuqar offers anchorage, in 9.1 to 11m, sand and coral, about 183m E of the W entrance point.

The reefs fringing the shores of this bay can generally be seen.

3.13 Jazirat Tunkhw (Tongue Island) (13°53'N., 42°43'E.) lies about 2.5 miles WSW of the SW extremity of Jazirat Jabal Zuqar, with a deep channel, clear of dangers, between them. About 0.2 mile from its S side is a low rock connected by sunken rocks with the SW extremity of the island and enclosing a basin, with a least depth of 11m.

Jazirat al Hanish as Saghir (13°52'N., 42°47'E.) lies about 2 miles SSE of the S extremity of Jazirat Jabal Zuqar; the channel between them is deep and free from dangers.

The island is hilly and rugged but its summit is not easily distinguished. When approaching from N or S, a peak, 162m high, in the NE part of the island, shows up well and, when seen from SW, resembles a small peak in the act of falling.

A group of rocky islets, lying from about 0.1 mile to about 2 miles NE of the NE extremity of Jazirat al Hanish as Saghir, lies on a shoal with depths less than 18.3m, which connects it with the island and extends about 0.5 mile NNE of the islets.

Low Island lies almost 0.5 mile E of the N part of Jazirat al Hanish as Saghir; a shoal with a least depth of 7.3m, extends about 0.5 mile N from Low Island. On the N part of the shoal is an islet, about 7.6m high.

A rock, 10.6m high, lies about 183m SE of Low Island; Fawn Rock, nearly awash, lies about 0.1 mile ESE of this rock. A stranded wreck lies about 0.5 mile SSW of Fawn Rock.

A chain of rocks and a narrow islet lie from 91m to about 0.5 mile SSW of the S extremity of Low Island; a 14.6m patch is about 0.2 mile S of the S end of the islet. A stranded wreck, best seen on the chart, lies on the narrow islet.

A small rocky patch, with a depth of 12.8m, lies about 1.5 miles ESE of the 10.6m high rock; although this was the least depth found during a survey, lesser depths may exist, and Low Island should be given a wide berth. The channel between Jazirat al Hanish as Saghir and Low Island is navigable and has a least depth of 11.0m.

Tides—Currents.—The current in the channel between Jazirat al Hanish as Saghir and Low Island sets S from about HW in Qanat Abu Ali until about 4 hours 30 minutes before the next HW there.

Anchorage.—Anchorage, in 21.9 to 27.4m, sheltered from S winds, can be taken in the channel between Jazirat al Hanish as Saghir and Low Island, with the W extremity of the islet S of Low Island just open W of the W extremity of Low Island and bearing 187°, and the 7.6m islet off the N extremity of Low Island bearing 049°.

In the S part of the channel, anchorage can be taken, in 33 to 37m, with the NE extremity of Jazirat al Hanish as Saghir bearing 347° and the SE extremity of that island bearing 227°.

Anchorage, in 12.8 to 20.1m, sheltered from S winds and sea, can be taken N of Jazirat al Hanish as Saghir with the 162m peak bearing 180° and the semicircular-shaped islet close NE of the N extremity of the island bearing 090°. This anchorage is reported preferable to those in the channel.

3.14 Jazirat al Hanish al Kabir (13°44'N., 42°44'E.), marked by lights shown from near its SW and NE extremities, is separated from Jazirat al Hanish as Saghir by a deep channel free from dangers. It is hilly and the highest peak rises to 407m near the middle of the island; on some bearings this elevation appears as a prominent bluff.

A low strip of sand crosses the island about 3 miles from its SW extremity and, due to the land on both sides of it being high, that part of the island SW of this strip appears, from a distance, on NW and SE bearings, as a separate island.

Jazirat al Hanish al Kabir is reported to give a good radar return up to a distance of 21 miles.

Tides—Currents.—Tidal currents in the vicinity of Jazirat al Hanish al Kabir are rather strong and set N on the flood off the E coast of the island, and set strongly S on the ebb off the SW coast.

Anchorage.—Anchorage, sheltered from N winds, can be taken in a number of places off the E side of Jazirat al Hanish al Kabir, the depths outside the coastal reef being fairly regular. The best anchorage is about 0.5 mile off the coastal reef, in 25.6 to 33m, with the SW extremity of Double Peak Island bearing 135°, and the SE extremity of Jazirat al Hanish al Kabir bearing 238°.

A vessel has anchored, in 18.3m, sand and coral, good holding ground, sheltered from S winds, in a position about 0.5 mile ESE of Peaky Island. Southeast Bay, at the SW end of Jazirat al Hanish al Kabir, affords anchorage, in 33m, sand and coral, about 0.3 mile WSW of the E entrance point.

Regulations.—An IMO-adopted Traffic Separation Scheme lies in the waters W and S of Jazirat al Hanish Al Kabir and may best be seen on the chart. For further information, see paragraph 3.9.

3.15 Marescaux Rock (13°46'N., 42°42'E.), about 4.5 miles WSW of the N extremity of Jazirat al Hanish al Kabir, has a depth of less than 1.8m; the sea generally breaks on it. This rock has not been examined and its position should be avoided.

Peaky Island (13°47'N., 42°45'E.) is reported to give a good radar return up to a distance of 20 miles.

Haycock Island (13°47'N., 42°47'E.) lies about 0.3 mile NE of the N extremity of Jazirat al Hanish al Kabir. From the S it resembles a haycock, but when observed from close E, it appears to be hollowed out like a saucer.

The channel between the two islands has a least depth of 14.6m in the fairway; a rock, with a depth of less than 1.8m, lies about 183m off the SW side of Haycock Island.

The Addor Ali Islands, lying about 1 mile E of Haycock Island, attain an elevation of 37m. The islets form a circle, within which is a basin with a small opening from seaward.

3.16 Jazirat Mushayjirah (13°47'N., 42°50'E.), about 1.7 miles SE of the Addar Ali Islands, can be approached on its W

and S sides to a distance of 0.2 mile, but a reef extends about 91m N and 0.5 mile E from it. The islet is only 7.3m high and not easily seen at night. A bank, with a least depth of 11m, lies about 0.4 mile NNW of this islet.

Tides—Currents.—Off Haycock Island, the tidal current sets SE on the ebb tide. There are tide rips between Haycock Island and Jazirat Mushayjirah.

Depths—Limitations.—The channels between **North Round Island** (13°43'N., 42°47'E.) and Jazirat al Hanish al Kabir, and between North Round Island and Quoin Island, about 0.5 mile E, are clear of dangers, and have depths ranging from 21.9 to 48m.

Chor Rock (13°41'N., 42°45'E.) lies in a position about 2.5 miles SW of North Round Island. It lies on a bank having depths of 3.7 to 18.3m and extending about 1.5 miles E from Jazirat al Hanish al Kabir. Some black rocks lie close NW of Chor Rock.

Round Island, lying 3 miles ESE of Chor Rock, is dark in appearance.

Parkin Rock (13°38'N., 42°49'E.) lies about 2.5 miles SSE of Round Island. Caution is necessary when near this rock as depths in its vicinity are almost uniform and give no warning of its proximity unless it is sighted.

3.17 The **Rocky Islands** (13°38'N., 42°47'E.) consist of three black rugged islets and some small rocks. They lie near the S end of a bank having depths of 7.3 to 37m and which extends about 1.5 miles SSW from a position about 1.5 miles NNE of the highest islet.

Double Peak Island (13°39'N., 42°45'E.) lies about 1.5 miles S of Chor Rock; it is steep and has two small peaks close together.

A shoal with less than 9.1m, and with two small above-water rocks at its NE edge, extends over 0.5 mile NE from the NE end of the island.

The channels between Double Peak Island and **Mid Islet** (13°39'N., 42°45'E.) and between Mid Islet and Al Mamalih (Suyul Hanish), 0.5 mile S and rugged, are free from dangers and have least depths of 7.3 and 16.5m, respectively.

The channel between Al Mamalih (Suyul Hanish) and Hanish al Kabir is clear and free of dangers, except for the banks on which lie Chor Rock, Pin Rock, and Cust Rock and a reported depth of 16.5m lying in mid-channel between Chor Rock and Double Peak Island.

Sheltered anchorage can be taken in several places off Al Mamalih (Suyul Hanish).

3.18 Ship Rock (13°36'N., 42°43'E.), about 1 mile SW of Al Mamalih (Suyul Hanish), has depths of less than 1.8m, and lies on a shoal with a least depth of 7.3m, the latter extending about 0.3 mile N and S of the rock.

Three Foot Rock, about 2.5 miles SW of Al Mamalih (Suyul Hanish), is 0.9m high and steep-to. Currents of 1.5 knots have been experienced in the vicinity of Three Foot Rock. A depth of 27m was reported about 2 miles ESE of Three Foot Rock.

Pin Rock (13°38'N., 42°42'E.) lies about 3 miles W of the NW extremity of Al Mamalih (Suyul Hanish). Cust Rock is a little over 0.5 mile WNW of Pin Rock and has less than 1.8m.

Pin Rock and Cust Rock lie on a bank with depths of 20.1 to 37m, but there are depths of from 7.3 to 12.8m within 0.2 mile N of Pin Rock.

Southwest Rocks (13°39'N., 42°36'E.), about 5 miles W of Cust Rock, comprise a rock, 6.7m high, with an above-water rock and a sunken rock close off its E side; they are steep-to.

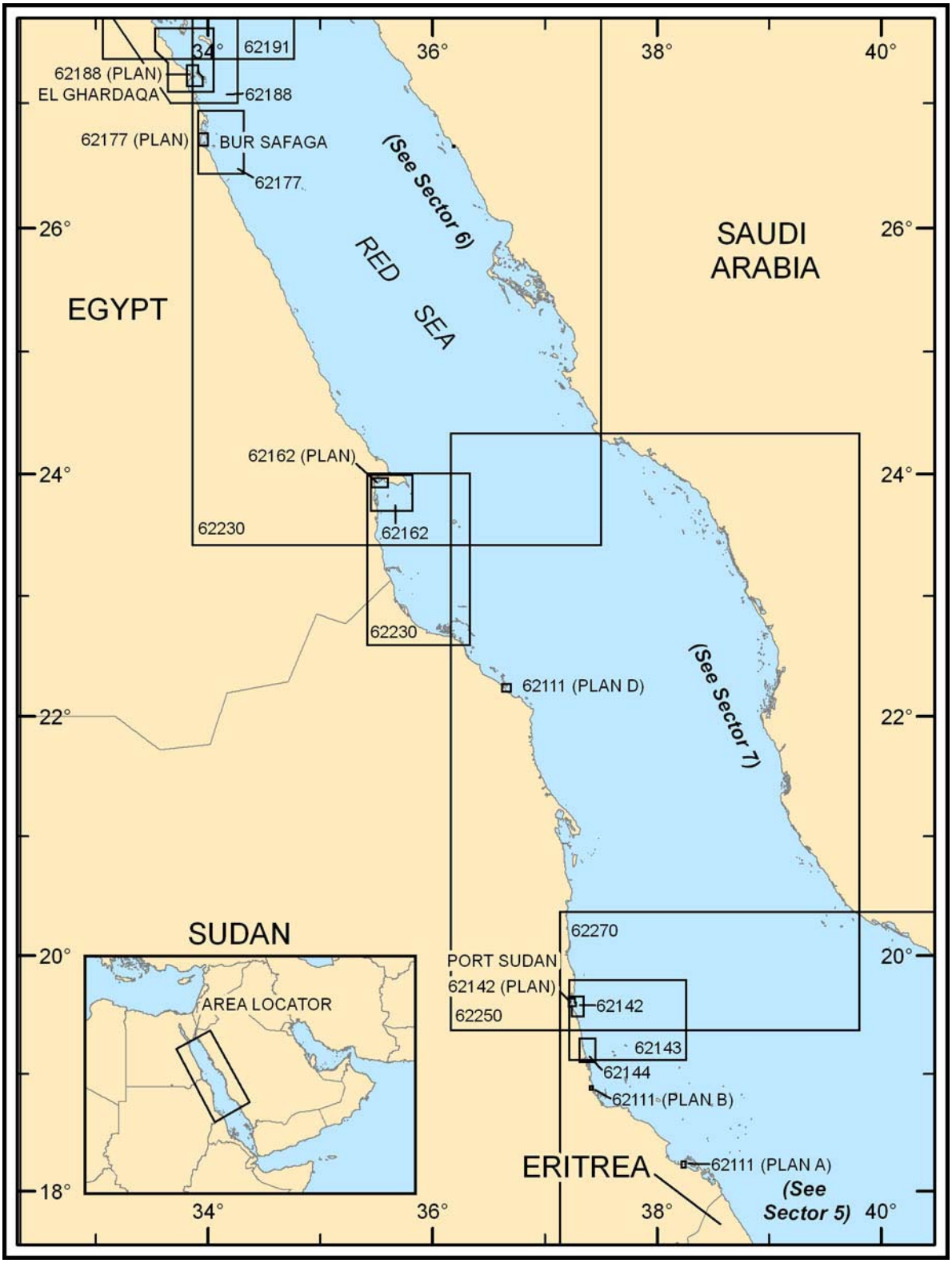
3.19 The Haycocks (Scogli Haycocks) (13°32'N., 42°37'E.) consist of three islets. Northeast Haycock lies about 6.5 miles SW of Al Mamalih (Suyul Hanish); Middle Haycock, cone-shaped, lies about 1 mile farther WSW. Southwest Haycock, about 1 mile SW of Middle Haycock, is 52m high.

The **Muhabbaca Islands** (Isole Mohabbacah) (13°24'N., 42°36'E.) are four islets extending 5 to 12 miles S and SSW of The Haycocks. They have a white appearance and at times are difficult to identify. High Islet (Isola Alta), the N islet of the group, lies about 5 miles SSW of Southwest Haycock.

Flat Islet (Isola Piana) lies in a position about 3 miles SW of High Islet and has a large hole at its N end, which shows up on certain bearings. Harbi Island (Isola Harbi) lies about 6 miles ESE of Flat Islet and rises vertically from the sea.

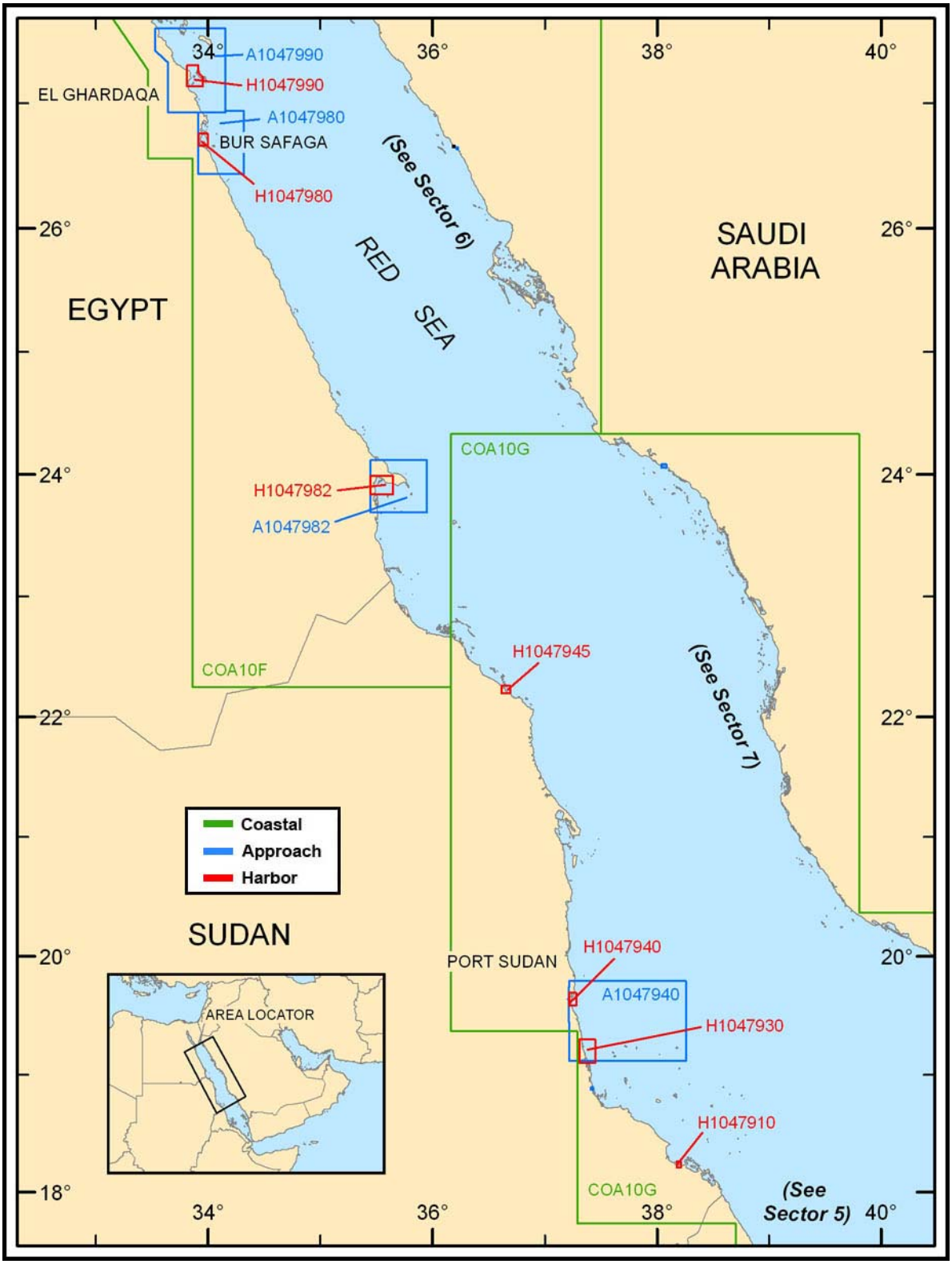
Sayal Island (Isola Saial) lies about 5 miles SSE of Flat Island; it is small and rocky. Depths are considerable in the vicinity of these islets. Depths of 29m and 16.5m were reported 8 and 10 miles E, respectively, of Harbi Island.

Caution.—Mariners are advised to exercise caution when navigating in the vicinity of these islands. There have been reports that the charted positions may be incorrect by varying amounts.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **4** — CHART INFORMATION



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SECTOR 4 — DNC LIBRARY INFORMATION

SECTOR 4

THE RED SEA—WEST SIDE—EGYPT AND SUDAN—GAZAIR GIFTUN TO RAS KASAR

Plan.—This sector describes the W side of the Red Sea between Gazair Giftun and Ras Kasar, including the Sawakin Archipelago. The general sequence of description is N to S.

General Remarks

4.1 A range of mountains extends S at varying distances inland; from Jazirat Safajah, about 25 miles S of the S extremity of **Gazair Giftun** (27°14'N., 33°55'E.), to Ras al Hadaribah, about 200 miles farther SE, this range approaches the coast.

The terrain between the mountains and the sea is low and sandy. This coast is fringed with reefs and there are numerous off-lying reefs.

Inner Channel, sheltered by reefs, is a smooth-water channel useful to smaller vessels; it lies between **Ras Abu Shajarah** (21°04'N., 37°19'E.) and Sawakin Harbor, about 115 miles farther S. Along this stretch of coast the channel is generally 1.5 to 3 miles wide.

Near Ras Abu Shajarah and the Tiflah Islands, about 22 miles S of Ras Abu Shajarah, and Marsa Salak, about 12 miles farther S, Inner Channel narrows to about 1 mile.

From Ras Abu Shajarah to Marsa Salak, the most intricate part of the channel, and again from Marsa Fijjah, 23 miles S of Marsa Salak, to Marsa Darur, 12 miles farther SSE, the depths are mostly moderate. In other parts, this channel is deep.

South of Bur Sudan, the Inner Channel passes inside the extensive shoals and islets of Sawakin Archipelago as far as the vicinity of the Khor Nowarat, about 20 miles NW of Ras Kasar. The two principal entrances of Inner Channel are off Bur Sudan and Sawakin Harbor, respectively.

In most anchorages along this section of coast, it is advisable to moor, and in many places during bad weather it may be prudent to run a stream anchor to or toward the weather beach.

The Central Passage, for all practical purposes, is the only navigable channel used by vessels through the Red Sea and is described in Sector 3.

Vessels bound for ports on the W shore have to break off from the Central Passage and contend with Inner Channel, which is formed partly by small detached reefs and sunken rocks, and partly by islands and extensive reefs.

Inner Channel is connected to the Central Passage by openings in the reefs, some of which, especially those N of 17°N, are of great width.

Directions for approaching these ports will be described in the appropriate sections of this sector. Excessive refraction and mirage are frequent, causing land, lights, and other features to be visible from much greater distances than would normally be expected.

Winds—Weather.—Along this section of the W shore, N winds are prevalent the year round, but are affected by land and sea breezes. These winds are light and variable, with frequent calms during August and September.

From August to October, the weather is generally fine; November to April is the rainy season.

Vessel Traffic Service.—A Vessel Traffic Information Management System (VTIMS) operates in the Red Sea and the Gulf of Suez to provide navigation assistance and advice to shipping, as requested. Further information on the VTIMS can be found in paragraph 2.1.

Caution.—Cross currents, setting E or W, are not infrequent, and are observed in all parts of the Red Sea.

All islands withing Egyptian territorial waters in the Red Sea are declared Protected Areas. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Gazair Giftun to Bur Sudan

4.2 **Gazair Giftun** (Gifatin Islands) (27°13'N., 33°56'E.) is a group of islands, islets, and rocks lying close off the coast.

Gazair Giftun (Giftun el-Kebir), the largest of the Jazair Jiftun group, is hilly in its N and central parts, with a rugged range extending from N and reaching an elevation of 118m near the center of the island; the S part of the island is a plateau, 3 to 6.1m high.

A coral patch, from which a light is shown from the NW point of the patch, lies about 1 mile SSW of the S extremity of the island. Giftun el-Saghir, lying about 1 mile E of the SE extremity of Gazair Giftun, is hilly and 101m high near the middle of its E side. A T-head pier, with a depth of 7.3m at its head, projects a short distance from the SW extremity of the island.

Anchorage.—Anchorage is prohibited in the Gazair Giftun. All waters and reefs in this area are now a marine reserve. There are mooring buoys available throughout the area.

Caution.—Navigation is prohibited, due to moored mines in the area bound by the coast S of Gazair Giftun and lines joining the following positions:

a. 27°09.4'N, 33°59.6'E.
b. 27°09.2'N, 33°49.3'E.
c. 26°58.9'N, 33°55.0'E.

4.3 **Shab Abu Rimathi** (27°08'N., 33°57'E.), a coral reef, is reported not to be clearly visible.

Umm Agawish el-Saghir (27°09'N., 33°51'E.), a low rocky islet, lies on a reef in the S entrance of Gifatin Channel.

Gaziret Abu Minqar, lying on the reef extending from the W side of Gazair Giftun, is a flat 1.8m high island; it is divided into two parts by a narrow creek bordered with mangroves.

The N part of the island is bare, and its S part has low bushes. Beacons, marking the edge of the coral reef, stand W and SW of the island.

Anchorage.—Good anchorage, sheltered from N winds, can be taken, in 12.8 to 18.3m, close S of the pier at the SW extremity of Giftun el-Saghir.

Franken Point (27°14'N., 33°51'E.), low and sandy, with bare hills NW of it and a flat plain SW, is the W point of the N entrance of El-Ghardaqa Anchorage in Minqar Channel. The point is marked by a light.

4.4 El-Ghardaqa (Hurghada) (27°13'N., 33°51'E.) (World Port Index No. 47990) lies in Minqar Channel between the reef extending W from Gaziret Abu Minqar and the mainland.

El-Ghardaqa

Winds—Weather.—The weather in the N part of the Red Sea is controlled in the summer by the thermal low in Saudi Arabia and the high pressure that ridges over the eastern Mediterranean Sea.

When the thermal low deepens and the high pressure ridge strengthens, the winds funnel through the Gulf of Suez, producing gale force winds and high seas. The funneling effects are exacerbated in the El-Ghardaqa area.

Visibility can be expected to be 4 to 6 miles. However, it will be lower in suspended sand and the heavy haze that forms after the winds die down.

Tides—Currents.—Currents are mainly wind driven and have been reported to reach speeds of up to 4 knots in the approach and up to 2 knots in the anchorage area.

Depths—Limitations.—South Pier, located about 0.2 mile SSW of Franken Point, is 15m long. It can accommodate tankers up to 100m long, with a maximum draft of 7.3m. Vessels berth with an anchor laid SE.

North Pier, about 0.1 mile NNE of South Pier, is in ruins.

Minqar Channel, the N approach, had a least charted depth (2001) of 6m. Giftun Channel, the S approach, has general depths that are less than those in Mionqar Channel. Surveys in both channels are incomplete, with many depths less than charted (2004). Vessels should navigate with caution and consult local authorities for current depth information

Aspect.—Range lights, in line bearing 194°, lead from the N to the port.

Regulations.—Vessels wishing to enter El-Ghardaqa Anchorage should report to the Egyptian authorities at least 24 hours in advance of their time of arrival in the waiting anchorage. The port is open from sunrise to sunset.

Anchorage.—A waiting anchorage, located in the N approach to Minqar Channel, is available. It is centered on position 27°17.5'N, 33°52.2'E, and has charted depths of 10 to 101m, coral bottom.

Anchorage can be taken, in a depth of 25m, about 0.25 mile ESE of Franken Point.

Anchorage can be taken, in 16 to 18.m, on the 194° range with the Harbormaster's Office, located about 0.2 mile SW of Franken Point, bearing 300°. Take care to avoid a wreck, with a least depth of 33m, close N of the anchorage.

A 6m patch lies 0.1 mile E of the anchorage; a 7m depth lies close N of the anchorage. Other pinnacle rocks lie in this area. This anchorage is sheltered from all but N winds, which raise a considerable sea.

Directions.—Vessels approaching El-Ghardaqa from the N should steer to pass N of Jazirat Umm Qamar until on the 194° range, passing ESE of Shab el Fandadir. Dishet Abu Minqar, in line with a high hill bearing 199.5°, leads to the anchorages.

Caution.—For fixing positions, Gazirat Shakir, the round summit of Jazirat Jubal, and the double peak of **Gebel Ush** (27°30'N., 33°33'E.) will be found more convenient than Juzur Tawilah, which is low and flat. These peaks are described in paragraph 2.18, paragraph 2.17, and paragraph 2.16, respectively.

Dangerous rocks lie about 1.2 miles and 3.2 miles SSE of Umm Qamar Island.

4.5 Merlin Point (27°12'N., 33°51'E.) is a bare coral rock rising in steep ledges to an elevation of 74m; it is the E extremity of Dishet Abu Minqar, a prominent hill. This stretch of coast, which is also the W side of Minqar Channel, forms a sheltered bay. The remains of a pier and some bollards and piles are close S of Merlin Point.

A conspicuous hotel stands 0.2 mile SW of the point. From Merlin Point to Al Qusayr, about 70 miles SSE, the coast is moderately clear of dangers.

Abreast Gaziret Safaga, the off-lying reefs are about 6 miles from the nearest land, but farther S the coast may be approached with little danger, except in the vicinity of **Quei Reefs** (26°24'N., 34°11'E.).

The mountains in the N part of this section slope SE to the coast. Southeast of Jabal Shaib al Banat, 2,184m high, the coastal range gradually decreases in elevation and, in the vicinity of Gaziret Safaga, is from about 213 to 549m high.

Jabal al Maqal, about 15 miles ESE of Jabal Shaib al Banat, is 1,240m high. To the E of this latter mountain the coast, as far as Al Qusayr, about 40 miles SSE of Gaziret Safaga, is low, rising gradually to mountains, 610m high, about 5 miles inland.

Gebel Nuqara, 833m high, and about 14 miles SE of Jabal al Maqal; is the S end of the range of which Jabal Shaib al Banat is the summit.

4.6 Marsa Abu Makhadiq (27°02'N., 33°54'E.) provides anchorage, in 27.4 to 37m, mud. During N winds, anchorage in lesser depths can be taken by carefully approaching the reef fringing the N entrance point, but caution must be exercised as some detached rocks lie close to the reef.

A 12m wooden pier extends from a position about 0.3 mile within the N entrance point of Marsa Abu Makhadiq. There is a reported depth of 6.1m alongside the head of this pier.

Anchorage can be taken, in 11 to 18.3m, sand and coral, S of Saal Hasish, a 3m high islet protecting Marsa Abu Makhadig on the E, which has a drying reef extending 1.5 miles S, with the islet bearing 008°, distant 1.5 miles.

From a position on the mainland W of the S end of the reef containing Saal Hashish, and Ras Abu Sawmah, about 8 miles SE, the coast is fringed by a steep-to reef. Sharm el Naqa, a break in the coastal reef which extends about 0.2 mile offshore

in this vicinity, is entered about 2 miles WNW of the NE extremity of Ras Abu Sawmah; there is a small above-water rock in this cove. It is prohibited to anchor, except in an emergency, on the coral reefs surrounding Sharm el Naqa; they have been declared a protected area.

4.7 Ras Abu Sawmah (Ras Abu Soma) (26°51'N., 34°00'E.), with a 24m summit which is gravel-topped, is a salient headland slightly higher in elevation than the coast from which it projects. The point is marked by a light, with a racon, at its NE extremity.

Jazirat Safajah (Geziret Safaga) (26°45'N., 33°59'E.) is low and sandy. A conspicuous table-topped hill, 26m high, is on its NE extremity. A large fort is situated close to this position. The NE extremity is marked by a light. A directional light with racon is located in the SE part of the island just NE of a conspicuous white house. A ruined beacon stands on the S tip of the island.

Some detached rocks lie about 1 mile S of the S extremity of the island. They are marked on their SE side by El Morewood Lighted Beacon.

4.8 Panorama Reef (26°45'N., 34°05'E.) lies in a position about 5 miles E of Jazirat Safajah; it is on a bank with depths less than 200m. The N extremity of the reef is marked by a lighted beacon.

A bank, with a least charted depth of 23m, lies about 1 mile S of Panorama Reef. Arpha Bank, with a least depth of 22m, lies about 2 miles W of Panorama Reef.

Middle Reef (26°43'N., 34°00'E.), which dries, and over which the sea breaks, lies about 3 miles SSE of Panorama Reef. This danger lies on a bank with depths of 7.3 to 11m; sunken rocks lie close S and 0.5 mile SE, respectively, of Middle Reef. The reef is marked on its W side by a lighted beacon, although it has been reported (2005) that the lighted beacon has been removed.

The SW part of the bank on which these two reefs lie has not been examined.

Fellowes Rocks, two submerged rocks with depths of less than 1.8m, lie in the middle of a bank extending about 2 miles WSW of Middle Reef. The rocks are marked by a lighted buoy with a racon.

4.9 Shi'b Shear (26°39'N., 34°06'E.) lies awash, about 3 miles S of Middle Reef, and is the SE of this group of dangers. A boulder which dries to 1.2m stands near the SE extremity of this reef. The S extremity of the reef is marked by a lighted beacon.

Hyndman Reefs (26°39'N., 34°03'E.), awash and drying in places, lie about 4 miles SE of the S extremity of Jazirat Safajah; these reefs extend about 2 miles SE. The reef is marked on its N side by a lighted beacon.

Cannon Reef (26°40'N., 33°59'E.), which dries 0.3m and the N extremity of which lies about 3 miles S of the S extremity of Jazirat Safajah, projects S to within about 1 mile of the coastal reef. A deep channel, about 2 miles wide, lies between Hyndman Reefs and Cannon Reef. The use of this channel is discouraged by local authorities.

Spit Reef (26°41'N., 33°58'E.) projects about 3 miles N from the coast to a position about 2 miles SW of the S extremity of Jazirat Safajah.

Shoals and sunken rocks extend from the W and NW extremities; shoals with less than 5.5m lie within 0.5 mile of the NW extremity.

A sandy spit, which dries to 0.6m, is on the E side of this reef. The NE extremity of the reef is marked by a lighted beacon.

Bur Safaga (Bur Safajah) (Port Safaga) (26°44'N., 33°56'E.)

World Port Index No. 47980

4.10 Bur Safaga is entered between El Morewood Lighted Beacon and the dangers N of Spit Reef. Shelter is afforded from N winds; SE winds cause a swell to set in.

The settlement on the mainland lies about 4 miles NW of the S extremity of Jazirat Safajah; the phosphate works and the settlement form a conspicuous group of buildings.

Winds—Weather.—Generally, the winds blow from the N and are light in the morning, but gain in strength during the day, making mooring more difficult. From November to March, strong S winds blow occasionally, lasting approximately 10 days. These cause a rough sea and hinder port operations.

Depths—Limitations.—The fairway into the port was dredged (1996) to a depth of 16m, although it has been reported (2002) that the maximum safe entry draft is only 10.36m. It has also been reported (2007) the channel is narrower than charted and the buoys are difficult to see until a vessel is very close to the entrance channel.

Inside the shoals, the bay has general depths of 26 to 35m, but shoal depths extend up to 1.5 miles off the coast in the NE portion of the harbor.

Elsewhere, shoal depths extend between 20m and 0.5 mile offshore. A 2.1m patch lies about 3 miles SE of the Manager's House, and a 4.9m shoal lies about 3 miles ESE of the same landmark.

Bur Safaga—Berthing Information

Berth	Berthing length	Charted depth	Maximum vessel		Usage
			Length	Draft	
No. 1	289m	14.0m	290m	11.0m	Bulk grain. Drafts of up to 12.8m can be handled with prior permission.
No. 2	415m	10.0m	290m	9.15m	General cargo and passengers.
No. 3	—	10.0m	221m	9.45m	Aluminum.

Bur Safaga—Berthing Information					
Berth	Berthing length	Charted depth	Maximum vessel		Usage
			Length	Draft	
No. 4	70m	—	70m	8.53m	Ground and rock phosphate.
No. 5	420m	—	—	9.75m	Multi-purpose.
Coal	—	—	115m	8.0m	Coal.
Phosphate	—	8.5m	260m	14.0m	Private facility.

Port Safaga Vessel Traffic Information Management System (VTIMS)			
Vessel Traffic Center	Contact Information		VTIMS Boundary
Port Safaga VTC (26°44.7'N., 33°55.2'E.)	Call sign:	Port Safaga VTC	The boundaries extend from the port entrance between El Morewood Lighted Beacon (26°42.0'N., 33°59.8'E.) and a point N of Spit Reef.
	Frequency:	VHF channels 11 and 16	
	Telex:	581-462299914 SFAG X (INMARSAT-C)	

Aspect.—The iron framework transporter at the phosphate berth, the white building known as the Manager's House about 0.3 mile W, and a silo about 1 mile NE of the Manager's House, are all conspicuous. An aluminum silo and elevator stand at the general cargo wharf. An Egyptian Naval Base is situated just NE of the Commercial Wharf.

Pilotage.—Pilotage is compulsory. Vessels are not allowed to approach inside the port without a pilot. The pilot boards the vessel abeam of El Morewood Lighted Beacon when on the entrance course of 311°.

Regulations.—Vessels must send their ETA to the Port Authority 7 days in advance. The ETA must be confirmed 24 hours in advance. After arriving in the waiting area, vessels must contact the pilot station on VHF channel 16 (call sign: Port Safaga) to provide the time of arrival and any other requested information.

Navigation is prohibited outside the approach sector. The approach sector lies between 010° and 050° from El Morewood Lighted Beacon.

It is prohibited to approach the port entrance from the S.

Vessel Traffic Service.—Bur Safaga is covered by the Safaga Vessel Traffic Information Management System (VTIMS). Information on the VTMIS station, which operates 24 hours, is given in the accompanying table titled **Port Safaga Vessel Traffic Information Management System (VTIMS)**.

The VTIMS provides the following navigation assistance services to vessels in the port area:

1. Automatic surveillance and tracking of vessels arriving at the port approaches.
2. Automatic determination of arrival times at the port.
3. Automatic continuous tracking and monitoring of position and speed for all vessels using the port.
4. Instantaneous information concerning vessels using the port.
5. Compilation of a data base for vessel information, navigation rules, traffic flow, and navigation reports.
6. An efficient means of communications with vessels arriving at the port approaches and vessels entering the port.
7. Safety of vessel movements and cargo using the port.

Participation in the VTIMS is compulsory for all vessels over 300 tons. Vessels should send the following information, via their agent, to Port Safaga VTC 48 hours prior to arrival:

1. Vessel name and nationality, including any previous names.
2. Draft, beam, and dwt.
3. Whether vessel intends to enter the port or anchor outside the port. If the latter is the case, the length of stay should be given.
4. Any dangerous cargo on board. If yes, state the quantity and class according to IMO regulations.

Vessels should report to Port Safaga VTC at least 24 hours prior to arrival. The request should contain the following information:

1. Vessel name.
2. Nationality.
3. Type of vessel.
4. Draft.
5. Gross tonnage.
6. Deadweight tonnage.

Vessels should contact Port Safaga VTC on VHF channel 16, 2 hours prior to arrival, stating the following information:

1. Position (latitude and longitude).
2. Gross tonnage and dwt.
3. Draft.
4. Whether vessel is loaded or not.
5. Type of cargo.
6. Any defects affecting the safety of navigation.
7. If entering the port for the first time:
   a. Date of construction.
   b. Call sign or IMO number.
   c. Length overall.
   d. Beam.
   e. Type of engine.

When approaching the port, vessels should contact Port Safaga VTC on VHF channel 16 to receive instructions. The VTC will instruct the vessel to maintain a listening watch on VHF channel 11.

Vessels entering the port should report directly to the port on

VHF channel 16 or the port calling channel and check out with the Port Safaga VTC.

Vessels leaving the VTIMS area should check out with the Port Safaga VTC.

In an emergency, vessels should contact Port Safaga VTC on VHF channel 16 or the current working channel.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Port Safaga
2. VHF: VHF channels 11 and 16
3. Telephone: 20-65-3256018
4. Facsimile: 20-65-3253976
5. E-mail: redseaut@idscl.gov.eg

Anchorage.—A waiting anchorage 1.5 miles in radius, is available in the approach to Bur Safaga. The anchorage is centered on position 26°46'N, 34°02.7'E and generally contains depths of over 200m.

Arpha Bank is contained within the anchorage limits, which offers a least depth of 22m, bottom quality not stated.

General anchorage is available anywhere in the bay clear of the shoals, in depths of 26 to 35m.

A vessel anchored 1.5 miles off El Morewood Lighted Beacon, with the same beacon bearing 350°, good holding ground. This is reported to be the best of the outer anchorages.

Another berth, in depths of 21.9 to 29m, is available with the SW tip of Jazirat Safajah bearing 115°, distant 0.7 mile.

Swinging room for large vessels using this berth may be cramped by foul ground best seen on the chart. Anchorage berths are assigned by the harbormaster.

Directions.—When approaching Bur Safaga, mariners are expected to use caution as the navigational aids have been altered.

Vessels approach from the NE between the charted waiting area and Panorama Reef using the directional light on the S end of Jazirat Safajah, although caution is necessary, as this leads over Arpha Bank, with a depth of 22m. Vessels should give Panorama Reef a wide berth.

Vessels approach the inner harbor using the buoyed dredged channel. The centerline of the channel and the track to follow is marked by range lights, in line bearing 311°.

Caution.—Mariners are advised that the exact positions of the lighted beacons in Safaga Channel have yet to be confirmed. It has also been reported that the bottom in the vicinity of the phosphate berth has numerous coral heads on which the slack of hawsers or anchor cables may foul.

Vessels entering should try to arrive off Jazirat Safajah by sunrise in order to have the sun astern when making the harbor entrance. The wind is then usually calm, but during the evening the breeze is generally offshore, and is occasionally quite strong for periods of as much as 1 hour. It is advisable not to enter at night.

It has been reported (2007) that local authorities discourage an approach to the port between Fellowes Rocks and Hyndman Reefs; Hyndman Reefs are extending NE and the area is not well surveyed.

4.11 Sukhur Quwayh (26°24'N., 34°12'E.), lying between 2 and 4 miles offshore, is a group of above and below-water rocks.

Between Bur Safaga and Al Qusayr, the coast is fringed by a steep-to reef which extends up to 0.5 mile offshore.

Hamrawein (26°15'N., 34°12'E.) (World Port Index No. 47974) is a phosphate terminal, with a 67m long quay and two mooring buoys. Vessels up to 40,000 dwt, with a maximum length of 200m and a maximum draft of 10m, can be accommodated.

Vessels are urged to contact the local authorities before attempting to berth here, as information on this port is scanty.

Al Qusayr (Quseir) (Kosseir) (26°06'N., 34°17'E.)

World Port Index No. 47970

4.12 Al Qusayr is practically an open roadstead consisting of a small bight with the town and the piers in the N part; the bight is open SE. The port is a shipping point for locally-mined phosphate. Except for the head of this bight, where there is a sandy beach, the shores are fringed by reefs extending from 183m to 0.5 mile offshore. The ruins of a fort stand on the higher ground close NW of the town. The port is open from sunrise to sunset.

Winds—Weather.—Winds from N and NW commence daily at about 0500. and increase to force 4 or 5 at about 1100. Winds diminish to calm by evening.

Tides—Currents.—The mean tidal range is 0.5m; the spring tidal range is 0.5m.

Depths—Limitations.—Southwest of the phosphate-loading terminal are depths of 1.8m, which shoal rapidly toward the shore; elsewhere the depths are greater. The dimensions of the berths, rather than the fairways leading to them, limit the size of vessels accommodated. Vessels do not berth alongside the 82m pier, but moor to the available buoys. The maximum depth at berth is 8.8m.

Aspect.—The most prominent objects from seaward are the radio masts, 37m high, close N of the town and the loading transporter on the phosphate pier from which a reported light is shown. Four cylindrical tanks stand near the radio masts.

Conspicuous objects when approaching the port are a building 55m high, standing about 0.2 mile NW of the transporter, and the phosphate works and conveyor belt, about 1 mile NNW of the transporter.

Pilotage.—Pilotage is compulsory. A vessel can obtain a pilot by displaying the "S" flag of the International Code of Signals. The pilot boards 2 miles from the port and remains on board during the vessels stay.

Regulations.—Vessels should send their ETA at the port at least 24 hours in advance, confirming 2 hours prior to arrival.

Anchorage.—Anchorage can be taken, in 9.1 to 33m, on the bank extending E from the coastal reef. Caution must be used in selecting an anchorage, as the edges of the bank are abrupt and could be missed. A depth of 25.6m will be found on the inner bank, with the loading transporter bearing 280°. There is an anchorage close to the reef, with the transporter bearing about 220°, about 1 mile distant, with moderate holding ground of sand and coral. This anchorage cannot be used at night. Should the anchorages here become untenable, good anchorage can be taken at Bur Safaga.

Directions.—The approach from seaward is made via the approach sector, best seen on the chart. A waiting anchorage, 1.5 miles in radius, centered on position 26°07'N, 34°19'E and

encompassing the anchorages, is available.

Caution.—The best time to approach the port is during the morning because of a glare that makes the port difficult to distinguish when the sun is W of the meridian.

4.13 Jabal Abu Tiyur (25°44'N., 34°17'E.), 23 miles S of Al Qusayr, rises to a height of 1,027m and is a prominent mark. On S bearings, the mountain appears to have several peaks; on WSW bearings it appears flattened. On NW bearings, the N summits appear rounded and the S summits gradually appear as peaks.

From Jabal Umm Shaddad, a 730m high peak about 5 miles SE of Jabal Abu Tiyur, a range, with three well-defined peaks, extends about 12 miles S to Gebel Umm Naga.

Between Al Qusayr and Jazirat Wadi Jimal, 97 miles SSE, the coast is fringed in places by a reef; numerous dangers lie up to 8 miles offshore.

Marsa Turunbi (25°42'N., 34°35'E.), a small bay lying 32 miles SSE of Al Qusayr, with a stone T-headed pier, provides anchorage, in 14.6m. Slight shelter from NW winds is afforded by Ras Turunbi, its low N entrance point.

There is a rock in the bight, and 1 mile and 2 miles N of Ras Turunbi there are two small shoals close inshore. Depths of 21.9 to 29m lie on the bank extending about 3 miles E from them.

Ras Turunbi is reported to give a good radar return up to a distance of 18 miles. Marsa Mubarak, in a position about 11 miles SSE of Marsa Turunbi, is reported to be composed of two arms, with the ruins of some houses on the shore of the S arm.

Marsa Abu Dabbab (25°20'N., 34°45'E.) is about 0.2 mile wide. The off-lying dangers S and E of this cove necessitate an approach from the N at a safe distance from the coastal reef. Good anchorage, in 29 to 46m, sheltered from W winds, can be taken in the cove.

Elphinstone Reef (25°19'N., 34°52'E.), 7 miles E of Marsa Abu Dabbab, has a depth of less than 1.8m and is steep-to.

4.14 Ras Samaday (25°01'N., 34°55'E.) projects slightly from the coast and is 47m high. A bank, with depths of 18.3 to 23.8m, lies about 3 miles N of Ras Samaday and about 2 miles offshore; some rocks, with depths less than 1.8m, lie on this bank.

Anchorage.—Anchorage can be taken, in 18.3 to 33m, sheltered from NW winds, on the S side of the above-mentioned bank.

Marsa Tundubah (25°00'N., 34°55'E.), about 3 miles S of Ras Samaday, is sheltered from N by a low point with a small reef projecting from it. About 3 miles ENE of Marsa Tundubah is a small reef, which lies on a bank with depths of 12.8 to 37m. A dangerous rock, with a depth of less than 1.8m, lies about 2 miles SSW of this bank.

Anchorage.—Anchorage can be taken on the bank S of the above reef, and also in Marsa Tundubah, in about 18.3m, close inshore, clear of the reefs and sunken rocks.

Ras Dirra (24°53'N., 34°58'E.), about 7 miles SSE of Ras Samaday, is low. On the low hills to the S are two great rectangular blocks and some ruins. Reefs extend parallel and close to the coast here.

There are several off-lying detached reefs, dangerous to navigation, between Ras Dirra and Ras Urayir (Ras Uriah), about 10 miles SE. The detached reefs are steep-to and lie, in some instances, as far as 6 miles offshore. In this locality, the shore should be approached with caution within a distance of 10 miles.

Jazirat Wadi Jimal (24°40'N., 35°10'E.), about 6 miles SE of Ras Urayir, is low and rocky. Foul ground is charted between it and the shore, while a foul patch, an off-lying danger, is charted 5 miles E of the island.

Several other dangers lie hereabouts, and may best be seen on the chart.

From SE, the NE end of the island appears as a bluff and the SW end appears low, with several small hills near it. From S, both ends appear low, with the summit in the middle.

Anchorage.—Anchorage can be taken, in 14.6 to 18.3m, sand and rock, on the bank extending SE from Jazirat Wadi Jimal, with its summit bearing about N. Caution is necessary to avoid the rocks on this bank.

4.15 Sharm Luli (24°37'N., 35°09'E.), about 4 miles SW of the SE extremity of Jazirat Wadi Jimal, is entered through an opening in the coastal reef, about 91m wide and 27.4m deep. The head of this cove is shallow, and the shore is flat and sandy.

Anchorage, in about 14.6m, sand and mud, is available to small vessels in this cove. A chain of hills, about l mile inland, parallels the shore and rises to an elevation of about 150m.

At about half the height of this chain and under a flat-topped hill is a large white patch, which makes an excellent landmark from the direction of Jazirat Wadi Jimal.

Two landing places on the NW shore of the cove are each marked by a pair of cairns, 1.3m high, and when in range indicate a safe line of approach to the beach; however, these cairns may not be visible.

Caution.—The prevailing wind sets across the entrance of Sharm Luli, necessitating a certain amount of speed to pass through safely. However, there is little space available in the anchorage for taking way off the ship.

Gebel Hamata (Jabal Hamatah) (24°12'N., 35°00'E.), 1,910m high, is conspicuous and, although surrounded by other high mountains, towers above them. Jamal Abu Jurdi stands about 12 miles SSE of Gebel Hamata and appears on most bearings as a rather flat cone, surrounded by lower mountains.

Ras Hunkurab (24°33'N., 35°09'E.), about 4 miles SSE of Sharm Luli, is low; it rises to a conspicuous sugarloaf hill, 154m high, about 2 miles inland.

Anchorage can be taken close S of the point, in 18.3m, sheltered from NW winds. From Ras Hunkurab to Ras Banas, 53 miles SE, numerous islands, reefs, drying reefs, and dangers with less than 2m over them lie up to 9 miles off the coast.

4.16 Ras Banas (23°54'N., 35°47'E.) is the SE extremity of a promontory. The hills of the promontory are sharply divided into two parts by color difference. The white limestone hills which reach an elevation of 188m form a sinuous plateau through the length of the promontory; the darker hills consist of a mass, about 274m high, which stands near the junction of the promontory and the coast, and another mass, 191m high, near its S side about 7 miles from the extremity.

There is a ridge of moderately high hills which extends from 5 to 12 miles W and NW from Ras Banas; they slope to the low sandy ground at the E part of the promontory.

From Ras Banas to Ras Abu Darah, about 75 miles SSE, the coast is low and rocky and recedes to form Foul Bay. Mina Baranis (Port Berenice), described in paragraph 4.19, lies in the NW part of this bay; S of this anchorage the bay is encumbered with reefs and sunken rocks.

The whole coast is foul and unapproachable, except in the vicinity of Mina Baranis and Scout Anchorage, about 34 miles SSW of Ras Banas.

A mountain range, with numerous peaks, stands about 6 to 10 miles inland near the central part of Foul Bay; a sandy plain extends from the base of these mountains to the coast.

There are three main parts of this range, of which the N part is known collectively as Gebel el Farayid and whose highest peak, 1,366m high, stands about 31 miles SW of Ras Banas; from N it has the appearance of an open hand, with the E peaks resembling the fingers and the W peak the thumb.

About 3 miles SW of the highest peak of Gebel el Farayid is a flat-topped mountain with steep sides, 1,259m high.

Two miles farther S is a group of peaks, the highest of which is El Meibar (The Bodkin), sharp, conspicuous, and 1,230m high; it is so narrow it resembles a column.

4.17 Gebel Fareyid (Southern Peak) (23°18'N., 35°23'E.), the S of the three main parts of the range, is a small peaked range with the two main peaks close together, about 11.5 miles S of El Meibar; the highest summit is 612m. To the S of this range as far as Ras Abu Darah, the low and rocky coast contains no peculiar or conspicuous features.

Geziret Zabargad (St. Johns Island) (23°37'N., 36°12'E.) is the highest and E island along this stretch of coast, and also rises to a sharp peak. This barren island is bordered by steep-to coral reefs from 91m to 0.4 mile wide which render the island inaccessible, except for a small boat passage through the reef on its NE side; the summit of the island, bearing 225°, leads through this passage.

It was reported that there was a stone jetty at the inshore end of the boat passage. Rocky Island, about 3 miles SE of Geziret Zabargad, is small, steep, and rocky; a cross stood on its summit.

Caution.—A dangerous reef has been reported to lie 7.5 miles ESE of the island. It is prohibited to anchor, except in an emergency, on the coral reefs surrounding Geziret Zabargad; they have been declared a protected area

Geziret Zabargad and Rocky Island were reported to lie about 2 miles farther E than charted.

4.18 Jazirat Sirnakah (Jazirat Mukawwa) (23°50'N., 35°49'E.),34m high at its S end, appears as an inclined plane on SW bearings. This coral island is fringed by a steep-to coral reef which extends about 1 mile NW from its N extremity. Horseshoe Reef, in a position about 1 mile SW of Jazirat Sirnakah (Jazirat Mukawwa), is awash, and extends about 3 miles SSE.

A bank, with depths of 21.9 to 46m, extends nearly 1.5 miles from the SW side. The bank has two rocks on it, each with a depth of less than 1.8m. The S edge of the reef is awash and steep-to with the exception of a rock, with a depth of 1.8m, off the NE corner.

Cygnet Rock, the position of which is doubtful, lies about 7 miles W of Ras Banas and 1 mile offshore. It is a small coral patch, with a depth of less than 1.8m, and irregular depths in its vicinity. When El Meibar is only slightly open NE of the peaks of Gebel el Farayid immediately N, a sharp lookout should be kept for Cygnet Rock, over which the sea does not break.

Philadelphus Point (23°56'N., 35°36'E.), 3m high, on the S side of the promontory of which Ras Banas is the extremity, is in a position about 11 miles W of the extremity; it is yellow, cliffy and somewhat indefinite, but rises to a well-defined double summit, 188m high, about 1 mile N. There is a small cairn on the W summit.

There is a channel, about 2 miles wide, between Philadelphus Point and the reefs and rocks extending from the coast S of Mina Baranis.

4.19 Mina Baranis (Port Berenice) (23°55'N., 35°30'E.) lies in the NW part of Khalij Ful (Foul Bay). The shore consists of a low sandy plain which rises gradually to the hills about 5 miles inland; it is dotted with hillocks of drift sand. The best landing is at a small concrete jetty, with a depth of 4.6m alongside. Landing can also be effected on the N side of North Cove. It has been reported (2006) that the jetty has been extended and has alongside depths of 0.5 to 9.9m.

The outer harbor lies S and W of a sand spit, marked at its outer end by a lighted beacon, that protects the inner harbor. The inner harbor is almost landlocked and is available only to small vessels with local knowledge.

Two beacons, in range 318°, stand just N of the entrance of North Cove. The beacons are inconspicuous and the range should be used with caution.

Anchorage.—A vessel can anchor, in 25.6m, mud, sand, and coral, with the extremity of the sand spit bearing 099°, distant about 1 mile. Strong N winds are prevalent during the day, rendering the sea troublesome for boats.

Anchorage can be taken in, 12.8 to 16.5m, sand and coral, with the SW extremity of the sand spit bearing about 304°, about 1 mile distant.

At the head of the outer harbor there is anchorage, in 11 to 12.8m, off the entrance of North Cove, which is generally smooth with the prevailing winds.

Directions.—The best channel for a vessel entering this port is Middle Channel, between the S extremity of Jazirat Sirnakah (Jazirat Mukawwa) and the NE extremity of Horseshoe Reef. Steering for the 188m double summit near Philadelphus Point, bearing about 304°, leads in about mid-channel between this island and the reef.

When the S end of Jazirat Sirnakah (Jazirat Mukawwa) bears 090°, keep it astern on that bearing until the double summit near Philadelphus Point bears 321°, then steer for it. This course leads about 1 mile S of the reefs extending S from the W side of Ras Banas. Range lights situated about 1 mile WNW of Philadelphus Point, in line bearing 314°, can then be picked up to help steer clear of shoals lying SW of Cygnet Rock until a position 0.8 mile S of Philadelphus Point is reached. At this point range lights, in line bearing 270°, leads towards anchorages located SE of Mina Baranis' outer harbor.

The channel described above is the better one, but if it is desired to use South Channel between Horseshoe Reef and White

Rock, a vessel should steer with the summit of Geziret Zabarad bearing 113°, astern, until the line of bearing for the range lights W of Philadelphus Point are acquired, and then proceed as previously directed for Middle Channel.

Caution.—The beacons just N of North Cove, in line bearing 316°, lead between the dangers to the anchorage in the N part of the outer harbor. The least charted depth on the range line is reported to be 7.6m. The channel is about 68m wide.

It has been reported (2006) lesser depths than charted and dangerous rocks with unknown depths over them, as well as lighted and unlighted buoys, lie in the approaches to the port. It has also been reported (2006) that mooring buoys are located in the outer harbor. Vessels should consult local authorities for the latest information.

4.20 Scout Anchorage (23°26'N., 35°34'E.) provides good shelter during N winds, in 14.6 to 18.3m, sand, coral, and shell. Bodkin Reef, narrow and about 2 miles from shore, forms the N side of this anchorage. The sea breaks over this reef. Vessels anchor with El Meibar bearing about 282°, 11 miles distant.

There are many detached rocky heads S of the W half of Bodkin Reef, and there is foul ground W of it. A sunken rock lies about 1 mile ESE of the reef

Geziret Mureir (23°11'N., 35°44'E.) is low, sand, and lies near the middle of a labyrinth of reefs extending NW and SE.

Hassa Lagoon (22°59'N., 35°42'E.) lies about 12 miles S of Geziret Mureir. It has depths of 1.8 to 3.6m; landing can be affected at the extremity of a sandspit which forms its N entrance point, where there is a least depth of 0.9m.

The lagoon is entered through a narrow gap in the coastal reef about 3 miles N of a large mangrove in the lagoon entrance.

Marsa Shab (22°50'N., 35°46'E.) is an extensive inlet nearly blocked by the coastal reef. Two small islets stand on the fringing reef close S of the entrance and a conspicuous tree is reported to stand in the entrance.

A small, conspicuous, black conical hill, 122m high, stands about 8 miles WSW of the entrance; this hill should not be confused with another hill which has a dark, flat top and stands about 8 miles NW and about the same distance inland.

Adequate anchorage for small vessels with local knowledge is obtainable outside Marsa Shab.

4.21 Ras Abu Darah (22°41'N., 36°06'E.), lying about 19 miles ESE of the entrance of Marsa Shab, is the S entrance point of Foul Bay. The point is low and covered with bushes.

The coastline in the vicinity of Ras Abu Darah was reported to lie about 2 miles farther E than charted.

Gebel Gash Amir (22°16'N., 36°14'E.), 618m high, about 26 miles SSE of Ras Abu Darah, is an isolated mass of sharp peaks, rising abruptly from a sandy plain. From about 8 miles E of Gebel Gash Amir, a range extends about 30 miles SSE and parallel with the coast.

This range rises to considerable elevations from the coastal plain and is visible from a long distance in clear weather, but is often obscured by mist for weeks at a time, the moisture producing luxuriant vegetation right up to the summits of the mountains.

Jebel Elba, the N summit of this range, stands about 9 miles ESE of Gebel Gash Amir; it is a mass of light-colored peaks with rugged hills of darker rocks on its S and W sides. Jebel Shendidai stands about 10 miles SSE of Jebel Elba and has a prominent summit.

4.22 Jibal Asoteriba (21°52'N., 36°30'E.) stands in a position about 12 miles SSE of Jebel Shendidai and has a greenish appearance because of its vegetation.

Jabal Hadarba (22°01'N., 36°40'E.) is a small range of hills with many peaks.

Geziret al Dibia (22°25'N., 36°30'E.), small and low, is bordered by extensive reefs. A small coral islet, about 1m high, lies about 2 miles NNE of Geziret al Dibia. Two low sandy islands, known as Gezirat Halaib el-Kebir, lie on a coral reef SE of Geziret al Dibia.

The channel between the SW extremity of the S island and the coast SW has not been surveyed; it is encumbered with a sand spit that dries and connects the point to the SE.

The channel between the S side of Gezirat Halaib el-Kebir and the coast S is called Marsa Halaib. There is a moderately high coral cliff on the coast close W of Marsa Halaib.

Ras Jazriyal (22°17'N., 36°35'E.) is a coral cliff of moderate elevation. The passage between it and the off-lying islands is unsurveyed, but is reported to be narrow and shallow.

Marsa Halaib (22°15'N., 36°38'E.), sheltered and lying between Gezirat Halaib el-Kebir and the coast close E of Ras Jazriyal, is formed by a reef extending about 1 mile S from Sea Point, the SE extremity of Gezirat Halaib el-Kebir and a barrier reef extending about 3 miles NW from the mainland.

The latter reef overlaps the former, forming an entrance channel which has a least width of 122m and a least depth of 20m in the fairway. A 6m high white fort, with two flagstaffs, stands in the center of the village located near the shore about 2 miles S of Gezirat Halaib el-Kebir.

The entrance channel between the reefs, about 1 mile SSW of Sea Point, is marked by several beacons. Four of these beacons mark the N end of the barrier reef in the vicinity of Northwest Rock. It is prohibited to anchor, except in an emergency, on the coral reefs surrounding Marsa Halaib; they have been declared a protected area

4.23 Sandy Islet (22°15'N., 36°40'E.), 1m high, and numerous drying coral patches lie on the reef extending S from Sea Point. A rock, 1m high, lies on the E edge of this reef about 1 mile ESE of Sea Point.

Northwest Rock, awash, lies about 91m NNW of the beacon on the W side of the entrance of the harbor.

A spit, on which are some rocks with depths of less than 1.8m, extends about 1 mile N from Northwest Rock; a 5m shoal lies 0.4 mile N of the same rock.

The shores of this harbor, except in front of the village, are bordered by reefs, which extend as far as 0.3 mile offshore, and there are many detached shoals.

Anchorage.—A vessel anchored, in 31m, with the fort bearing 214°, about 0.3 mile distant. Temporary anchorage can be taken off the entrance of the harbor, in 17.3m, with the fort bearing about 225° and Sandy Islet bearing 336°.

Directions.—Vessels should enter Marsa Halaib before noon, when the sun is in a favorable position.

Course should be set to pass about 1 mile N of the large reef about 7 miles E of the entrance; this reef, over which the sea al-

ways breaks, has several drying rocks on it and can be seen for several miles.

The fort in the village, in range 253° with a round-topped hill, leads about 1 mile N of this reef and about 0.4 mile N of a shoal, with a least depth of 5.5m, lying about 4 miles E of the fort.

The reef extending S from Sea Point should be kept close aboard as it is more easily seen than the barrier reef, which overlaps to the W.

After passing through the N part of the entrance channel, a turn of about 150° is necessary, in a somewhat restricted space, if a vessel is proceeding to S.

Care is necessary in rounding Northwest Rock in order to avoid the shoals N.

On leaving. it is more difficult. as the ship is then turning from approximately head-on to the prevailing wind into the narrowest part of the channel, when the wind is on the quarter; in the middle of the turn, the wind is on the beam and a setting down toward the reef should be guarded against.

A coral and stone pier, with an iron pile wood-covered extension, projects from the shore ENE of the fort to the edge of the coastal reef.

In the past, the extension of this pier was in need of repair and boats are advised to come alongside with caution until the proper depths can be determined; the previous depth was reported to be 1.5m alongside the outer extremity of the extension.

4.24 Ras Hadarba (22°04'N., 36°52'E.) is formed of quicksand and fringed by reefs. Detached shoals, with less than 2m over them, lie within 3 miles of this stretch of coast. Ras Hadarba is reported to give a good radar return up to a distance of 17 miles.

It is reported that the coast in the vicinity of Ras Hadarba lies about 2 miles farther E than charted.

To the S of Ras Hadarba, the coast is fronted by numerous dangers, the approximate positions of which can best be seen on the chart. Many of the reefs are several miles in extent; one lies 12 miles from the coast. The outermost reefs are reported to lie farther S than charted.

Anchorage.—Along this part of the coast there are several indentations, most of which afford anchorage; if caution is exercised, temporary anchorage can be taken near many of the off-lying reefs.

4.25 Marsa Umbeila (22°00'N., 36°50'E.), entered about 6 miles SSW of Ras Hadarba, is a small cove affording anchorage for a vessel using a short scope of chain. A vessel can anchor, in 10m, mud, with the stern swung toward the head of the cove in 4.6m, coral rocks.

Marsa Marob (Khor el Marob) (21°50'N., 36°50'E.) is reported to lie 2 miles S of its charted position. It is also reported to be much smaller than charted and to have only one arm; this bay is impractical for use by vessels over 61m in length.

It was reported that the inlet charted in the latitude of Marsa Marob was large, but did not have the charted S branch. The inlet was reported to provide good anchorage for vessels up to 30m in length.

4.26 Marsa Gwilaib (21°46'N., 36°52'E.) lies about 4 miles S of Marsa Marob and has been reported to lie about 2 miles S of its charted position. The entrance is narrow and fringed with reefs, which extend about 0.3 mile ESE from its N and S entrance points.

There is anchorage for small vessels, in 12.8 to 14.6m, mud and sand, about 0.4 mile from the head of the cove; anchorage, in 18.3m, can be taken in the N bight, a little less than 0.5 mile within the entrance.

Marsa Abu Asal (21°43'N., 36°52'E.), in a position about 2 miles SSE of Marsa Gwilaib, is larger than those inlets described above.

The N entrance point is low and sandy, with the coastal reef extending about 0.3 mile off. The S entrance point is a coral rock, 1.8m high, with the coastal reef extending about 0.3 mile off.

There are depths of 24 to 59m in the entrance, decreasing to 18.5m at the head of the inlet, where it opens into three bights. There is sufficient swinging room for a vessel to anchor in a central position.

4.27 Marsa Abu Imamah (21°30'N., 36°57'E.), about 37 miles S of Ras Hadarba, is about 2 miles long. It is a flat-topped hill of a low range extending parallel with the coast and terminating, about 10 miles SSE, in small straggling hillcocks close S of Marsa Shinab.The coastal reef extends about 1 mile E from the entrance points. The entrance is visible only in good light. The entrance channel is about 0.2 mile wide, narrowing to about 183m in the fairway between the entrance points, with depths of 21.9 to 27.4m.

A beacon, 4m high with a cone topmark, point up, stands near the E extremity of the reef off the N entrance point. From the entrance points, the channel deviates from a W to a SW direction.

Middle Shoal, with a least depth of 0.3m, coral, lies in mid-channel about 1 mile SW of the S entrance point of Marsa Abu Imamah. The shoal is about 183m in extent and has a channel about 37m wide between it and the reef to N, and another channel about 91m wide between it and the reef to S.

Anchorage.—The most convenient anchorage is NNE of Middle Shoal, E of the entrance of the N bay, in 21.9m. The inner anchorage, S of Middle Shoal, has depths of 14.6 to 18.3m, mud and coral, good holding ground, and can be approached on either side of this shoal.

Directions.—Jabal Abu Imamah is a good landmark for a vessel approaching the inlet. There are two conical hills, about 152 to 198m high, standing W of the head of the inlet; these hills, in range about 250°, lead toward the entrance.

Vessels should keep to the N of the channel between the entrance point and the sandspit on the NE side of the entrance of the N bay, about 1 mile within the entrance, as the reefs on that side are steep-to.

4.28 Marsa Halaka (21°25'N., 37°00'E.), entered about 5 miles SSE of Marsa Abu Imamah, has a least width of 60m between the reefs, but widens to about 183m further in.

Small vessels can anchor in this inlet, but there is no swinging room until 1.5 miles within the entrance.

There are depths of 32.9m in the entrance and about 20m within.

Shaab Halaka lies NE of the entrance to Marsa Halaka. The

sea generally breaks over this reef; a sunken rock with a depth of less than 1.8m, lies about 2 miles NW of its W extremity.

Marsa Shianab (21°21'N., 37°03'E.) lies about 5 miles SSE of Marsa Halaka. The coastal reef extends about 1 mile E from the entrance points; the coastal reef on the N side of the entrance, which is about 183m wide, is more easily seen than that on the S side, as some parts of it are above water. There are depths of 27.4m in the entrance.

The inlet terminates in three small bights; the shores of the inlet are fringed with reefs and the fairway has a least width of about 91m. Depths shoal to 12.8 to 18.3m near the head of the inlet. A shoal, with a depth of 3.7m, and a reef, which dries, lie in the entrances of the N and S bights, respectively.

The best anchorage appears to be well up in the inlet. A hill, with a projection from its S and highest edge, stands near the head of Marsa Shianab; this hill is sometimes difficult to distinguish because of the high land to the W.

A reef, about 2 miles in extent, lies about 5 miles NE of Haycock, and about 3 miles from shore. A sunken rock lies about 3 miles ENE of the S extremity of this reef. The sea seldom breaks on this rock and it is difficult to see, even from aloft.

There is deep water between and around the reef and the sunken rock.

Haycock (21°19'N., 37°02'E.), about 2 miles S of Marsa Shianab, is the next to last peak of the low range extending SSE from Jabal Abu Imamah. Jabal Shinab, 1,375m high and notched at its summit, stands about 22 miles W of Haycock.

Directions.—A vessel should approach the inlet when the sun is in the E as the reefs ahead can barely be made out when the sun is in the W. The hill near the head of the inlet in range 259° with Jabal Shinab, leads from seaward towards the entrance, passing between the reefs on either hand.

4.29 Ras Abu Shagrab (Ras Abu Shajarah) (21°04'N., 37°19'E.), the SE extremity of a peninsula, is low and sandy. The peninsula rises to an elevation of 39m about 3 miles SW of Ras Abu Shagrab. From a distance NE, the S part of this peninsula has the appearance of an island, but the absence of off-lying islets should prevent it from being mistaken for Mukawwar, about 9 miles farther S. On closing the land the low coast of the peninsula will be visible from aloft.

Between Ras Abu Shagrab and Marsa Salak al Kabir, about 37 miles SSW, the coast is indented by Dungunab Bay, and is fronted by numerous islets and dangers up to 16 miles offshore. A mountain range, the N extremity of which lies 25 miles WSW of Ras Abu Shagrab, extends 34 miles S and is a good landmark.

Jabal Erba (20°50'N., 36°52'E.), 12 miles from its N extremity, rises to an elevation of 2,217m. On the N part of this range are two small rugged peaks, the N of which is visible from a great extent of coast. There is a small peak with a flat summit close N of Jabal Ebra.

Dabadib (20°39'N., 37°07'E.), a hill, about 17.5 miles SE of Jabal Erba and about 5 miles inland, is a good landmark. It lies at the S end of a range of hills which extends parallel with the coast to a short distance N of Muhammad Qawl, about 15.5 miles N. Between this range and the coast is a sandy plain, with some scrub in places, rising gradually to an elevation of about 30.5m at the foot of the hills.

Dungunab Bay (Khalij Dunqunab) (21°03'N., 37°12'E.) is a large area indenting the coast for 15 miles between the mainland and Ras Abu Shajarah. The entrance to the bay, which lies SW of **Ras al Keedan** (21°00'N., 37°15'E.), is encumbered with islets and dangers, but the bay provides good anchorage, in depths of 13 to 40m.

Abu Gosha (20°57'N., 37°13'E.), an above-water rock, about 2.4m high and covered with bushes, lies on a reef in the entrance of the bay, in a position about 3 miles SW of Ras al Keedan. Sararat, an islet 1.8m high, lies about 2 miles WSW of Abu Gosha, on a reef extending about 1 mile ENE from it.

A line of reefs and low islets extends about 4 miles SE from Sararat; a chain of reefs and rocks extends W from Sararat to the coast. Sararat and another low islet, about 2 miles SE, are covered with low thick shrubs.

4.30 Abington Reef (20°54'N., 37°27'E.) is an above-water coral reef. Strong W currents have been experienced in the vicinity of this reef. The reef is marked by a light.

Angarosh, a sandy islet, 2m high, lies on a reef about 2 miles SSW of Abington Reef.

Shambaya Island (20°52'N., 37°24'E.), about 1m high, lies near the SW end of a reef extending about 3 miles NW. Close NE of this reef and separated from it by a channel about 0.1 mile wide is another reef which extends parallel.

A detached coral head, about 1 mile S of Shambaya Island, is marked by an iron rail, about 1m high. The SE entrance of the channel between the reefs is marked by pairs of beacons.

Jazirat Mayteb (20°48'N., 37°20'E.) consist of two islets on the E side of an extensive reef. These islets lie on the SW side of a deep channel leading NW and joining with a channel leading to Dungunab Bay, about 3 miles N of Jazirat Magarsam.

The larger islet, which lies on the SE side of the reef, is 37m high and covered with small trees and shrubs; its SE side is barren and precipitous. The smaller islet, about 1 mile NW of the larger islet, is 2m high. On the NE side of this channel, there are numerous coral patches lying W of Shambaya Island.

The W and SW patches, lying about 6 miles WNW and 4 miles W, respectively, of Shambaya Island, are each marked by an iron rail, 1m high. This channel should be used only under favorable light conditions.

4.31 Jazirat Magarsam (20°48'N., 37°16'E.), 94m high, is a tableland of rocky sandstone, with steep cliffs apparently eroded by heavy rains. It has a sterile appearance, with only rock and barren sands, except near its S extremity, where there are some mangroves. This island is fringed with a reef, the N part of which is extensive, but which has not been examined.

Gad Mesharifa, an islet 1.2m high, lies at the NW extremity of this reef, about 4 miles NW of Jazirat Magarsam A beacon stands about 183m W of this islet. The NE extremity of this reef is marked by Beacon No. 1, about 3 miles E of Gad Mesharifa.

An iron rail, 1m high, marks a detached coral head about 0.3 mile ENE of Beacon No. 1.

These dangers lie on the S side of the channel leading W to Rawaya Anchorage from a position about 3 miles N of Mukawwar. A 5.5m patch lies about 2 miles WSW of Gad Mesharifa.

On the N side of this channel is Mesharifa, an islet about 1.8m high, lying about 1 mile NNW of Gad Mesharifa and at

the SW extremity of the reef extending S from Ras al Keedan. A beacon stands about 183m SE of Mesharifa.

The channel between Gad Mesharifa and Mesharifa, swept to a depth of 4.5m, has a least depth of 4m about 0.2 mile N of Gad Mesharifa. Strong W currents have been experienced in the vicinity of Mesharifa.

4.32 Rawaya Anchorage (20°54'N., 37°12'E.), the outer anchorage for Muhammad Qawl, is of considerable extent and lies S of the chain of reefs and rocks extending W from Sararat, and W of the line of reefs and islets extending SE from the same islet.

There are depths of 7.3 to 48m in the anchorage, but patches of 4.5 and 5.5m lie on the N and E sides of the anchorage; shoal patches lie as far as 1 mile from the W side. A good berth in Rawaya Anchorage is in 12.8m, sand, good holding ground, with the fort at Muhammad Qawl bearing 251° and Gad Mesharifa bearing 124°, about 8 miles SW of Ras al Keedan. There is a custom house and a conspicuous fort in the village. A pier, with a depth of 1.2m at its head, extends across the coastal reef in front of the village.

Anchorage, in 12.3m, can be taken about 0.2 mile SE of the head of the pier. This anchorage was reported to be unsuitable for a prolonged stay because of the restricted swinging room.

Three pairs of range beacons lead through the reefs and shoals fronting the anchorage off Muhammad Qawl, in a least depth of 8.2m. The S and principal approach to the anchorages W and NW of Jazirat Magarsam leads S of Jazirat Mayteb and S and W of Jazirat Magarsam.

4.33 Qitael Banna (20°41'N., 37°24'E.), a steep-to patch which dries 0.6m, lies on the S side of this passage. A small rocky patch, which dries 0.6m, lies about 3 miles SW of the larger Jazirat Maytib. It is marked by a beacon. A rock, awash, and a 2.7m patch lie about 0.2 mile and 0.3 mile N, respectively, of this rocky patch.

Merlin Rock, with a depth of less than 1.8m, lies about 3 miles ESE of the S end of Jazirat Magarsam. A beacon marks the S end of a rocky spit extending about 1 mile SSW from the S end of Jazirat Magarsam. A sandy patch, which sometimes dries, lies near the S end of this spit.

Anchorage.—Anchorage can be taken by small vessels, in 21.9m, mud, about 1 mile SE of the S end of Jazirat Magarsam. It may also be taken off the W side of Jazirat Magarsam in suitable depths.

4.34 Powell Rock (20°42'N., 37°15'E.), with a depth of 2.7m, lies about 3 miles SSW of the S end of Jazirat Magarsam. Numerous shoals lie on the S side of this passage between Powell Rock and Merlin Rock.

Brandon Rock (20°45'N., 37°12'E.), with patches of 3.6 and 5.5m, lies about 4 miles WNW of the S end of Jazirat Magarsam. The sea sometimes breaks over this rock.

Directions.—Vessels should approach this passage with the high land of Jazirat Magarsam bearing 258°, until Angarosh bears 348°, distant 3.5 miles. Then steer 245° for Dabadib, which leads between the dangers on either side. A stranded wreck lies on the coastal reef about 6 miles ENE of Dabadib.

The sandy patch near the S end of the rocky spit extending SSW from the S end of Jazirat Magarsam usually shows well with the sun behind the observer.

When the W extremity of Jazirat Magarsam bears 006°, vessels should steer NNW, passing E of Brandon Rock. Care is necessary to avoid the 5.5m patch WSW of Gad Mesharifa.

Local knowledge is required for the channels and anchorages described above.

4.35 Jazur Tilat (20°38'N., 37°15'E.), three in number, lie about 7 miles S of the S extremity of Jazirat Magarsam. The E island is 3m high and the middle one is 2m high; all three are covered with bushes. They are surrounded by reefs and sunken rocks, over which the sea sometimes breaks; the two outer reefs, with depths of less than 1.8m, lie about 6 miles ESE and SSE, respectively, of the E island.

Marsa Salak al Kabir (20°27'N., 37°11'E.), small and almost landlocked, lies on the W side of a sand spit which projects about 2 miles SW. The entrance lies between the extremity of the sandspit and some sunken rocks S; the discolored water over the rocks is visible in clear weather.

An iron beacon stands on a sunken rocky patch about 1 mile SE of the extremity of the sandspit.

Anchorage.—Anchorage can be taken, in 16m, mud, surrounded by patches of sunken rocks. It is doubtful whether the sunken rocks in the entrance afford much protection from strong S winds.

Directions.—Vessels enter the bight through the channel W of the beacon, and pass along the coastal reef; this channel is about 0.3 mile wide and has a least known depth of 10.9m.

Vessels should then pass close around the extremity of the sand spit and into the bay. The entrance is intricate, and the eye is the only guide.

4.36 From Marsa Salak al Kabir to Bur Sudan, about 51 miles S, the coast is indented by numerous inlets, some of which provide anchorage.

Jibal Milagweb (20°29'N., 36°48'E.), about 22 miles WSW of Marsa Salek al Kabir, is 1,798m high and bears some resemblance to a chimney.

Jebel Oda (20°20'N., 36°38'E.), about 12 miles SW of Jibal Milagweb, is 2,259m high. When seen from off Marsa Salak al Kabir, its summit is just visible above the N edge of a dip in Jebel Saghum, which is about 335m high, and stands about 17 miles ESE of Jibal Milagweb.

Jebel Oda is round and elongated when seen from off Marsa Arhayay and Marsa Awetiri. It has the appearance of a cone with a sharp peak, while off Bur Sudan it appears to have a rugged peak.

Jabal Gumaderiba (20°05'N., 36°43'E.) is a sharp rocky peak whose appearance does not alter much from seaward, although there is a shoulder on its S side. Between the coastal reef and the numerous off-lying dangers, some of which have not been surveyed, lies the Inner Channel.

There are depths of 26 to 44m in the narrow part of the channel, which is generally deep elsewhere. The Inner Channel is useful to small coastal craft as the water is smooth, but local knowledge is required.

4.37 Jebel Bawati (19°50'N., 36°50'E.), a range with six summits, extends about 16 miles SSE from Jebel Gumaderiba and stands about 23 miles inland. Between Jebel Bawati and

the coast is another group of ranges, much lower in elevation.

From this group, a wide plain, flat and level in appearance, slopes gently to the shore which, in this area, has an elevation of about 0.6 or 0.9m.

Close off the coastal reef, about 6 miles SSE of Marsa Salak al Kabir and 1.5 miles offshore, there are three shoal patches close together. Under normal conditions they show up well, with one or two coral heads usually being visible, and can be left on either hand.

A concrete beacon marks the reef about 6 miles SSE of Marsa Salak al Kabir. A similar beacon marks another reef on the E side of the channel, about 5 miles SSE of the above-mentioned beacon.

Anchorage can be taken at Marsa Salak al Kabir and S of it, or in the vicinity of the off-lying reefs.

Caution.—In cloudy weather, it is sometimes difficult to make out sunken rocks and patches; it is then advisable to anchor.

4.38 Marsa Awetiri (20°10'N., 37°12'E.) is a gap in the coastal reef. It is about 0.3 mile in extent with depths of 48m, mud, in mid-channel, shoaling to 14.6m near the reefs.

A small vessel may moor, head and stern, in 37m, with one anchor as close to the N reef as possible, using a short scope of cable.

There is a conspicuous tree reported in the vicinity of this cove. About 2 miles S there are some disused salt works.

Two beacons stand on the W edge of a reef, in a position about 6 miles SSW and 8 miles S, respectively, of the beacon on the S extremity of **Shaab Suadi** (20°10'N., 37°17'E.).

A beacon stands on a detached reef on the E side of the Inner Channel, about 13 miles SSE of the beacon on the S extremity of Shaab Suadi.

Shaab Rumi (19°56'N., 37°25'E.), about 13 miles SE of the beacon on the S extremity of Shaab Suadi, rises abruptly from depths of 366 to 732m. It is always visible, and the sea breaks on its outer edge. A beacon stands near the S extremity of Shaab Rumi. Strong W currents have been observed in the vicinity of Shaab Rumi.

From a position about 4 miles SW of Shaab Rumi, a chain of small broken reefs, the S of which are known as Le Mercier Shoals, extends about 9 miles SW; they are marked at their N end by a framework beacon, standing about 11 miles SSW of the beacon on Shaab Rumi, and at their S end by a concrete beacon, standing about 3 miles SW of the N beacon.

4.39 Marsa Figga (Marsa Fijab) (20°02'N., 37°12'E.) is entered through a break in the coastal reef. The entrance is narrowed to about 91m by an islet lying on the edge of the coastal reef.

The N side of the entrance channel is marked by three concrete beacons, each 4m high, standing about 0.6 mile ESE, about 1 mile E, and close S of the islet.

The inlet decreases in width N to a muddy creek at its head; it is encumbered with reefs and shoals, on which are many islets, which reduced the anchorage area to such an extent as to be suitable for small craft only.

Anchorage can be taken in the entrance channel, in about 21.9m, sheltered from all but S winds.

Marsa Arus (20°00'N., 37°11'E.), the entrance of which is about 91m wide, lies about 2 miles S of the entrance of Marsa Figga; this inlet is available only for boats.

A tower, visible from seaward, is square-topped and 5m high; it stands in a position about 3 miles SW of the head of this inlet.

The shore between the S entrance point of Marsa Arus and the entrance of Marsa Daror, about 10 miles SSE, is about 1m high, with ridges of coral that are slightly higher. It is backed by a sandy plain, which rises gradually to the base of the hills and mountains several miles inland.

Marsa Daror (19°50'N., 37°16'E.), at the mouth of the largest valley in this region, is entered through a break in the coastal reef, about 137m wide. A stone pier, in ruins, at the NE extremity of the W islet, affords landing for boats. A conspicuous white house stands on the mainland, about 2 miles WSW of the entrance.

Anchorage.—Anchorage in an area about 0.1 mile in extent, in 9.1 to 12.3m, can be taken outside and S of the entrance, between a detached reef and the coastal reef; there is little swinging room here, and it is well to have a stern anchor to the reef to SW as a precaution at night against squalls off the land, which are not unusual.

Vessels can anchor, in 7.3 to 18.3m, N of the detached reef and about 1 mile NE of the entrance; it is particularly exposed to N winds.

Directions.—From seaward, the position of the E islet is marked by the previously-mentioned conspicuous white house. The house bearing 249° leads to the front entrance of the inlet. The SE extremity of the reef on the N side of the entrance is marked by small boulders, but the S entrance point is difficult to see, particularly in calm weather.

Approaches to Bur Sudan

4.40 From seaward, the mountains from a position S of Jabal Erba to a position abreast Port Sudan are suitable, in clear weather, for bearings at a distance of about 40 miles from the port.

Jebel Tagwiai (19°55'N., 37°03'E.), in a position about 14 miles E of the N part of Jebel Bawati, has two summits, 369m high, which have nearly the same appearance; they are in range when bearing 257°. Conspicuous is a long hog-backed range, 741m high, about 11 miles SW of Jebel Tagwiai, and which shows up as a single peak from Bur Sudan.

Jibel Asotriba (19°34'N., 36°55'E.), a poorly-defined summit, 1,365m high, is a good mark when not obscured by clouds.

Sanganeb Reef (19°45'N., 37°27'E.) is the easternmost danger in the N approach to Bur Sudan. It is a steep-to atoll on which the sea generally breaks. The depths around it exceed 549m. The remains of a disused light structure stand close W of the existing light.

The light structure is reported to give a good radar return up to a distance of 20 miles.

Tides—Currents.—Currents of considerable strength have been experienced in the vicinity of Sanganeb Reef. Northerly and W currents have been reported throughout the year, particularly during the summer, and contrary currents have been reported, chiefly during the winter months. Silayet South End Light and Nimra Talata Light, both of which are equipped with racons, are shown from near the S and E extremities of **Wingate Reefs** (Silayet) (19°38'N., 37°18'E.).

Bur Sudan Harbor

Silayet South End Light is reported to be sometimes hard to distinguish as the lights of the port are much brighter. A beacon stands 1 mile NNE of the light. This beacon bearing 036° indicates the NW limit of Wingate Reefs.

Strong W currents have been experienced in the vicinity of Wingate Reefs.

Caution.—The sunken wreck Umbria lies 1 mile N of Silayet South End Light. Due to the existence of explosives in the wreck, vessels are advised not to enter the cautionary area surrounding and SW of the wreck.

Bur Sudan (Port Sudan) (19°36'N., 37°14'E.)

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4.41 Bur Sudan is an excellent natural harbor consisting of a deep sheltered inlet which indents the coast nearly perpendicularly, then branches off into two narrow arms. In the past few years, this port has fallen into a state of disrepair.

This inlet is, for the greater part, bordered by reefs, which are visible, but it is free from dangers in the fairway. Port Sudan harbor is bounded by imaginary lines, as follows:

1. From Nimra Talata Light in a 312° direction to the coast.
2. From Nimra Talata Light in a 159° direction for 9.5 miles, then in a 180° direction for 3 miles, then in a 270° direction to the coast.

This includes the coastal area from close N of Marsa Gwiyai to about 10 miles SSE of Bur Sudan.

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Winds—Weather.—Prevailing NE winds from October to June generally allow safe anchorage and boat work in the harbor. Short sharp rain squalls from October to January are accompanied by winds which are seldom of sufficient velocity to cause much uneasiness.

Between July and September, squalls known locally as haboobs blowing from SE through W, however, may reach gale force. These may occur without warning or with slight warning by the approach of dust clouds from W.

During haboobs from the W, visibility decreases to less than 46m because of the dust and blowing sand; temperatures may rise to as high as 52°C. The squalls are of 30 minutes duration, and vessels should not be lying to their own anchors during their occurrence.

Bur Sudan—Berthing Information

Berth	Length	Minimum depth	Maximum vessel		Remarks
			Length	Draft	
North Port					
1-5A	825m	8.7m	182m	8.7m	General cargo and molasses.
6-7	366m	10.7m	182m	10.6m	General cargo and edible oil.
8-9	366m	10.7m	182m	10.6m	General cargo and edible oil.
11-11A	98m	8.7m	153m	8.7m	Cement.
12	110m	8.4m	—	—	General cargo.
13	113m	8.4m	—	—	General cargo.
South Port					
15	199m	10.7m	198m	10.6m	General cargo and bulk grain.

Bur Sudan—Berthing Information					
Berth	Length	Minimum depth	Maximum vessel		Remarks
			Length	Draft	
16	128m	10.7m	182m	10.3m	Petroleum products and ro-ro vessels.
17-18 (including extension	422m	12.6m	275m	11.5m	Petroleum products and containers.
Green Terminal					
21-24	608m	14.2m	—	—	General cargo and vehicles. Located E of Port Sudan.

Strong N gales are likely to occur in December and January.

Tides—Currents.—Tides at Port Sudan are hardly perceptible, the mean range of tide being only 0.3m.

There is a seasonal variation of about 1m in the local water level because of changes in barometric pressure.

The highest level is reported to take place in the winter months. The set of currents in the Red Sea is extremely variable and affected by several factors.

The velocity of currents increases rapidly in the vicinity of off-lying reefs; these should be given a wide berth.

While some swell enters the harbor at Bur Sudan at times, it is not serious and the port is relatively sheltered from all directions.

Depths—Limitations.—The harbor will accept vessels up to 275m in length and with drafts up to 11.3m. Fifteen berths are available throughout the harbor, with alongside depths ranging from 8.6 to 12.2m; in winter, alongside depths may increase. Berths 17-18 have been extended W; the area N of the extension has been dredged (2005) to a depth of 12.6m.

A turning circle, with charted depths of 10.1 to 18.3m, is located at the head of the harbor close WNW of Berth 13.

Aspect.—The coast is regular in the vicinity of Port Sudan, the land in the vicinity of the port being a plain with a few elevations and clumps of bushes. The land gradually rises to the foothills about 7 miles inland. The sea area of the port presents a completely different aspect, being complicated by elements of the great coral reef system of the Red Sea.

The barrier reef fronting the coast is broken by a 6 mile wide gap of open water in the vicinity of the port, with depths exceeding 594m. This gap provides access to the port, as well as the Inner Channel paralleling the coast inside the reefs.

Port Sudan Light is shown from a stone tower with a white band, 22m high, standing on the edge of the coastal reef 1.2 miles SE of the harbor entrance.

Stranded wrecks and a wreck, awash, are located up to 5 miles SSE of Port Sudan Light and are best seen on the chart. The stranded wreck 3.5 miles SSE of Port Sudan Light was reported to appear as a vessel at anchor.

Several conspicuous oil tanks and a grain silo stand on the S side of the harbor entrance. Three 65m high radio towers stand about 1 mile NW of the silo. Two conspicuous water towers stand on the harbor's E shore, about 1 mile N of the harbor entrance.

Pilotage.—Pilotage is compulsory for all vessels as, once within the reefs, it is almost impossible to do any close maneuvering. The pilot boards about 1 mile E of the harbor entrance.

Pilotage is available 24 hours for vessels up to 198m in length. Pilotage is available during daylight hours only for vessels greater than 198m in length. Pilots will proceed out to all merchant vessels sighted approaching by day and night, whether signaled for or not.

Pilots can be reached on VHF channel 14 and vessels are advised to maintain a listening watch on VHF channel 14 to enable them to receive any instructions from port control.

When the port is full, vessels may be directed to proceed, during daylight only and after the pilot has boarded, to Towartit Reef Anchorage. It was reported (1990) that vessels may be directed to an alternative anchorage N of Silayet.

Vessels arriving by night, and not wishing to enter the harbor before daylight, should not approach within 20 miles until such time as is necessary to make the pilot boarding area by the time desired at their normal speed.

Regulations.—The port is under the control of the Port Superintendent of the Sudan Government Railways. The Port Manager regulates the berthing of vessels and the loading, unloading, and storage of explosives. A copy of the harbor regulations should be obtained. The port office is at the N end of Main Quay. Main engines should not be put out of action without permission from the Port Manager.

Special regulations are in effect for vessels carrying petroleum, a copy of which should also be obtained. Vessels carrying petroleum should, on approaching the harbor, display a red flag by day and a red light, at the masthead, at night.

Tugs, whether free or having tows, shall at all times make way for deep-draft vessels in any part of the harbor or entrance. Vessels leaving the port have the right of way over vessels entering.

Vessels over 15 years old are required to produce a Seaworthy Certificate, which must include a statement that cargo handling equipment is capable of handling all cargo embarked.

The vessel's ETA should be sent 24 hours in advance, including the following information:

1. Vessel's name.
2. Call sign.
3. Nationality.
4. Dimensions.
5. Destination berth.
6. Services required.

Vessels approaching the harbor are requested to maintain a listening watch, while at anchor and until the pilot has boarded, on VHF channel 14 to receive instructions and to request pilot service from Port Control before reaching 2 miles from the har-

bor. This listening watch should also be maintained by departing vessels from 2 hours before departure until clear of the harbor.

Vessels departing or shifting berths should obtain permission from Port Control, on VHF channel 14, prior to departing the berth.

Contact Information.—Port Sudan Port Control can be contacted, as follows:

1. Call sign: Port Sudan Port Control
2. VHF: VHF channels 14, 16, and 19
3. Telephone: 249-311-820544
4. Facsimile: 249-311-820544
5. E-mail: spcp31@sudanports.gov.sd

The Port Authority can be contacted, as follows:

1. Telephone: 249-311-822061
2. Facsimile: 249-311-822258
3. Telex: 984-70012 RASMINA SD

Anchorage.—In addition to the Main Quay berths, there are four anchorages in the inner harbor, with ample water and reasonable holding ground, where vessels may load and discharge by means of pontoons (but not between July and August 31).

Anchorage may be obtained on soft coral and mud about 0.4 mile within the harbor entrance. Lights in line bearing 314.5° are occasionally shown, with the front near Hotel Jetty and the rear from government offices 183m NW, to indicate the anchor berth. Anchorages are allocated by the port authorities.

During certain seasons of the year, June to September, it may be advisable to keep engines on short notice.

Steel mooring posts are situated on the NW shore of the harbor, to which the sterns of vessels can be secured after anchoring. There are also mooring buoys in the harbor.

The anchorage areas in general have good holding ground, except in the N part, where it is reported to be poor.

Vessels should avoid anchoring in an area S of a line drawn due E from Berth 16, due to the presence of submarine cables.

Anchorage is prohibited in an area on the W side of the harbor, best seen on the chart.

Directions.—It is reported that during certain periods, the land in the vicinity of the port cannot be seen from seaward of the reefs; therefore, the coast should not be approached too closely until a definite landfall has been made.

It is advisable to make the harbor before noon, taking into consideration the sun's glare and the contour of the land.

Currents are irregular in the port's approaches and should be watched for.

The best approach from seaward is S of Sanganeb Reef; from E; the best time to make Sanganeb Reef is just before dawn, as the light structure is difficult to pick up with the afternoon sun, and, at times, no landmarks are visible.

Vessels from N should pass about 2 miles S of Sanganeb Reef Light and steer to a position about 2 miles SE of Silayet South End Light, and then alter course about 1 mile S of the same light.

From S, Hindi Gider Light should be made and passed to the N at a distance of 8 miles or so, to ensure clearing North Jumnah Shoal, which is marked by a light. Then set a course for the pilot boarding area as described above.

The channel through the harbor is well-marked by lighted beacons and a lighted range, in line bearing 305°, although it has been reported that the range may be difficult to distinguish. Care should be taken not to confuse the entrance range lights with the anchorage range lights within the harbor.

4.42 Al Khair Oil Terminal (19°35'N., 37°15'E.) (World Port Index No. 47942) is located S of Port Sudan.

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It has a total length of 310m, with an alongside depth of 14.6m. Vessels of 10,000 to 50,000 dwt, with a maximum length of 221m and a maximum draft of 13.3m at high water, can be accommodated.

Pilotage is compulsory. Pilots can be contacted on VHF channel 6 and board about 1 mile E of Bur Sudan harbor entrance.

Vessels must send their ETA to the terminal manager 48 hours in advance by e-mail, facsimile, or via the agents.

Vessels are berthed during daylight hours only but may unberth at any time.

The terminal can be contacted, as follows:

1. VHF: VHF channels 67 and 68
2. Telephone: 249-311-824892
   249-249-912361085 (mobile)
3. Facsimile: 249-311-824892
4. E-mail: damadama4@yahoo.com

Port Control can be contacted on VHF channel 14.

4.43 Bashayer Oil Terminal (19°24'N., 37°19'E.) (World Port Index No. 47944), a tanker crude oil-loading facility, is approached from N of Towartit Reef. The facility consists of two single point moorings (SPM). Bashayer I SPM is the northernmost SPM and Bashayer II SPM is the southernmost SPM.

Winds—Weather.—The prevailing winds are from the N; these winds may have gusts up to 35 knots in winter, but tend to be variable and light to moderate at other times. Without the N winds, there is a tendency for winds to veer towards the shore in the middle of the morning.

In summer, offshore winds are normally the strongest; gusts up to 60 knots can occur.

Tides—Currents.—The tides are usually diurnal, with a mean spring range of about 1.4m.

Currents in the area set mainly S and run parallel to the coast, rarely exceeding 1 knot.

Depths—Limitations.—The controlling depth in the approach channel is 50m.

There are charted depths of 55m at Bashayer I SPM and 68m at Bashayer II SPM. Vessels up to 300,000 dwt can be accommodated.

Pilotage.—Pilotage is compulsory and available during daylight hours only. Upon arrival off Bur Sudan, vessels should contact the Port Sudan Signal Station on VHF channel 14 to obtain the pilot boarding time and other instructions. The pilot boards, as follows:

1. Channel pilot—About 1 mile E of Port Sudan Light, in position 19°35.5'N, 37°16.0'E.
2. SPM pilot—3 miles N of Bashayer I SPM. This pilot boarding position is the handover point with the channel pi-

lot.

The pilot boarding time is usually between 0600 and 0700, depending on the time of year.

Pilot Office and pilot vessel contact information can be found in the table titled **Bashayer Oil Terminal—Contact Information.**

Regulations.—The vessel's ETA must be sent to the terminal, via the agent, 7 days, 5 days, 72 hours, 48 hours, 24 hours, and 12 hours in advance. The ETA should be reconfirmed if it changes by more than 2 hours.

Berthing is permitted during daylight hours only. Unberthing may be done at night at the discretion of the mooring master.

Vessels older than 20 years old will not be accepted for loading at the terminal.

Upon arrival off Port Sudan, vessels are required to contact the Port Sudan Signal Station on VHF channel 14 to obtain the pilot boarding time, if available, together with any further instructions.

Contact Information.—Contact information on the Marine Supervisor of the facility can be found in the table titled **Bashayer Oil Terminal—Contact Information.**

Anchorage.—Anchorage is not recommended off the terminal.

Caution.—A restricted area, with a radius of 1 mile, surrounds the terminal. Navigation in this area is only allowed with a pilot on board.

4.44 Sawakin Harbor (19°08'N., 37°21'E.) lies about 30 miles SSE of Bur Sudan. The intervening low coast consists of a raised coral reef intersected by dry water courses. A flat sandy plain rises gently to the mountains and is covered by small shrubs and coarse grass which spring up during the season of winter rains.

During the winter, the mountains are frequently hidden for long periods by haze or clouds, but some of the hills between them and the coast usually remain clearly defined.

To the S of Sawakin Harbor, the coastal plain begins to widen and extends inland as much as 40 miles. A chimney, the position of which is approximate, stands about 3 miles S of the entrance of Port Sudan and about 1 mile inland; a flare is shown close E of the chimney.

A large oil refinery stands about 3 miles S of the entrance of Port Sudan and about 1 mile inland.

Jebel Hadaraweb is a group of irregular hills, about 10 miles inland, midway between Bur Sudan and Sawakin Harbor. The central peak of the group is 490m high and a good mark.

Another peak, 500m high, 1.5 miles SW of the central peak, appears as a blunt cone from the S.

Jebel Waratab (19°07'N., 37°11'E.), 627m high, is the highest and most prominent conical hill in this vicinity; its summit forms two small knobs. From a distance, it appears as a truncated cone, except on SW bearings, when it appears almost sharp.

Jebel Gararat, 618m high and about 2 miles W of Jebel Waratab, is rounded with a long sawtoothed shoulder. On SW bearings, a conspicuous shining white patch is frequently visible below this peak.

Jebel Hamob Adarob (North Saddle), about 4 miles SW of Jebel Waratab, and Jebel Hamob Hadal (South Saddle), about 3 miles farther S, are two saddle-shaped hills which are quite conspicuous. Jebel Hamob Adarob is frequently difficult to see because of its color, and Jebel Hamob Hadal loses its shape when bearing N of 278°.

A small wedge-shaped hill, 252m high, lying about 4 miles NE of Jebel Hamob Adarob, is a good mark. Extensive reefs, at the N end of which is North Towartit Reef, extend about 23 miles SSE from a position about 7 miles SE of the entrance of Port Sudan.

Bashayer Oil Terminal—Contact Information		
Method	**Contact**	**Times available (local time)**
Pilot Office		
VHF	VHF channel 10	0700-1200 and 1400-1700
Telephone	249-311-838007	0700-1200 and 1400-1700
	249-912-310394 (mobile)	0700-1900
E-mail	pilots.portsudan@gnpoc.com	
Pilot Vessel		
VHF	VHF channel 10	0700-1900
Bashayer I SPM		
VHF	VHF channel 10	When vessel is loading at the SPM
Bashayer II SPM		
VHF	VHF channels 9 and 72	
Marine Supervisor		
Telephone	249-912-310392 (mobile)	0700-1900
	249-311-838007	0700-1200 and 1400-1700
E-mail	omarine.portsudan@gnpoc.com	

These reefs are separated from the coast by a continuation of the Inner Channel. The E edge of these reefs extends SE and then S for about 15 miles to Heyman Reef and then 3 miles farther S to Williamson Shoals. Both of these dangers seldom break.

To the S of Williamson Shoals, no dangers have been found seaward of the reefs. However, vessels should not attempt to pass W of a line extending from these shoals to the S extremity of the reefs.

These reefs, except those at the S end, show in a moderate breeze.

4.45 North Towartit Reef (19°32'N., 37°20'E.) is marked at its N extremity by a beacon, 9m high, equipped with a racon.

Another beacon stands on the E edge of the reef, about 3 miles SE of the N end of North Towartit Reef.

North Towartit Reef Anchorage lies between 1 mile and 2.5 miles S of the N end of North Towartit Reef. In it are a number of reefs and sunken rocks, some of which are marked by lighted and unlighted beacons.

Anchorage.—Anchorage can be taken, in 68 to 75m, mud and shell, SSE of the 27.4m bank midway between the N and E lighted beacons. Vessels with local knowledge may obtain anchorage elsewhere, but in most areas the bottom is uneven and in some places it is not surveyed.

4.46 The E side of the Inner Channel is marked by two beacons, each 3m high, on reefs about 4 miles and 14 miles, respectively, SSE of North Towartit Reef.

Anchorage.—Two anchorages are located 1 mile NNE and 2.5 miles NE of **Sha'ab Ata** (19°16'N., 37°23'E.) but require local knowledge, as the channels leading to them are not marked.

The W side of the Inner Channel is fringed by a coral reef nearly 0.5 mile wide at **Towartit Elbow** (19°29'N., 37°18'E.), and is clearly visible to Sawakin Harbor, except off Hadaraweb and Shab Damath, about 7 miles and 15 miles SSE, respectively, of Towartit Elbow.

4.47 Marsa Amid (19°25'N., 37°18'E.) is a break in the coastal reef about 4 miles S of Towartit Elbow. It is marked by a conspicuous islet, covered with bushes, lying inside the coastal reef about 1 mile N of Marsa Amid. Hadaraweb Spit lies about 4 miles S of Marsa Amid and extends 0.5 mile offshore.

Marsa Ata (19°17'N., 37°19'E.) is marked by a fairly conspicuous wooded islet, off which the depths are irregular for about 0.2 mile.

Shaab Damath (19°14'N., 37°20'E.), in a position about 4 miles S of Marsa Ata, is a S projection of the coastal reef about 1 mile in length; the sea does not always break. A concrete beacon stands about 1 mile N of the S end of this reef.

Marsa Kuwai (Marsa Kuwayy) (19°13'N., 37°20'E.), about 1 mile wide, lies between Shaab Damath and the main part of the coastal reef.

The depths are irregular, but sufficient room is available to shelter medium-sized vessels in the S part. The S extremity of Shaab Damath does not show well. From a position approximately 2 miles S of Shaab Ata, Towartit Reefs continue S for 6.5 miles. The area within these reefs is unsurveyed.

Two lights mark the NW edge of Al Mansooriyah, about 3 miles S of Shaab Ata. Fikheeb, marked on its S end by a light lies 3.5 miles SE, with reefs extending 1.5 miles further S.

4.48 Sawakin Harbor (19°08'N., 37°21'E.) (World Port Index No. 47946), a narrow inlet in the low coastal plain, extends SW to Condenser Island (Quarantine Island), where it divides into two arms. Sawakin, in ruins years ago, was of little importance except as a pilgrimage quarantine station and a limited amount of coastwise trade.

The port is under the control of Port Sudan Port Authority.

Sudan Ports Corporation Home Page

http://www.sudanports.gov.sd

Winds—Weather.—The prevailing winds are either land and sea breezes, or winds which approximately parallel the coast, inclining off the land at night, and from seaward in the forenoon.

In spring and summer the sea breezes generally set in about 0900 and subside suddenly at about 1700, but outside the harbor they continue until later.

In winter the, wind almost always varies between N and NE during the day, with some strength, generally lulling but not falling to a calm at night.

During November, December, and January, sharp squalls from the mountains, accompanied by rain, occur occasionally.

During these months and until March, the climate is equable and pleasant, never very hot in the day and always cool at night. Sandstorms are experienced during summer.

When fresh land squalls blow, sand fills the air from some 50 miles seaward, rendering objects invisible at more than 0.5 mile.

During the winter months, when the high mountain ranges are generally hidden by clouds, the N wind sweeping along the plain between the mountains and the sea carries with it a cloud of reddish dust, which dims or entirely obscures the view of the lower and nearer peaks.

The heat is very great during June through September, the thermometer rising in sandstorms to 46°C onboard ship, and to several degrees higher in the town. Precautions must be taken against sunstroke.

Tides—Currents.—In Sawakin Harbor, the tides are diurnal. The mean winter level is 0.3m higher than the mean summer sea level.

Depths—Limitations.—The port is approached through a channel, best seen on the chart, located between coral reefs and marked by lighted and unlighted beacons. Channel depths are best seen on the chart.

Osman Digna (19°07'N., 37°21'E.), the new port, is located E of Condenser Island (Quarantine Island). Vessels with a maximum draft of 12.2m can be accommodated.

Berth information is given in the accompanying table titled **Sawakin Harbor—Berth Information**.

Aspect.—Jebel Waratab and the 252m hill to the SSE are good marks for approaching the harbor. The most conspicuous objects visible from seaward are a stranded wreck lying close SE of Condenser Island (Quarantine Island), about 1 mile SW of Graham Point; and the white chimney of the abandoned cot-

ton works on the shore about 1 mile S of Condenser Island (Quarantine Island).

The shores of the harbor, which are almost entirely bordered with reefs, are about 2m high and of a rocky appearance. These reefs dry from May to August, but are covered in December. The channel is reported to be marked by lighted beacons.

Sawakin Harbor—Berth Information			
Berth	**Length**	**Depth alongside**	**Remarks**
Osman Digna Port			
No. 1	156m	8.6m	General cargo and ro-ro.
No. 2	130m	8.6m	General cargo and ro-ro.
No. 3	106m	8.6m	General cargo and ro-ro.
No. 4	67m	4.5m	Service craft.
Entrance Channel Facilities			
No. 11	100m	6.5m	Livestock export. On the SE side of the channel about 0.4 mile SW of Graham Point.

Pilotage.—Pilotage is available 24 hours. The pilot boards about 2.2 miles ENE of Lighted Beacon No. 1. The pilot may be contacted on VHF channel 16.

Contact Information.—The port and pilots can be contacted, as follows:

1. VHF: VHF channel 16
2. Telephone: 249-311-822802
3. Facsimile: 249-311-822801
4. E-mail: spcp81@sudanports.gov.sd

Anchorage.—Anchorage is prohibited within an area about 0.4 mile NE of Condenser Island (Quarantine Island) due to the existence of a fresh water pipeline, the ends of which are marked by beacons.

The recommended anchorage is in a designated area best seen on the chart.

Caution.—Dependence should not be placed on the beacons marking the approach to Sawakin Harbor, as they may be missing. The lighted beacons in the approach to the harbor show red to port and green to starboard.

Caution is necessary as development activity is underway (2013) in Sawakin harbor and its approaches. Charted depths and aids to navigation are unreliable. Vessels should obtain the latest information from the local authorities.

The Sawakin Archipelago

4.49 The Sawakin Archipelago is an extensive group of islets, reefs, and shoals lying off the W shore of the Red Sea and fronting the coast for a distance of about 80 miles SE of Sawakin Harbor.

The group extends in a general SE direction from North Jumna Shoal, in latitude 19°27'N, to Darrakah, in latitude 18°21'N. Some of these dangers lie as far as 40 miles from the mainland and may best be seen on the chart; there is an Inner Channel between these dangers and the coastal reef.

Tides—Currents.—During June, strong W and SW currents have been experienced near the NE end of the Sawakin Archipelago, but generally only when close to the islets and not W of Hindi Gider and Masamirit.

During July and August, SW and SSW currents have been observed, which commenced at about 1400 daily and continued until after midnight. They often attain a velocity of 0.5 knot. Northeast sets were occasionally experienced after a SW wind, but were of short duration and erratic in direction.

Hindi Gider (19°23'N., 37°55'E.) is narrow, 4.5m high, and covered with bushes. The islet is surrounded by a steep-to reef, which extends 0.2 mile from its N side. The islet is marked by a beacon and a light. The light structure on Hindi Gider is reported to give a good radar return up to a distance of 14 miles.

4.50 **Peshwa** (19°23'N., 38°00'E.), a reef on which the sea generally breaks, lies about 5 miles E of Hindi Gider; a rock, the position of which is doubtful, was reported to lie midway between Peshwa and Hindi Gider. The reef is reported to lie about 1 mile SE of its charted position.

Owen Reef (19°21'N., 38°03'E.), 7.5 miles ESE of Hindi Gidir, is only visible under good conditions.

North Jumna Shoal (Shab Jibna) (19°27'N., 37°44'E.), awash and steep-to, lies about 11 miles WNW of Hindi Gider. The sea breaks on this reef, and in a calm a few coral heads show above water. A beacon stands on the SW side of the shoal.

Logan Reef (19°22'N., 37°50'E.) and **Keary Reef** (19°18'N., 37°50'E.) break in a moderate swell and are visible under normal conditions.

Shib Anbar (19°17'N., 37°42'E.), the N extremity of which lies about 12 miles SW of Hindi Gider, extends about 5 miles S. The sea generally breaks on the N end of the reef, which has several gaps in it. At the S end of the N section of the reef is a 0.9m rock. A stranded wreck lies near the S extremity of the reef.

The N extremity of **Shab Mubyat** (Meera Reefs) (19°12'N., 37°42'E.) is nearly awash. A circular reef, which shows light green, lies about 1 mile SE of Shab Mubyat.

Shib Qusayr (19°11'N., 37°37'E.) has a few coral heads above water, on which the sea always breaks. It is reported to be 0.5 mile WNW of its charted position. A beacon, 6m high, stands on the SW end of Shab Qusayr.

4.51 **Masamirit** (18°50'N., 38°46'E.) is a low, bushy, and steep-to island composed of sand and coral. Masamirit is reported to give a good radar return up to a distance of 11 miles.

The numerous islets, reefs, and shoals lying in the vicinity and SW of a line drawn between Hindi Gider and Masamirit are best seen on the charts.

Barra Musa Saghir (19°03'N., 38°12'E.), in a position about 26 miles SE of Hindi Gider and one of the above islets lying SW of a line drawn between Hindi Gider and Masamirit, is reported to give a good radar return up to a distance of 19 miles.

Dawn Ash Shaykh (Dom esh Sheikh) (18°37'N., 38°52'E.), the E islet of the Sawakin Archipelago, is low, thickly covered with bush, and fringed by a reef.

Gharb Miyun (18°30'N., 38°51'E.) is an islet fringed by a reef. The islet was reported to lie about 1 mile NE of its charted

position.

Miyun, an islet fringed by a reef, lies about 2 miles WSW of Gharb Miyun. The islet was also reported to lie about 1 mile E of its charted position.

Derraka (Darraka) (18°27'N., 38°45'E.) is a small islet about 4 miles WSW of Miyun. It is fringed by a reef, which appears to extend on its NW side toward a detached reef that breaks and lies 1 mile off the islet. Derraka was reported to lie about 1 mile E of its charted position.

Darrakah (Dahret Abid Islet) (18°21'N., 38°48'E.), the S of the Sawakin Archipelago, is low, and composed of sand and coral. It was reported that a reef extends about 1 mile E from it.

Aqrab, Karb, and Abu Marinah (18°26'N., 38°31'E.) are a group of six sand and coral islets on which the sea breaks when there is any swell. They lie on a coral reef, on which lie some pinnacle rocks, with deep water between them. Aqrab makes up the three N islets, Karb the two S islets, and Abu Marinah the E islet.

4.52 The coast S of Sawakin Harbor is backed by a sandy plain, which rises gradually to the inland ranges, with some hills near the coast rising abruptly.

From a point about 30 miles S of Sawakin Harbor, abreast the E turn of the coast, the mountain ranges incline away from the shore and are fronted by a wide expanse of plain. The coast S of Sawakin Harbor is frequently obscured by dust and mirage.

The Inner Channel to the S of Sawakin Harbor leads between the W side of the Sawakin Archipelago and the coastal reef to a position about 9 miles E of **Trinkitat Harbor** (18°41'N., 37°45'E.). The passage trends generally S for about 14 miles, then turns E for about 11 miles and then trends generally SE for about 22 miles.

Tides—Currents.—In the approach to Sawakin Harbor from the S through the Inner Channel, the currents are extremely variable and sometimes strong. The approach should be timed so as to have daylight while in the vicinity of the islands and shoals.

Between December and April, little current was experienced, and the velocity seldom exceeded 0.5 knot. A fairly constant set to W and NW has been observed at this season; this is probably influenced by the S winds prevailing in the S part of the Red Sea.

4.53 Kad Eitwid Reefs (Qad Eitwid) (19°03'N., 37°27'E.), on the E side of the Inner Channel, consists of some islets and numerous reefs and shoals, over some of which the sea breaks. There is no known navigable passage through this extensive group.

The area between a line joining Kad Eitwid Reefs and a point about 10 miles NE, and S of Burns Reef and Cunningham Shoal has been only partially examined. Numerous reefs lie in this area and it would be dangerous to attempt to pass through it.

Kad Eitwid Islet (19°00'N., 37°29'E.), 2.4m high, with some coarse grass on it, lies on the E side of Kad Eitwid Reefs, about 11 miles SSE of the entrance of Sawakin Harbor.

Another sandy islet, 1.8m high, with some coarse grass, lies about 4 miles SW of Kad Eitwid Sand.

A 7.3m patch lies about 2 miles N of the latter islet, narrowing the Inner Channel at that point to about 1 mile. A reef, on which the sea generally breaks, lies at the SE end of Kad Eitwid Reefs, about 4 miles S of Kad Eitwid Sand.

A spit with depths of less than 18.3m extends about 1 mile S from this reef. A 9.1m patch lies about 2 miles S of the reef. An iron beacon, 5m high, stands on the above reef.

4.54 Eitwid (19°01'N., 37°33'E.), an islet 2.7m high, is sandy, fringed by a reef, and covered with bushes on its NE side. It is visible in the S approach to Sawakin Harbor and makes a good mark.

Vessels should not attempt to pass between Eitwid and the reef at the SE end of Kad Eitwid Reefs.

The W side of the Inner Channel, formed by a coastal reef, which extends up to 1.7 miles offshore and dries in summer, is fronted by several long islets covered with mangroves and scrub.

The islets are not usually seen, except from aloft, the coastline being apparently unbroken.

The coastal reef is usually visible and is broken in several places, forming natural boat harbors. Two beacons, 3m high, stand on the edge of the coastal reef about 5 miles and 9 miles S, respectively, of the entrance of Sawakin Harbor. Another beacon, 5m high, stands on the reef 13 miles S of Sawakin Harbor.

4.55 Marsa Shaykh Ibrahim (18°53'N., 37°25'E.) is a good anchorage entered through a break in the coastal reef, 183m wide. The entrance points were marked by beacons. The coastal reef dries in patches on either side of the entrance. On the NW side of this bight are high mangroves, while the SW side is a low sandy plain with scrub.

Anchorage can be taken, in 7.3 to 11m, good holding ground. A 4.5m patch, the position of which is approximate, lies about 1 mile ESE of the entrance of Marsa Shaykh Ibrahim.

Marsa Shaykh Sad (18°50'N., 37°25'E.), entered about 3 miles S of Marsa Shaykh Ibrahim, extends W for about 1 mile and then N for about 2 miles. There are no good landing places as the depths shoal gradually, and boats ground about 46m from shore.

The entrance is obstructed by three detached shoals, which can be seen under favorable circumstances. The outer shoal is a coral head, with a depth of 1.8m, and is not easily seen. It can be avoided by keeping close to the steep-to coastal reef on the N side of the entrance, which dries in places and is clearly visible. The two inner shoals lie W and SW of the outer shoal.

Good sheltered anchorage can be taken just inside the entrance. Farther in there is less swinging room, and a stern anchor is necessary. A beacon, 4m high, marks the edge of the coastal reef about 1 mile N of the entrance of Marsa Shaykh Sad.

A beacon, 4.3m high, marks the edge of the reef on the N entrance of the bight. Vessels approaching Marsa Shaykh Sad from N should keep the coastal reef abeam avoiding projections. The area E of this bight has not been examined and discolored water has been observed.

Caution.—Extensive port developments are in progress (2016) in this area.

4.56 Shib ash Shubuk (Shab ul Shubuk) (18°49'N., 37°33'E.), a large shoal of which little is known, fills the bight in the coast between Marsa Shaykh Sad and Marsa Maqdam, about 17 miles ESE. The reef is intersected by narrow channels and studded with numerous low sandy islets, some of which have bushes on them.

The N edge of the reef is broken and should be given a wide berth, but the NE edge is usually visible. When a vessel passes outside of Shib ash Shubuk, the shore between Marsa Shaykh Sad and Marsa Maqdam is not visible. The SE extremity of the reef is marked by a beacon.

Corner Reef (Jinniya) (18°53'N., 37°36'E.) is marked by a beacon, 3m high. The sea generally breaks on this reef, and in calms it is usually visible.

Green Reef (Dhanab al Qirsh) (18°56'N., 37°44'E.) is awash on its W and N side, but its SE side is sunken. There are two coral heads off its W side.

Two Islets (Haronayeet), a reef about 2 miles SE of Green Reef, consists of two parts, with an islet on each part, separated by a very narrow channel.

The NE and larger islet, which is a good mark, is 4m high, with some stunted bushes and the SW islet is 2m high.

Kad Hogit (18°49'N., 37°43'E.) is a partly sunken reef lying on the SW side of the Inner Channel. The E part of the reef is usually visible, but the W part is seldom seen unless there is a swell breaking. A beacon marks a coral patch near the center of Kad Hogit.

Anchorage.—Anchorage, sheltered from all but SE winds, can be taken, in 18m, mud, with the beacon on Kad Hogit bearing 018°, distant 0.5 mile.

4.57 Marsa Maqdam (18°43'N., 37°42'E.) lies S of the SE end of Shib ash Shubuk. The NW side of this bight rises close S of its NW entrance point to an elevation of 3.0 to 4.5m and is covered with shrub. The coastal reef extends about 1 mile N from this point and detached reefs lie within 1 mile NE and E of the point.

There is a passage, less than 0.5 mile wide and leading into the channel within Shib ash Shubuk, close N of the NE detached reef, which is marked by a beacon. The SE entrance point of Marsa Maqdam is low and backed by conspicuous sand hills rising from 6.1 to 13.1m in height.

Three islets, 1.5m to 2.1m high, lie on detached patches within 1 mile N of this point. There are several detached patches, with depths of 2.1 to 5.5m, lying within 0.5 mile E of the islets.

Rambler Shoal, with a least depth of 5.5m, and Fairway Patch, with a least depth of 7.9m, lie E of the above islets, about 2 miles ENE and 2.5 miles E, respectively, of the SE entrance point of Marsa Maqdam.

Anchorage.—Anchorage can be taken, in 11 to 14.6m, sand and mud, in the N and NW parts of Marsa Maqdam, under the lee of the extremity of Shab Ul Shubuk. The SW part of the bight affords good anchorage, in 9.1m, sand, but during E winds this anchorage is somewhat exposed to the swell.

4.58 Trinkitat Harbor (18°41'N., 37°45'E.) is a small harbor formerly with depths of 6.1 to 7.9m. It is no longer advisable for even shallow draft vessels to use the harbor. The shores of the harbor are low and sandy and the entrance is not easily distinguished. A sandy plain, flooded at times, extends some distance inland from the harbor.

There is a shallow lagoon S of the harbor, entered through a narrow opening on the SE side of the harbor. A steep-to reef, which is awash and always visible, lies about 1 mile E of the N entrance point of the harbor.

A beacon marks the N end of the reef. The bank extending about 0.1 mile SE from the N entrance of the harbor has depths of 3 to 4.9m; the spit extending about 0.3 mile N from the S entrance has depths of 3 to 5.2m. A rock, near the middle of this spit, breaks in an E swell.

Another rock, about 183m S, also breaks. A shoal, with a least depth of 5.8m, lies about 0.3 mile NNE of the S entrance point of the harbor.

A beacon stands on the W side of the harbor. A flagstaff stands 0.5 mile S of the beacon.

Winds—Weather.—From November to April, the winds are mainly N, with some from the NE, especially during the daytime. In April, they begin to veer through E towards S, and from June to September, they are mainly S.

Sandstorms are said to be frequent and severe in the Trinkitat and Tokar District during the latter season; during and after these storms, visibility on the coast and at sea is likely to be much reduced by sand or dust haze.

There is no dust haze with N and E winds, and only occasional and very slight dust with winds from E to SE. Southeast winds can usually be forecast by an increase in the humidity of the atmosphere; it is said that a swell sets in from SE from 12 to 24 hours before the shift of winds occur.

Strong N winds are occasionally preceded by a swell from that direction, but, as the islets and reefs of the Sawakin Archipelago act as a breakwater, a marked swell does not always accompany a strong N wind.

Anchorage.—Good anchorage is obtainable, in a depth of about 11m, outside of the harbor.

4.59 To the SE of Trinkitat Harbor, the coast is low and barren, with salt water marshes, and in places is covered with low bushes. There are a few low sand hills on the coast about 12 miles from Trinkitat Harbor.

Jebel Tagdera (18°14'N., 38°07'E.), an isolated double hill, 122m high, is easily identified. It is the N of the coastal hills in this vicinity.

Jebel Debranka, 198m high, is a large rounded mass with a smooth summit, in a position about 5 miles SE of Jebel Tagdera.

Quoin Hill (18°08'N., 38°16'E.), 111m high, stands on the low coastal plain. It has two distinct conical peaks and bears little resemblance to a quoin.

4.60 Jebel Chelhinde (17°59'N., 38°16'E.), 634m high, is a conspicuous peak with a rounded summit. It seldom stands out clearly, but is unmistakable. Sugarloaf (Jebel Dirtet) are two conical hills, 253m high, about 6 miles NE of Jebel Chelhinde.

Winds—Weather.—The mountains in the neighborhood of Khor Nowarat appear to receive a lot of rain and are frequently hidden in clouds or by sandstorms.

The latter are of common occurrence and may last from 1 day to possibly 4 days. Strong E and S winds, which at times

reach force 8, are almost invariably preceded by a thick atmosphere; the hills disappear from view, and it is usually very humid. These winds often set in quickly, and attain a considerable force in a few minutes. If, however, the signs of their approach and the barometer are watched, there is usually ample warning.

Under these conditions, the barometer tends to fall and the daily 1000 local time rise almost disappears. As a rule, the strength of the wind abates toward evening. These winds, known locally as Haboobs, are very hot and usually accompanied by sandstorms. Clearing hills and dry weather are the precursors of fine weather with light N breezes.

Qita Teronbo (18°39'N., 37°48'E.) is a sunken rocky patch, steep-to on its NE side, lying close off the coast. This rocky patch is separated from the coast by a passage about 1 mile wide and with a depth of 6.4m. Anchorage can be taken here in an emergency.

4.61 Ras Asis (18°25'N., 38°09'E.), the N extremity of the Gulf of Aqiq, is low and sandy, with a rocky spit extending about 1 mile E from it. A beacon stands on the E extremity of Ras Asis.

Ras Shakal (Ras Shekub) (18°18'N., 38°17'E.) is an island, 4.5m high, with a narrow channel between it and the mainland.

Two small islets and some coral reef lie to the NE of the island. It is advisable to round the cape at a distance of 4 miles, or in a depth of not less than 55m.

A white masonry beacon stands on the N extremity of the reef, about 1 mile N of Ras Shakal. The beacon has been reported to be difficult to distinguish.

Several dangers extend across the E side of the gulf from Ras Shakal toward Ras Asis, leaving an entrance between the N danger and Ras Asis about 3 miles in width. The Amarat Islands, lying 2 to 4 miles W of Ras Shakal, are two low, sandy islets on a coral reef.

A 7.3m shoal extends 1.5 miles NNE from the E end of the E island; a detached rock with a depth of less than 1.8m lies midway between these islets and the peninsula.

Diamond Shoal, with a least depth of 3.9m, lies NNW of e Amarat Islands; a shoal, with a depth of less than 1.8m, lies about 1 mile farther NNW.

Aqiq (18°14'N., 38°14'E.), a small village on the S side of the gulf, consists of barracks and huts. Three low coral islets fringed by reefs lie from 0.5 mile to 1.5 miles N of the village.

Anchorage can be taken E of the inner islet, in 7.8 to 12.8m, mud and coral.

4.62 Khor Nowarat (18°15'N., 38°20'E.) is a sheltered inlet providing excellent anchorage throughout, in depths of 5.5 to 10.1m. The shores of the bay are low and sandy, in places covered with scrub and mangroves, and fringed with reefs. Parts of the shore are subject to inundation.

There is a chain of islets across the entrance of the inlet which completely shelters the bay and partially obstructs the approach. There are depths of 7.3 to 11m, mud, N of Ibn Abbas Island, and 5.5 to 8.7m SW of the island.

Directions.—The entrance of Khor Nowart is difficult to distinguish from a distance, but if Jabal Direct can be identified, it leads toward the entrance.

The black rocks on the NW end of Hagar Islet, which are visible about 5 miles distant, should be approached on a 190° bearing.

When the beacon W of Ras Istahi bears 230°, vessels shall steer for that. When clearing the shoals ESE of Guban Island, gradually change course to 132°, bringing the beacon N of Ras Shakal in range astern with the sand spit extending SW from the extremity of Guban Island. This leads to a position off the entrance of the harbor and W of the middle islet of Hagar Islets. Anchorage can be taken here, in 12.8m, sand, or vessels may proceed through the entrance.

Vessels proceeding to the inner anchorages should round Ras Istahi, giving a good berth to the spit extending from it, and then steer SW to clear the shoal W of the 3.3m islet off the NW end of Farrajin Island.

4.63 Ras Istahi (18°16'N., 38°19'E.), the E end of the peninsula separating the Gulf of Aqiq from Khor Nowarat, is the NW entrance point of Khor Nowarat. The point is fringed by a reef, and there is a 5.5m patch about 0.4 mile ESE of the point. A beacon stands on a small sand hill, 4.6m high, about 1 mile W of Ras Istahi.

Obstructing the approach to the entrance of Khor Nowarat are Guban Island, the Hagar Islets, and Farrajin Island.

Guban Island, about 7m high, is separated from the head of the peninsula by a passage about 1 mile wide, but it has patches with depths of 4.1 to 11m obstructing it. Shoal patches, with depths of 5.5 to 10.1m, lie from about 0.2 to 0.4 mile ESE and SE of Guban Island.

The Hagar Islets, which lie from about 1 mile N to 1.5 miles E of Ras Istahi, consist of three low sandy islets lying on an extensive coral reef. These islets are sparsely covered with some grass and shrub. The middle islet is 3.9m high, and the NW islet is 3.6m high. Conspicuous black rocks, 0.9m high, stand near the NW edge of the reef surrounding Hagar Islets.

Farrajin Island (18°14'N., 38°21'E.), 4.5m high, is connected by shoals, with depths of less than 5.5m, to the SE entrance point of Khor Nowarat. An islet, 3.3m high, lies at the NW end of the reef extending NW from the NW end of Farrajin Island.

A detached shoal, with a depth of less than 1.8m, lies about 0.1 mile W of this 3.3m islet. A spit, with depths of less than 3m, extends about 0.3 mile N from the islet.

Ibn Abbas Island (18°13'N., 38°19'E.), in the middle of the inlet, is a coral plateau about 4.5 to 6.1m high. The E part of the island is wooded and the W part is sandy. All but the SW side is fringed with reef, and there are coral patches between the E end of the island and Farrajin Island.

A conspicuous 2.7m islet, that is fringed with reef, lies midway between Ibn Abbas Island and the NW end of Farrajin Island.

4.64 The coast SE of Khor Nowarat is very broken to Ras Kasar. It is recommended that vessels approaching the coast in this vicinity first make Darrakah.

Jazirat er Rih (18°11'N., 38°28'E.), an irregularly-shaped peninsula, is low and sandy on its E part. It should not be approached from E because of the off-lying dangers. On its W part are some trees and vegetation, and the coral rock ruins of an ancient town. The highest part of the peninsula is a mound of rocks which is visible from Ras Abid.

To the W of Jazirat er Rih is a bay with depths of 5.5 to 7.3m. Vessels entering the bay should pass N of Jazirat er Rih

and between its W extremity and the coast.

The bar in the entrance, with a depth of 3.6m, is a continuation of the coastal reef. A tortuous channel leads SW and S of the peninsula.

4.65 Ras Abid (18°09'N., 38°30'E.), about 2 miles SE of Jazirat er Rih, is a small island, and not a point as implied; its highest part is on its E side. A beacon stands on an island, about 2 miles SE of Ras Abid.

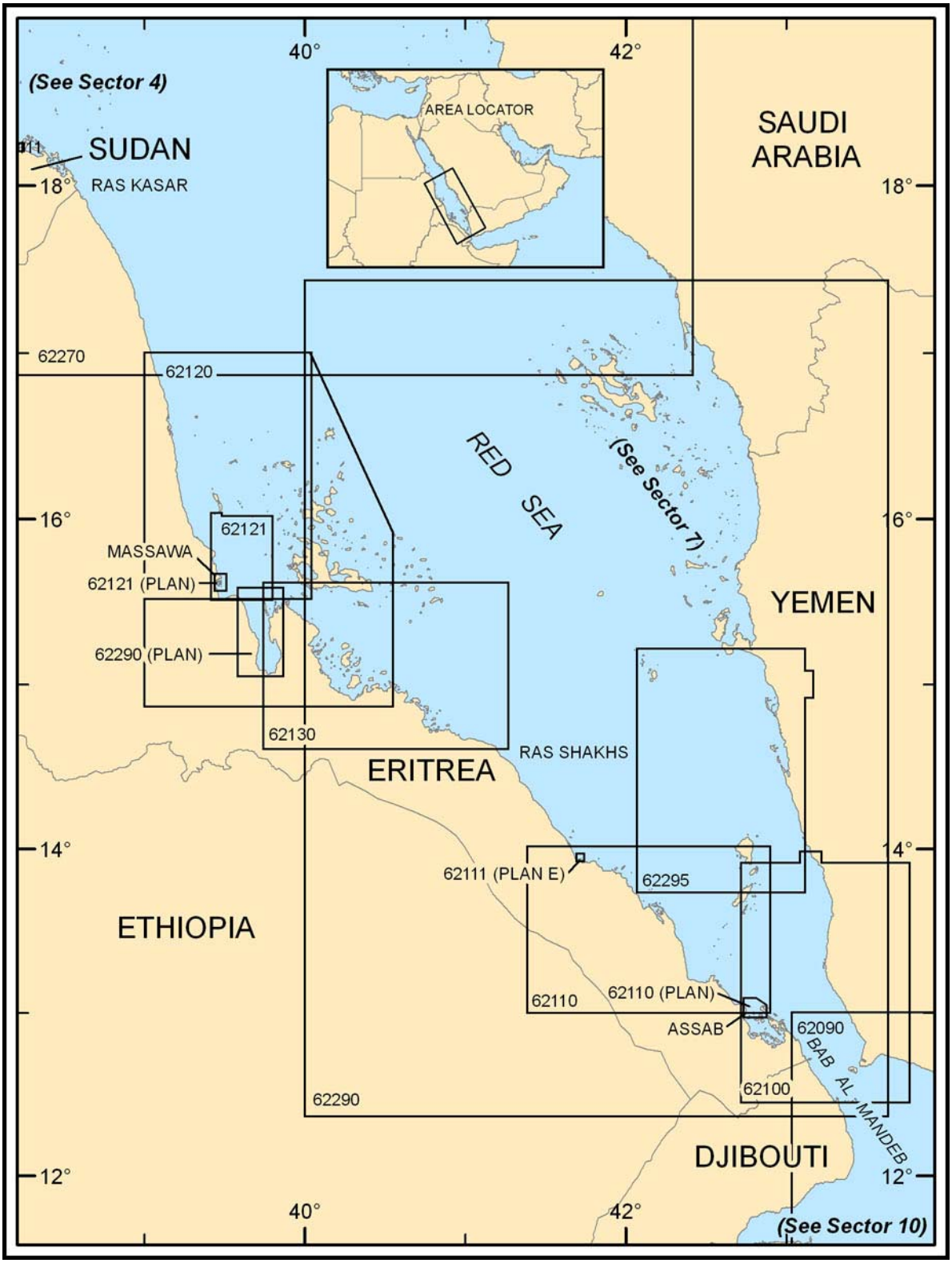
A rocky islet, 1.8m high, lies between Ras Abid and Ras Abu Yabis. The islet is a good mark; NW of it is a low bushy island. Between Ras Abid and Ras Kas, 10 miles SSE, the coast is low and fringed by a rocky bank.

Ras Abu Yabis (18°07'N., 38°32'E.) lies 3.5 miles SSE of Ras Abid. It is the NW extremity of a projection that is low and bushy, with small white sand hills.

A bay, which appears to be shoal, lies on the W side of Ras Abu Yabis. To the S of this cape and near the coast are some conspicuous mountains.

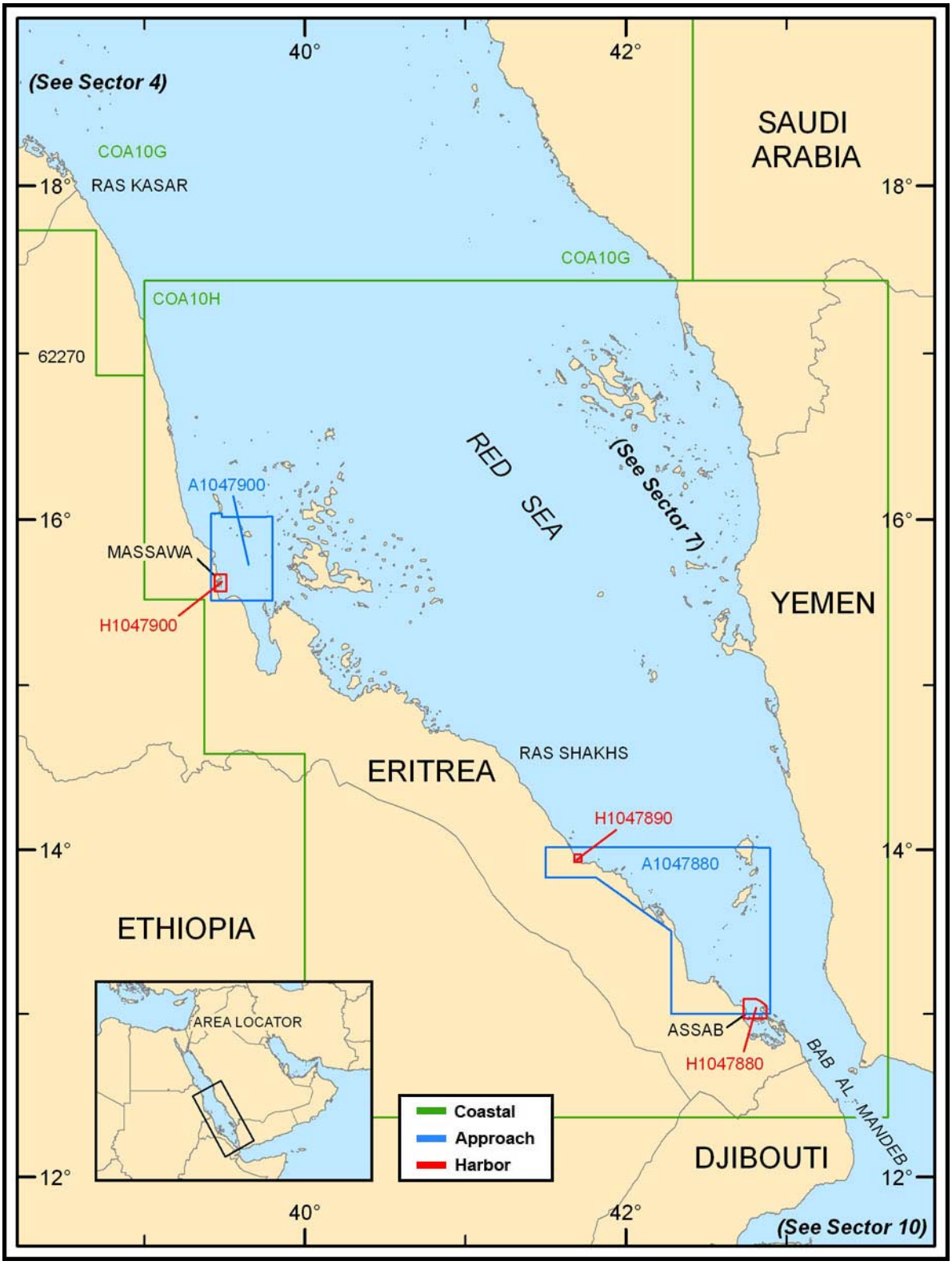
A bank, with a least depth of 27m, was reported to lie about 5 miles E of Ras Abid. A sunken rock, about 6 miles E of Ras Abu Yabis, lies at the S end of a bank with depths of 23.8 and 25.6m. The rock has been unsuccessfully searched for and its position is doubtful.

Ras Kasar (18°02'N., 38°35'E.), about 7 miles SSE of Ras Abu Yabis, is described in paragraph 5.2.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **5** — CHART INFORMATION



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SECTOR 5 — DNC LIBRARY INFORMATION

SECTOR 5

THE RED SEA—WEST SIDE—SUDAN AND ERITREA—RAS KASAR TO RAS SIYAN

Plan.—This sector describes the W side of the Red Sea between Ras Kasar and Ras Siyan, on the W side of Bab el Mandeb. The general descriptive sequence is SE from Ras Kasar.

General Remarks

5.1 The coast is in general a low-appearing arid plain, rising gradually to the interior plateau. The mountains, some of which attain an elevation of 3,048m, form an escarpment to the plateau and have a peculiarly abrupt and precipitous appearance. No rivers of any importance flow into the Red Sea.

Between Ras Kasar and Mitsiwa Harbor, the plain, with scattered isolated hills, ranging from about 43 to 244m high, varies in width from about 10 to 20 miles. Southeast of Mitsiwa Harbor, the plain is from about 1 to 10 miles wide.

The coast between Ras Sciaks and **Ras Terma** (13°14'N., 42°33'E.) is backed by ranges of high volcanic mountains sloping to the sea. Southeast of Ras Terma, on the W side of the N approach to Bab el Mandeb, the general aspect of the land is high, rugged, mountainous toward the interior, and barren toward the coast. The mountains descend in successive lower ranges toward the coast.

The Inner Channel on this side of the Red Sea continues S as Canale di Massaua, which lies W and SW of the islands and shoals of Dahlach Bank.

Caution.—Unconfirmed reports were received concerning underwater explosions, possibly caused by mines, near ships in the area of Bab el Mandeb.

Additionally, a vessel was believed to have struck a mine at 18°25'N, 40°10'E. Another vessel was reported to have struck a mine in position 26°48'N, 34°39'E.

No further reports have been received concerning mining activities in the Red Sea, and the areas concerned are believed to be safe for surface navigation. However, vessels are urged to exercise the appropriate caution.

Gulf of Aden Voluntary Reporting System.—A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Indian Ocean—Ship Reporting System.

Ras Kasar to Mitsiwa Channel

5.2 **Ras Kasar** (18°02'N., 38°35'E.) is low, with sparse vegetation, and is not easily identified from a distance. The rocky bank here extends about 2 miles offshore. Between Ras Kasar and Taclai, the N entrance to Mitsiwa Channel, about 34 miles SSE, the coast is fringed with a reef; depths of less than 30m extend up to 15 miles from the coast.

There are few easily identifiable landmarks along this stretch of coast. About 5 miles inland from a position 7.5 miles SSE of Ras Kasar is a series of low hills; farther inland are mountains, a few of which are sharp enough to be clearly defined.

Middit (17°47'N., 38°36'E.) has two peaks and shows up well from a distance. Abghendabu, about 8 miles SSE of Middit, has a prominent tomb on its S ridge.

Monte Noret (Nohrat), about 6 miles farther SSE, is 106m high at its S end. This rugged ridge of hills rises toward its S end, where it terminates in a bluff.

Scenat (17°31'N., 38°46'E.) lies about 6 miles SSE of Monte Noret. From a distance, Scenat, resembling a fort, appears isolated, and is easily identified.

5.3 **Tepsa** (17°26'N., 38°47'E.), separated from Scenat by land sloping to the coast, has a white color. At sunrise it has the appearance of a white mass with dark rocky hills at either end, but with the sun behind the group, three conspicuous peaks are visible at its S end.

About midway between Scenat and Tepsa, there is an isolated dune, which is a good mark from seaward.

Baki stands about 6 miles SE of Tepsa. A beacon stands on its N shoulder. Several of the hills in the vicinity of Baki have cairns on their peaks, but the beacon on Baki is unmistakable.

West of Canale di Massaua, the character of the Abyssinian Mountains is the same. Flat tablelands prevail, their axis running N and S, but here and there sharp peaks break the line and are good marks when they can be identified.

For the most part, a broad sandy plain rises gradually from the coast to the base of these ranges, where it attains an elevation of about 305m. The plain is dotted with small hills, generally conical in shape, the elevations of which are dwarfed in appearance by the mountains inland and by the almost imperceptible slope of the plain. This should be borne in mind when attempting to identify these hills from the chart.

5.4 **Mersa Berisse** (18°00'N., 38°35'E.), on the S side of Ras Kasar, is about 2 miles wide. The coast in the vicinity is low, sandy, and backed by high land; a village is on the shore of this bight. The coastal reef extends about 1 mile from the shore in places, and the sea breaks on it. There are depths of 5.5 to 9.1m off this reef, where dhows anchor.

Hasmet (17°44'N., 38°44'E.), about 19 miles SE of Ras Kasar, is a small bight in the coastal reef, where boats anchor.

The shore in the vicinity is low, swampy, and backed by high land.

Samadrisat (17°36'N., 38°49'E.), about 9 miles SSE of Hasmet, is a low projecting point, which is easily distinguished from other parts of this coast by high trees; they front the coast for about 1 mile, there being no other for 20 miles in either direction.

Taclai (17°31'N., 38°52'E.) has a conspicuous one-story brick building with a small tower, about 14.9m high, in the center.

The tower is painted in black and white squares. Around this building are several small houses, and a little farther inland are two small buildings and some huts. The brick building and

tower were reported to be in ruins.

A small, sheltered boat harbor, about 2 miles N of Taclai, is formed by two partially-ruined moles. A few huts and two masonry buildings stand a little S of the harbor. Near the extremity of one of the moles is a beacon.

The coast from Taclai to Mitsiwa Harbor is described beginning in paragraph 5.10.

Mitsiwa Channel (Massawa Channel)

5.5 Mitsiwa Channel (Massawa Channel) is the passage between the coast and Dahlak Bank; the bank is described beginning in paragraph 5.6. The width in the fairway varies from 2.5 to 14 miles, and the depth ranges from 18.3 to 128m, with occasional shoal patches and below-water rocks. It is divided into North Mitsiwa Channel (North Massawa Channel) and South Mitsiwa Channel (South Massawa Channel), and is about 210 miles long.

The channels afford a safe and convenient passage, which may be navigated day or night. The passage is lighted, but caution is necessary, as the islands are low, steep-to, and not easily seen.

Winds—Weather.—In North Mitsiwa Channel, the prevailing N winds are stronger during the day than at night. They blow somewhat from the land during the early morning and veer to the NE during the day.

A low barometer is commonly followed about 2 days afterward by a N wind, which sometimes sets in suddenly and rather fresh, while at other times it sets in gradually; in both cases, it is preceded by light clouds. The barometer rises and remains high as long as the winds last.

When S winds prevail throughout the channel, they generally blow strongly from the SE by day, while at night they veer toward the NW and become lighter. The wind from the SW is remarkably dry, but when it shifts to the S or SE, the wet bulb thermometer quickly rises several degrees. The barometer gives no warning of the approach of strong S winds, but falls as soon as the wind commences. These winds seldom last more than 4 days.

In South Mitsiwa Channel, S winds prevail and cause considerable swell, which is experienced S of and near **Isola Sciumma** (15°32'N., 40°00'E.). The remarks as to the shifting of the wind in the N passage also apply here.

Frequently, the wind is SE and fresh to the S of Isola Sciumma, while off Isola Difnein and **Isola Harat** (16°05'N., 39°28'E.), the wind is from the N. Off Mitsiwa, the sea breeze is generally from E.

Tides—Currents.—The direction of the currents is extremely variable. In January and February, the SE winds in the middle of the Red Sea are strongest and cause a S surface current along the shore of the channel. This set is much influenced, however, by the local winds in the channel and by the tidal currents.

In South Mitsiwa Channel, during January and February, S currents have been observed to prevail against S winds, but in March and April, the current sets usually to the N. However, the current seems to be governed to a great extent by the local winds.

During April of one year, after 5 days of continuous SE winds, the current was found to be setting NW off Ras Kasar at a velocity of 1.5 knots.

In North Mitsiwa Channel, the tidal currents set S during the rising tide and N during the falling tide; they are often very regular. At other times, the S current does not cease but is only checked by the N current.

In South Mitsiwa Channel, the tidal currents are weak and variable; they appear to meet in The Narrows, in the vicinity of Isola Sciumma.

Anchorage.—Anchorage can be taken nearly anywhere along the W shore of North Mitsiwa Channel. In most places, there is no shelter from SE winds. The holding ground is generally good, and, except in South Mitsiwa Channel, the space is too confined for much sea to get up.

Dahlak Bank

5.6 **Dahlak Bank** (16°00'N., 40°00'E.), a vast area consisting of islets, islands, rocks, reefs, and shoals, obstructs the offshore approaches to the coast in this part.

The dangers on Dahlak Bank extend from Saunders Reef in latitude 17°12'N, to and including Seven Fathoms Bank in latitude 14°52'N, a distance of about 182 miles in a SE direction; these dangers are best seen on the chart.

In general, the depths on this bank are less than 73m, the outer edge of the bank being steep-to and at one point lying 78 miles from the coast.

The islands on this bank are fringed by reefs; they lie between the parallels of 16°37'N and 15°23'N, with the N island being Isola Difnein, and the S island being Isola Bullissar. The channels between these islands are of moderate depth and interspersed with many shoal patches.

For about 50 miles S of **Isola Entaentor** (16°20'N., 40°14'E.), the dangers are almost continuous; no channel exists across this part of the bank to the W shore.

Caution.—Dahlak Bank is composed principally of sand and coral, with occasional patches of mud. From the nature of the bottom, there is a great probability that uncharted shoal patches exist; due caution should therefore be exercised when navigating in this area. If large in extent, the coral reefs are sometimes visible, but those of sand cannot be distinguished from the light-colored water prevalent on the banks.

In most parts of the Red Sea, the reefs are steep-to and can easily be distinguished by the difference in color of the water, as they nearly always show white.

Mariners are advised to proceed with particular caution when navigating in the reef area anywhere E of North Mitsiwa Channel. The area is inadequately surveyed and uncharted shoals may exist.

5.7 **Saunders Reef** (17°11'N., 39°24'E.), the N danger on Dahlak, is a 3.5m coral patch on which the sea has been seen to break. A dangerous below-water rock lies about 18 miles ENE of Saunders Reef.

Fawn Reef (Secca Fawn) (16°59'N., 39°35'E.), lying 16.5 miles SE of Saunders Reef, has a depth of 5m. Other banks, with depths of as little as 5m, lie within 9 miles of Fawn Reef.

Gannet Bank (16°59'N., 39°13'E.), with a least depth of 6.7m, lies 16 miles SW of Saunders Reef. The position of this bank is not always indicated by discolored water, but when the current is setting, swell and ripples are apparent.

Isola Harmil (16°31'N., 40°10'E.), the N island on Dahlak Bank, is low, wooded, and irregular in shape. A projection of a reef extends about 1 mile SE from the SE end of the island.

Isola Seil Harmil, lying on the extremity of this projection, is marked by a beacon.

Several isolated shoals, with depths of as little as 5.8m, lie between 14 miles N and 20 miles SSE of Isola Harmil. Soundings are reported to give little warning of their proximity.

Isola Difnein (16°37'N., 39°20'E.), the NW island on Dahlak Bank, is covered with mangroves. Parts of the coasts of the island are fringed by reefs. There is a water tank on its SW point. The island is marked by a light. Isola Difnein is reported to give a good radar return up to a distance of 13 miles.

Caution.—Caution is necessary on that part of Dahlak Bank lying N and E of Isola Difnein. This area has been only partially surveyed, and there are many indications of shoal patches not yet charted.

5.8 Secca Duo Braccia (16°37'N., 39°29'E.), with a least depth of 3.7m, lies on an 18.3m bank about 9 miles E of Isola Difnein, and can usually be seen. A detached 5.5m shoal lies close W of the middle of Secca Duo Braccia.

A current was observed setting W in the channel, W of Isola Difnein and in the vicinity of Secca Duo Braccia, at a velocity of 1 knot. Between Difnein and the coast, a NW current, up to 2 knots, was experienced when the wind was from E to SE.

Isola Asbab (16°26'N., 40°05'E.), about 4 miles WSW of the SW extremity of Isola Harmil, is low and bushy. It is fringed with sunken rocks on its E and SE sides. A beacon stands on Isola Asbab.

Isola Entesile (16°30'N., 39°19'E.), about 7 miles S of Isola Difnein, is small, 6.1m high, and covered with dense bush. It is fringed by reef; a bank with depths less than 5.5m extends about 1 mile N from the islet. A shoal, with a least depth of 6.4m, lies close S of the islet. Anchorage can be taken NW of Isola Entesile, in 22m, coral, but the depths increase rapidly.

Isola Entaentor (16°20'N., 40°14'E.) is low, bushy, and fringed by a reef, with a beacon standing on the N part of the island. Anchorage can be obtained, in 18m, about 1 mile W of the beacon.

Between Isola Entaentor and the N side of Dehalak Deset, about 29 miles SSW, is a line of islands and islets, all lying on a shallow bank, on which are many rocks. These islands, which may best be seen on the chart, are low and composed of sand or sand and coral.

Many other dangers lie from 18 miles NE of Isola Entaentor to 70 miles SE of Ras Scioche, the SE extremity of Dehalak Deset, and may best be seen on the chart.

5.9 Isola Hucale (16°20'N., 40°05'E.), low and bushy, lies about 9 miles W of Isola Entaentor. Isola Seil Anber, small, wooded, and 9m high, is about 5 miles W of Isola Hucale.

Isola Isratu (16°20'N., 39°53'E.), one of the highest islands on Dahlak Bank, has several small peaked hills. A peninsula, terminating in Ras Haral, extends about 2 miles S from the SE end of the island. A beacon stands on the E extremity of Isola Isratu. A beacon stands on Ras Haral. The SW end of the peninsula close W of Ras Haral is marked by a beacon. Another beacon stands on a hill on the SW side of the island.

Isola Seil Adasi (16°20'N., 39°56'E.) is marked by a beacon.

Isola Enta-idell (16°08'N., 39°51'E.) is sandy and rocky. A beacon stands on the W side of the island.

Isola Adbara Chebir (16°00'N., 39°50'E.) is marked by a beacon. Isola Dehel, 6.1m high and flat, lies about 11 miles WSW of Isola Adbara Chebir. Near the NW side of the island is a village with a white square mosque. About 0.5 mile SE of this village is a grove of tall palms.

Isola Dur Gaam (15°47'N., 39°45'E.), wooded and fringed by a reef, lies in a position 8.5 miles SE of Isola Dehel. A beacon stands on Isola Dur Gaam.

Isola Dur Ghella, 2 miles E of Isola Dur Gaam, is a narrow, wooded island. A beacon stands on the S extremity of Isola Dur Ghella.

Taclai to Mitsiwa

5.10 Taclai (17°31'N., 38°52'E.) has been previously described in paragraph 5.4. Beacons, 3m high, stand near the coast, about 10 miles and 12.5 miles SSE of Taclai; the latter beacon is reported partly in ruins, but is still visible.

Kavet (Cavet) (16°58'N., 39°03'E.) is 34 miles SSE of Taclai. A conspicuous wreck lies on the shore approximately 4.5 miles NNW of Kavet.

Caution.—A dangerous submerged rock lies about 41 miles ENE of Kavet in position 17°14.7'N, 39°41.7'E.

Victoria Peak (16°52'N., 38°32'E.), dome-shaped and 2,256m high, lies at the N end of a flat range and, when visible, is the most easily-identified mark for the entrance of the N passage. This peak appears the same from all directions and is the highest mountain in the vicinity.

The Paps, about 26 miles ESE of Victoria Peak and 11 miles inland, is a double-peak hill. On some bearings, it appears as three peaks, and with the smaller hills near, it may often be seen when the higher peaks are obscured. The Paps rises about 183m above the surrounding plain.

Termab (16°39'N., 38°40'E.), 132m high and on which there is a white cone, stands 17 miles SE of the Paps.

Handellai (Kandellai) (16°37'N., 39°10'E.), an islet on the coastal reef 22 miles SSE of Kavet, is covered with mangroves and not easily identified until close. The coast in this vicinity consists of mangrove swamp; the coastal reef here extends 2 miles offshore.

5.11 Mersa Gulbub (16°25'N., 39°11'E.), lying about 11 miles S of Handellai, is a small indentation in the coast. A plantation, with an airfield close S of it, is situated near the shore; otherwise the coast for several miles on each side is completely barren.

Ras Kuba (16°20'N., 39°12'E.) lies 5.5 miles SSE of Mersa Gulbub. The intervening coast is sandy, with several off-lying shoals. The coast from Ras Kuba to Ras Arb, about 36 miles further SSE, is also sandy.

Melahat (16°02'N., 39°15'E.), 18 miles S of Ras Kuba, and its locality are backed by swamps, beyond which are ranges of low, barren sand hills. Salt works stand near the coast, about 7 miles SSE of Melahat. They are generally well lighted at night and provide a good mark.

Isola Harat (16°06'N., 39°28'E.) presents a uniformly flat

outline. The N part of the island is 10.6m high; the S part is 9.1m high, with a few bushes, some huts, and a beacon.

Isola Sceic El Abu, low and sandy, lies on the S side of the reef that extends W from the S side of Isola Harat. The islet is marked by a light.

Secche Harat, extending about 9 miles NNW from the N extremity of Isola Harat, has depths less than 11m and is generally visible.

A series of small banks, with a least depth of 9.1m, extends about 6 miles farther NNW.

Seil Badira, a small islet 4.5m high, lies on Secche Harat, in a position about 2 miles N of Isola Harat.

A detached shoal, with a least depth of 10.1m, principally sand, lies about 11 miles NNW of the N end of Isola Harat; this shoal shows distinctly.

Anchorage can be taken, in 14.6m, about 2 miles NW of the SW end of Isola Harat, clear of the dangers off the W side of the island.

Ras Arb (15°48'N., 39°26'E.) is reported to be low, rounded and sandy. The coastal bank extends about 1 miles E from the point; large masses of floating weeds have been observed in this vicinity. Ras Arb is reported to give a good radar return up to a distance of 27 miles.

Secca Oreste, with a least depth of 7m, sand and coral, lies about 3 miles E of Ras Arb.

Emberemi Tomb is about 5 miles SSW of Ras Arb and about 1 mile inland. It has a domed roof and is conspicuous from N. In clear weather it can usually be seen from a distance, and even in hazy weather it can usually be distinguished.

5.12 Jebel Karamburra (15°43'N., 39°08'E.) is a rounded summit, about 2 miles from NW end of a range of hills, which are about 8 miles long. When the higher mountains are visible, the hills of this range appear insignificant, but they often show well when the former are obscured.

Jebel Karamburra, being nearly detached from the range and of a bold rounded form, makes a good mark under such circumstances.

Ras Dogon (15°38'N., 39°29'E.), the N entrance point to Mitsiwa Harbor, lies about 9 miles SSE of Ras Arb.

Directions.—If arriving from the N and bound through North Mitsiwa Channel, pass about 10 miles E of **Dawn ash Shaykh** (18°37'N., 38°50'E.) and then make good a course of 188° for Taclai.

When about 5 miles off the coast on the latter track, alter course to the SSE, keeping from 3 to 5 miles offshore. It may be well to keep a little closer inshore in the vicinity of latitude 17°07'N, to avoid the patches on the E side of the channel.

It should be borne in mind that the reefs close off the mainland do not always show, and that the reefs on the E side of the channel are steep-to.

From a position 4 miles E of **Ras Arb** (15°48'N., 39°27'E.), steer to pass 2 miles NE of Isolotto Madote and 7.5 miles NNE of Ras Gurma. Mount Faraon is a good landmark.

From this position, steer to pass 5.5 miles NNE of Punta Shab Shakis, taking care to avoid a small coral bank 7.5 miles NNE of the point. If heading N in this channel, follow the directions in an inverse order.

Caution.—The area between the S end of the Suwakin Archipelago and Isola Difnein has not been closely examined, except for a distance of about 10 miles offshore from Ras Kasar to the S.

The general prevalence of thick haze in winter often renders the approach from the NE to the N passage by the aid of shore marks difficult, and sometimes impossible.

As a rule, when the haze is thickest, the sky is clear, and astronomical observations can be obtained.

When clouds prevail, usually with N winds, the land is comparatively clear, although the highest peak may be capped.

A landfall should be made near Kavet, if possible, shortly before daylight, because of the difficulty in distinguishing the disused light structure in hazy weather.

Mitsiwa Harbor (Massaua) (Massawa) (15°37'N., 39°28'E.)

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5.13 Mitsiwa Harbor is separated by several islands, connected to the shore by causeways, and peninsulas into three main sections.

The bays are grouped as Dachilia (Khor Daklyat); Seno Cherar and Seno T'walet Ye Bahir Weshmet (Gherar Bay and Taulud Bay); and Hirghigo Bahir Selate (South Anchorage). Fringing reefs and shoal patches encumber most of the water areas of the port.

Winds—Weather.—Land and sea breezes prevail throughout the year. The sea breezes blow from the NE and are always stronger than the land breezes. Strong SE winds raise a swell and the connecting causeways are sometimes flooded.

In summer, when the sea breezes are usually light, there are many days of calm with very high temperatures. During this season, sudden squalls, forewarned by dense curtains of sand, come down from the hills. Vessels intending to remain should moor with care. These squalls are rare in winter.

Mitsiwa Harbor—Berth Information

Berth	Length	Depth alongside	Maximum draft	Remarks
Commercial Pier				
No. 1	176m	4.0-6.0m	5.0m	General cargo and containers.
No. 2	150m	6.3-8.0m	7.5m	General cargo and ro-ro vessels.
No. 3	137m	8.4-8.8m	8.7m	General cargo.
No. 4	137m	7.9-8.0m	8.4m	General cargo.

Mitsiwa Harbor—Berth Information				
Berth	**Length**	**Depth alongside**	**Maximum draft**	**Remarks**
No. 5	137m	8.0-8.2m	8.0m	General cargo.
No. 6	210m	12.0m	12.0m	General cargo and containers. Can also be used for explosives with prior permission.
Other Facilities				
AGIP Oil Terminal	185m	9.0m	8.6m	Oil tankers.
Mobil Oil Terminal	176m	9.0m	8.6m	Oil tankers.
Salt Berth	—	9.6m	8.8m	Extends 110m SSE from the Gherar Peninsula. Vessels normally drop anchor before berthing.
Cement Berth	—	5.4m	5.4m	Cement.

Mitsiwa Harbor

In the winter, W winds prevail in the morning, SE winds prevail in the afternoon, and S winds prevail in the evening. In the summer, N winds prevail in the morning, NE winds prevail in the afternoon, and E winds prevail in the evening.

Heat and humidity are serious problems. Temperatures reach their highest during June through September, when they are accompanied by the greatest humidity. The climate of Mitsiwa is intensely hot but generally not unhealthy; fever appears to be prevalent from the end of April to the early part of May.

Tides—Currents.—Tides here are semidiurnal, with a mean range of 0.7m. The spring range is 0.9m.

Depths—Limitations.—The 20m curve lies close off the entrances to Dachilia and the Commercial Harbor. Seaward of this line lie depths of 30m and over, while inshore, fringing reefs extend up to 0.3 mile offshore. Depths off the entrance to the South Anchorage range from 11 to 26m, but fringing reefs and shoal patches are present.

The port can accommodate vessels up to 27,000 dwt, with a maximum length of 210m and a maximum draft of 12.0m.

Mobil Oil Terminal (Oil Pier) (Marine Pier) extends NNW then NW from the S entrance point of Dachilia. Tankers berth stern-to. Berthing and unberthing can be done only during daylight hours.

The AGIP Oil Terminal extends from the W shore of Hirghigo Bahir Selate, to which vessels usually tie up stern-first and med-moor.

Additional berthing information is given in the accompanying table titled **Mitsiwa Harbor—Berth Information**.

Aspect.—When seen from a distance, the light structure on the E end of the island of Mitsiwa is conspicuous. Other good landmarks are the water tower, about 0.2 mile W of the E end of the island of Mitsiwa; the Governor's Palace, a white building with a damaged dome, on the N end of the island of Taulud; and Sheikh Said, a sandy island covered with mangroves, S of the island of Mitsiwa. A rough stone breakwater extends about 0.2 mile SSE from the SW extremity of Mitsiwa.

Mitsiwa Harbor—Governor's Palace

A naval signal station, 33m high and painted blue, stands close SE of the radar tower, near the root of the N breakwater. A conspicuous chimney stands about 1 mile NNW of the N extremity of the mole in Dachilia.

Pilotage.—Pilotage is compulsory for vessels over 100 gross tons. The pilot boards about 0.8 mile E of the harbor entrance. Pilots board from a white launch with the letter "P" painted in black on the vessel's sides. The pilots can be contacted on VHF channels 14, 16, and 24.

Regulations.—Vessels should send their ETA 7 days, 72 hours, 48 hours, and 24 hours before arrival.

Only one vessel may maneuver in the harbor at a time.

Vessels are required to maintain enough members of the crew aboard to enable the vessel to be moved at any time.

The vessels engines shall not be shut down completely without the harbormaster's permission.

Signals.—The port signal station is in Mitsiwa about 0.2 mile W of Ras Mudur. Traffic signals, consisting of lights at night and flags of the International Code of Signals by day, are shown from the signal station. The signals and their meaning are given in the accompanying table titled **Mitsiwa Harbor—Traffic Signals**.

Vessels bound for Mitsiwa Harbor should establish radio communication with the Mitsiwa Radio Station.

Contact Information.—The port authority can be contacted, as follows:

1. Call sign: Mitsiwa Port
2. VHF: VHF channels 14, 16, and 24
3. Telephone: 291-1-552122
   291-1-551193
   291-1-552493
4. Facsimile: 291-1-552106
5. E-mail: massport@tse.com.er

Anchorage.—If advised to anchor out by the signal station, anchorage is available about 1.75 miles ESE of the S breakwater, in 38m, mud.

Anchorage can be taken, with the permission of the port manager, in the harbor N of the island of Mitsiwa, in 10.9 to 16.4m, mud, good holding ground, but with little swinging room. The entrance range is a good mark for anchoring and vessels may haul their sterns into the main quay.

In Dachilia, anchorage can be taken, in 10.9m, mud, in its outer part, or in lesser depths in the NW part. Anchorage is prohibited in the area as shown on the chart E of the entrance of Dachilia. It is also prohibited in the area between the islands of Mitsiwa and Sheikh Said.

Mitsiwa Harbor—Traffic Signals

Day signal	Night signal	Meaning
One black ball or one black triangle	One red light	A vessel is entering, leaving, or maneuvering in the port. When this signal is shown, no other vessel may enter or leave the port.
Flag Z	Two red lights over one white light, vertically disposed	A vessel approaching the port is 15 miles distant from N.
	Two white lights over one red light, vertically disposed	A vessel approaching the port is 15 miles distant from S.
Pennant No. 2	Two red lights, vertically disposed	A vessel approaching the port is 10 miles distant from N.
	Two white lights, vertically disposed	A vessel approaching the port is 10 miles distant from S.
Flag O	One red light over one white light, vertically disposed	A vessel approaching the port is 5 miles distant from N.
	One white light over one red light, vertically disposed	A vessel approaching the port is 5 miles distant from S.

In the South Anchorage, which is entered S of **Sheik Said Island** (15°36'N., 39°29'E.), vessels can take anchorage, in 11.9m, about 0.3 mile WSW of the S end of the island of Taulud. It is encumbered by reefs extending from the shore and by isolated shoals.

Caution.—Many war-damaged buildings may not be useful for navigational reference.

A wreck, best seen on the chart, lies in the entrance to Seno Twalet Ye Bahir Weshmet and has a least depth of 10.7m. A dangerous wreck lies sunk in a position about 0.8 mile W of the S end of the island of Taulud.

A concrete column, about 2m in diameter and sometimes showing 1m above water, stands on the S side of the fairway, in a position about 1 mile S of the S end of the island of Taulud.

Navigational aids are unreliable. They may be missing, unlit, or out of position.

A danger area, marking unexploded ordnance on the sea bottom, lies about 2 miles E of Ras el Garara.

Mitsiwa to Penisola di Buri

5.14 Hargigo Bahir Selate (15°33'N., 39°30'E.) is entered between Sheikh Said and Ras Nauret, a point marked by a beacon about 5 miles SE. The AGIP Oil Terminal, located on the W side of the bay, has been described in paragraph 5.13. The coast in the vicinity of the bay is low, rising gradually to the base of the coastal hills. Archico, a village on the W shore of the bay, has several white houses, a conspicuous minaret, and a pier.

Ras Amas (15°32'N., 39°35'E.), a coral point lying about 1 mile ESE of Ras Nauret, is low and rounded. A 4.9m shoal, marked by discolored water, lies about 2 miles E of Ras Amas.

Zula Bahir Selate (15°30'N., 39°40'E.) is entered between Ras Amas and Ras Corali, the N extremity of Penisola di Buri. Deep water is generally found near the shore, though in places reefs extend about 1 mile offshore.

Monte Ghedem (15°25'N., 39°33'E.), on the W side of the gulf about 6 miles S of Ras Amas, is prominent and in clear weather can be seen from N of Isola Harat. This landmark, an isolated wooded mountain mass, is irregular in shape and rounded. The summit consists of a small pyramidal peak with several small peaks of nearly the same elevation.

Isola Dissei (15°28'N., 39°45'E.) is volcanic, with a series of conical peaks, the summit of which is Monte Dissei, in its S part. A beacon stands on the summit of Monte Dissei. A reef extends 4.5 miles N from Isola Dissei, almost connecting with the reef fringing Isolotto Madote, which is described in paragraph 5.17.

Monte Aleita, in a position about 13 miles SSW of Ras Corali, when seen in range with Isola Dissei appears wedge-shaped, the bluff being to the NW.

Anchorage.—Anchorage can be taken off the entrance of a small inlet on the SE side of Isola Dissei. A good berth is in 12.8m, sand, with the N part of the inlet bearing 290° and Monte Dissei bearing 218°.

Care should be taken in approaching this anchorage, as the depths decrease rapidly. A shoal with depths of 0.9 to 4.5m and some rocks at its SE end lies about 0.3 mile ENE of Monte Dissei and about 0.1 mile offshore.

5.15 Isola Ota (15°30'N., 39°49'E.), small and flat-topped, lies about 3 miles W of Ras Corali, at the N end of a drying reef extending S to the coast.

Canale di Dissei (15°30'N., 39°48'E.), lying between Isola Ota and Penisola di Buri on the E and Isolotto Madote and Isola Dissei on the W, is generally deep, though several shoals and rocks lie in it.

Seil, an islet, 17m high and fringed by a reef, lies in mid-channel, about 2 miles E of Monte Dissei; Seil can be passed on either side.

Two white rocks, 3.9m high and fringed by a reef, lie about 1 mile SSE of the S end of Isola Dissei; a 3.2m patch lies midway between them.

About 1 mile ESE of these rocks are two more white rocks, 4.5m high, also fringed by a reef. Indore Rocks, a group of coral heads with less than 1.8m, lie about 0.3 mile E of the latter two rocks.

It was reported that even in a favorable light, these coral heads cannot be seen from aloft. Vessels proceeding through the S entrance of Canale di Dissei should keep to the E side of the passage, where the coastal reef is steep-to and extends about 0.2 mile offshore.

5.16 Ras Makato (Ras Malcatto) (15°15'N., 39°43'E.) lies 18 miles SSE of Ras Amas. The intervening land rises gently from the coast to Monte Ghedem and other high land. The village of Zula lies 2.5 miles W of the point.

The ancient Greek ruins of Adulis lie 0.7 mile NW of the village. A pier stands close S of Ras Makato.

Anchorage can be taken, in about 20.1m, about 1 mile off Ras Makato.

Arafali (15°05'N., 39°45'E.), a village at the head of Zula Bahir Selate, consists of a collection of mud huts. There are three conspicuous extinct craters about 1 mile S of the village.

Vessels can take anchorage close off Arafali, in 9.1 to 37m, mud, W of a shoal with a least depth of 3m extending NE from the village.

Dolphin Cove (Seno de Dolphin) (15°08'N., 39°50'E.), a small bight in the coastal reef, has general depths of 6.4 to 14.9m. The shore of the bight is low and flat, but about 1 mile inland the land rises to a rocky ridge 150m high.

Two beacons, in range 084°, lead through the entrance to the anchorage, in 12.8m, sand and mud, good holding ground.

Melita Bay (Baia di Melita) (15°15'N., 39°49'E.), entered E of Ras Nasiracurra, is nearly filled with reefs; the shore consists of mangrove swamp, backed by a grassy plain about 6.1m high. A beacon, 3m high, stands on the edge of the plain in the NE part of the bay. A 4.5m shoal extends about 1 mile S from Ras Nasiracurra. Several detached patches, with depths of 6.7 to 11.9m, lie 0.5 mile SSE through E of the same point.

Anchorage.—Anchorage, sheltered from all except S or SW winds, can be obtained in the entrance of Melita Bay, in about 18.3m, sand and coral.

5.17 Isolotto Madote (15°35'N., 39°46'E.), on the SW side of the fairway leading to The Narrows, is 2.4m high and sandy. The islet lies on the W side of a reef. The S edge of this reef is nearly connected to the reef extending N from Isola Dissei. The islet is marked by a light.

Secca Mugiunia (15°36'N., 39°43'E.), about 3 miles NW of

Isolotto Madote, is a rocky patch that is partially awash and generally visible.

Anchorage.—Anchorage can be taken, in 18.3 to 27.4m, about 1 mile NW of Isolotto Madote; the depths increase rapidly farther out. Anchorage, in 16.5 to 20.1m, is also available 0.5 to 1 mile NE of Secca Mugiunia.

5.18 The Narrows (15°33'N., 39°57'E.), lying between the N part of Penisola di Buri and the SW side of Dehalak Deset, consists of three deep channels, divided by Isolotti Assarka and Isola Shumma.

The reefs fringing the mainland and islands are steep-to and visible; the land on either side consists of coral cliffs, about l.8m high, which are well-defined.

The main channel, between Isolotti Assarka and Isola Shumma, is 2.5 miles wide, with 58 to 75m in the fairway, and passes NE of the 10.1m shoal about 2 miles ESE of Isolotti Assarka.

Isolotti Assarka (15°32'N., 39°55'E.), two small islets about 1 mile apart, lie on the SW side of the main channel. The NW islet is 6.1m high and mostly bordered by low cliffs. A bank, with a least depth of 3.9m, extends about 1 mile from the SE end of the NW islet.

The SE islet is 4.5m high and sandy; a drying reef extends about 1 mile SE from it. A bank, with a least depth of 8.5m, extends S from the SE islet. The NW islet is marked by a light.

Caution.—A dangerous submerged rock lies about 2.5 miles ESE of the SE islet.

5.19 Isola Shumma (15°32'N., 40°00'E.), on the NE side of The Narrows, is 15m high, marked by a light, and bordered by reefs extending as far as 0.5 mile from its NE and SW sides.

Port Smyth (15°32'N., 39°59'E.), an opening in the coastal reef on the SW side of Isola Shumma, affords anchorage, in 5.8 to 7.6m, sand and weed, good holding ground.

The entrance, about 110m wide and with a least depth of 6.7m, lies between the edge of the reef on the SE side and a 1.8m patch on the NW side.

A beacon, 2.4m high, marks the edge of the reef on the SE side of the entrance; another beacon, 2.4m high, marks the 1.8m patch on the NW side of the entrance.

A rocky patch, nearly awash, marked by a pole beacon surmounted by a cylinder, lies about 0.1 mile NE of the SE entrance point.

Two buoys, about 46m apart, lie near the edge of the reef on the NW side of the entrance.

Two beacons, in range about 056°, stand at the head of Port Smyth and lead in through the entrance.

The front beacon is a white stone pyramid, while the rear beacon is a stone pyramid that is painted in black and white bands.

A vessel should enter this port on the range line until the beacon on the rocky patch about 0.1 mile within the entrance bears about 100°, then alter course N and anchor as convenient. It is prudent to have a boat ahead when entering. A pier extends from the shore, close SE of the front range beacon.

The NE coast of Penisola di Buri is low, and, in places, reefs extend as far as 0.5 mile offshore. Monte Dule, a conical hill rising to a height of 218m, stands about 10 miles SSE of Ras Corali. This landmark is the summit of a range of hills extending NW.

Monte Dule forms a good landmark, but must not be mistaken for Monte Dissei on Isola Dissei; the latter has a similar appearance from N, but is only half its height.

Isola Delemme (15°30'N., 39°54'E.), 7.6m high and partially wooded, lies on the edge of the coastal reef, close E of Ras Corali. During S winds, there is fair anchorage, in 18.3 to 27.4m, mud, NW of Isola Delemme. Strong SE winds send a troublesome swell into this anchorage. Landing is difficult at times.

Isolotto Umm Namus, small and with conspicuous white sand patches on the N and S sides, lies in a position about 10 miles SE of Isola Delemme.

Sheltered anchorage can be taken between the coast and Isolotto Umm Namus according to the direction of the wind; it should be taken nearer the islet, both for shelter and to avoid the 6.9m patches off the coast.

Fawn Shoal (15°23'N., 40°10'E.), with a depth of 8.7m, lies about 5 miles E of Isolotto Umm Namus. Discolored water has been reported about 2 miles NE of the shoal. A well head, with a depth of 14.6m, lies about 2 miles E of Fawn Shoal.

Isola Dehalak Deset (15°37'N., 39°58'E.), the largest island on Dahlak Bank, is generally low.

Monte Im Ium (15°43'N., 40°02'E.), a conspicuous wedge-shaped mound when seen from SW, stands on the NE shore of Gubbet Mus Nefit. A beacon stands on Monte Im Ium.

Ras Malcomma (15°37'N., 39°58'E.), the SW extremity of Isola Dehalak Deset, has a drying reef extending about 2 miles W. Seil Baius, a small black islet, stands on this reef.

Isolotto Enteara, 1.8m high and sandy, lies at the W end of a bank, with depths less than 18.3m extending about 5 miles WNW from Ras Malcomma. Its beach shows in the sun.

A channel, nearly 0.5 mile wide, lies between the reef fringing Isolotto Enteara and the coastal reef extending W and NW from Ras Malcomma.

Vessels may anchor in this channel, but it should be approached with caution.

5.20 Gubbet Mus Nefit (Sogra) (15°41'N., 40°00'E.), a large bay on the W side of Isola Dehalak Deset, is deep, but vessels can anchor close to the shore. Nokra Deset divides the entrance of the bay into two channels.

The channel S of the island is about 0.1 mile in width and has depths of 10.1 to 25.6m, which increase rapidly both inside and outside the channel. The channel N of the island is suitable for boats only.

Nokra Deset (15°43'N., 39°56'E.) is interspersed with small valleys, low patches of grass, and a few palms. On the S side of the island there is a village; on the NE shore of the island there are two inconspicuous lime kilns.

A reef, nearly awash, extends about 1 mile SSE from the N shore of the bay, close within the entrance, E of Isola Nokra Deset. A small islet lies on the W edge of the middle of this reef.

Tides—Currents.—Tidal currents in the entrance of the bay attain a velocity of 1 to 3 knots. Vessels should enter or leave when the current is setting in the opposite direction to which the vessel is proceeding, and about 15 minutes before the time of HW or LW, when the tidal currents do not have a velocity of more than 1 knot.

Aspect.—Two beacons, in line bearing 031°, lead through the first reach of the main channel S of Nokra Deset. The front beacon, a white pyramid, stands close offshore S of the village on the S side of the island; the rear beacon, a black pyramid, stands about 1 mile NNE of the front beacon.

Another rear beacon, a white pyramid with a black stripe, stands about 0.1 mile W of the above front beacon. These two beacons in line bearing 276° lead through the second reach of the main channel.

A beacon stands on the SE edge of a reef close off the SW extremity of Nokra Deset.

A buoy marks the SE entrance of the channel, and is moored about 0.3 mile SE of the SW extremity of Nokra Deset.

A beacon stands on Isola Dehalak Deset, about 0.2 mile ESE of **Ras Bulul** (15°42'N., 39°57'E.).

A beacon stands on the small islet lying on the reef which extends SSE from the N shore of the bay E of Nokra Deset.

A beacon stands on a rock, awash, on the above reef, about 0.3 mile SSE of the small islet.

A beacon stands on Nokra Deset, also in a position about 1 mile NW of the island's SE extremity. Another beacon stands on a point about 2 miles NE of the same point.

Anchorage.—Anchorage can be taken, in 9.1 to 14.6m, sand, in the channel E of Nokra Deset about 1 mile N of the island's SE extremity.

Anchorage can also be taken, in 18.3m, sand, in the outer part of an inlet on the SW side of Gubbet Mus Nefit and about 2 miles SE of the entrance of the bay.

One can anchor in an inlet about 4 miles farther SE, in 12.8 to 20.1m, sand.

Penisola di Buri to Ras Shakhs

5.21 Howakil Bay (15°10'N., 40°15'E.) is a extensive bay lying between Ras Lamma Tacaito, the SW extremity of the N coast of Penisola di Buri, and Andeba Ye Midir Zerf Chaf, about 31 miles ESE. The bay is encumbered with islands and reefs.

There are several good anchorages under the lee of the outer islands, but great caution is necessary in approaching them.

There are numerous mountains and hills inland in this vicinity, some are in ranges while others are isolated volcanic cones.

In very clear weather, the Ethiopian mountains may be seen rising is successive ranges to an elevation of about 3,050m.

Andeba Ye Midir Zerf Chaf (Ras Andadda) (15°02'N., 40°32'E.) is the N extremity of a promontory, on which rise two double-peaked hills.

Beach Hill, a conspicuous double-peaked hill, rises close within **Ras Herbe** (15°00'N., 40°34'E.).

It can be seen for a distance of 18 miles and has the appearance of an island, the land around being very low. Other volcanic hills rise from the plain behind Beach Hill, but they are not quite as conspicuous.

Secca Muhammad (15°09'N., 40°44'E.), 13 miles NE of Ras Herbe, has a least depth of 3.6m, coral, and is visible from some distance. A 15.5m coral patch lies about 5 miles SSE of Secca Muhammad.

Abu el Cosu (15°18'N., 40°34'E.), about 13 miles NW of Secca Muhammad, is a steep-to coral reef that shows well. A large portion of this reef dries.

Ras Gurmal (14°58'N., 40°38'E.), 4.9m high and connected to the coast by a low neck of sand, has the appearance of an island from close inshore.

Ras Manrec (14°54'N., 40°43'E.) is a peninsula presenting a broad face seaward. This peninsula is connected to the coast by a low neck of sand, and backed by a mangrove swamp.

Several shoals of 9.6 to 11.4m lie close within the 20m curve along this part of the coast.

Anchorage.—During fine weather, anchorage can be taken, in places, from 1.5 to 3 miles off this part of the coast, in 14.6 to 25.6m.

5.22 Anfile Bay (Baia d'Anfile) (14°45'N., 40°50'E.), encumbered with many islands and shoals in depths less than 11m, is entered between **Isola Midir** (14°52'N., 40°45'E.) and Ras Anfile, about 11 miles SE. The land backing the shore is a vast plain dotted with small hills.

Monte Faraon, about 4 miles SW of Isola Midir, consists of three black cones, the S and highest of which rises to 130m. The N is 128m high and the third cone is lower and truncated. These cones are very conspicuous on a clear day.

Isolotti Barm-al-Agi lie on a bank with a least depth of 2.7m, which lies in the entrance of Anfile Bay, E of Isola Midir. The outer islet, 5.8m high, is flat and bare; the inner islet, which is the larger of the two, is 10m high with some bushes on it.

A shoal spit extends about 1 mile W from the W end of the outer islet; a 5m patch lies about 2 miles SE of the same islet. Shoals and reefs surround the inner islet and extend as far as 0.5 mile SW from it.

Anchorage.—During S winds, good anchorage can be taken, in 12.8 to 14.6m, sand and mud, about 1 mile N of the inner islet of Isolotti Barm-al-Agi.

Anchorage can also be taken, in 16.5m, mud, and about 1 mile S of the same islet. Derebsasa Deset (Isola Grabsus), about 1 mile N of Ras Anfile, is 7.6m high and covered with bushes. A beacon stands on the W part of the island.

A shoal spit extends about 1 mile SW from the W end of the island and terminates in a rock, awash.

Anchorage can be taken, in 11.9 to 14.6m, sand, about 1 mile N of the W end of the island.

5.23 Ras Anfile (14°43'N., 40°53'E.) is coral and fringed by a reef; on SSW bearings it has the appearance of an island.

The coast between Ras Anfile and Ras Shakha, about 18 miles ESE, is low and sandy, with several small indentations, but shows as an unbroken line. Several shoals, with depths less than 6.9m, lie as far as 2.5 miles off this part of the coast.

Ras Anrata (14°42'N., 40°57'E.) is low and has the appearance of an island close to the shore.

The village of Tio, consisting of several conspicuous buildings, stands on this point. The shore lights in vicinity of Ras Anrata are reported to be visible for a distance of 8 miles.

Punta Shab Shakhs (14°39'N., 41°07'E.) is low and sandy. Shab Shakhs, with depths less than 2m, extends about 3 miles N from Punta Shab Shakhs. This shallow spit does not show well and, with depths of 18.3 to 27.4m close off, offers little warning of its proximity.

The light structure on Punta Shab Shakhs is reported to give a good radar return in comparison to the surrounding coastline.

Anchorage can be taken, in 14.6m, about 5 miles NW of

Punta Shab Shakhs.

Ras Shakhs (14°38'N., 41°12'E.) is low and sandy. Between the point and the base of the mountains is a broad flat plain, which renders the low point inconspicuous. Under some conditions, this point is dangerous to approach, as it cannot be seen until close-to.

South Mitsiwa Channel is entered N of Ras Shakhs. Caution is advised as several shoal patches lie within the entrance, and are best seen on the chart. See paragraph 5.5 for information on weather and currents.

Ras Shakhs to Assab (Aseb)

5.24 The coast between Ras Shakhs and **Ras Terma** (13°14'N., 42°33'E.) is backed by ranges of high volcanic mountains sloping to the sea. Monte Anrata stands at the W end of a hilly range, about 12 miles WSW of Ras Shakhs. It has the appearance of a round summit on the E side of a flat ridge. This hilly range extends E for about 10 miles and terminates in Monte Ghedele.

Some of the peaks in this range, though lower than Monte Anrata, are conspicuous because of their jagged shapes. They often may be seen when the higher and more distant mountains are obscured by haze.

Another range extends about 13 miles S from Monte Anrata and terminates in a round summit 1,250m high. Monte Cosar, 700m high, about 15 miles S of Ras Shakhs, shows up well.

5.25 Endel Monte (13°50'N., 41°55'E.), marked by a pillar, is conical in shape. Close NE are two conical hills, not quite so high, which appear as one when seen from ENE. Sachsohe Monte, marked by a pillar, stands about 3 miles SE of Endel Monte.

Picco Aguzzo (13°35'N., 41°49'E.) lies about 16 miles SSW of Endel Monte. About 5 miles farther SSW is another mountain, 1,549m high. Both of these mountains have sharp peaks on their SW ends. A smooth-topped mountain rises to a height of 2,131m about 8 miles farther SSW.

On the W side of the N approach to Bab El Mandeb, **Gebel Aduali** (12°57'N., 42°26'E.) stands about 18 miles SSW of Ras Terma and is the highest peak in the vicinity.

A range of well-defined and conspicuous peaks, which connects with the high land S of Baia di Beilul, extends E from Gebel Aduali toward the coast.

5.26 Tagi Terara (Gebel Tachi) (13°03'N., 42°39'E.), about 14 miles ENE of Gebel Aduali, is a conical peak.

Monte Garzale, similar to Tagi Terara, stands about 4 miles WSW of the latter. Sela Terara (Monte Sellal), dark and conspicuous, lies about 5 miles SE of Tagi Terara.

Monte Marcale, about 11 miles W of Sela Terara, resembles the latter from some directions, but it is much more towering.

Monte Abu Lulu (12°38'N., 42°54'E.) is a tableland, on the SE side of which is Monte Ann, an isolated cone, 334m high. Monte Potosi, about 1,524m high, lies about 27 miles W of Monte Abu Lulu. It has two clefts and is a good mark.

Massif Du Ada-Ali, about 10 miles SE of Monte Abu Lulu, is 500m high. Massif du Maghaira, the continuation W of Massif du Abu-Ali, rises to a height of 679m and is the highest hill in the vicinity.

Baia di Edd (Baia di Ed) (13°56'N., 41°43'E.) is shallow, with a sandy plain at its head. The village of Idi (Edd) (Ed), at the head of this bay, has some white buildings at its W end and a mosque with a minaret at its NE end. Backing the S part of the bay is a promontory of black rocky lava, 10 to 15.2m high.

5.27 Kordumuit Deset (Isola Cordumiat) (14°06'N., 41°40'E.) is a rugged bluff volcanic island, 83m high, lying about 4 miles offshore. A reef, with a least depth of 4.6m, extends about 2 miles W.

A bank, with depths of less than 10m and on which an islet lies, extends about 1 mile N from the island.

Isolotti Kordumuit (Isolotti Curdumiat) (14°04'N., 41°39'E.), consisting of several islets, lie about 2 miles SSW of Kordumuit Deset and within the 10m curve. Between these islets and the coast there are depths of 6.4 to 8.2m, which should only be navigated by vessels with local knowledge. A dangerous wreck lies sunk about 4 miles WNW of Kordumuit Deset and about 2 miles offshore.

Anchorage.—Anchorage can be taken, between Kordumuit Deset and the islets S, in 25.6m, good holding ground; it should only be used in calm weather, as it affords no shelter.

5.28 Ras Sceraier (Ras Bugeni) (13°46'N., 42°02'E.) lies about 21 miles SE of Idi; the intervening coast is rocky with several indentions.

Ras Sceraier is the N end of a promontory, rising to Monte Ascoma, 110m high. A conspicuous brown hill with a flat summit, about 61m high, stands on the coast at Ras Sceraier.

Mersa Dudo (13°52'N., 41°54'E.) lies on the W side of a promontory which rises to Monte Dudo, about 7 miles ESE of Ras Alob. A pillar stands on Monte Dudo.

Anchorage.—Anchorage can be taken in Mersa Dudo, in 12 to 14.6m, mud and sand, good holding ground, with Endel Monte bearing about 160° and the N extremity of Isola Sadla about 080°.

Sadla lies within the 20m curve in a position about 1 mile NE of Monte Dudo. There is a saddle-shaped hill at the NE end of the island, and a pillar on a hill at the S end of the island.

Somewhat sheltered anchorage can be taken S of Sadla during NW winds, in 14.6 to 20.1m, good holding ground.

Abaielat, about 2 miles E of Sadla, has three hummocks on it; the SW one is 120m high. The island is fringed by a reef. Anchorage can be taken SE of the island, where there is fair shelter from N winds.

5.29 Beraesoli Bahir Selate (Barassoli Bay) (13°40'N., 42°10'E.) is encumbered with islets and rocks. From the head of the bay, the land gradually rises to an elevation of 268m about 7 miles from the coast.

Several islands, including **Tekay Deset** (Isola Rachmat) (13°40'N., 42°13'E.), lie on the reef extending NW from Penisola Cabia. When seen from a distance, these islands and the other islets in the bay appear to be a continuation of a range of hills extending from the high lands to the coast.

Dannabah, at the NW end of the reef extending from Peninsola Cabia, is partially covered with mangroves and has several peaks over 30m high.

Anchorage.—Good anchorage, sheltered from S and SE winds, can be obtained N of a line joining the N extremity of

Tekay Deset and **Seil Selafi** (13°41'N., 42°08'E.), in 6.9 to 8.2m, or SE or W of Seil Selafi, in 6.4m.

Three white and rocky islets lie in the approach to Beraesoli Bahir Selate, in positions from 5 to 6 miles NW of Tekay Deset.

Northwest Fanaadir, Northeast Fanaadir, and South Fanaadir form the group. Fanaadir Rock, which dries 0.3m and is generally visible, lies about 2 miles SW of the S islet.

The coast S of Tekay Deset is backed by a low, bare, and sandy desert, which extends some distance inland. From the hills S of Beraesoli Bahir Selate, the mountains extend SE from 5 to 12 miles inland, are intersected by valleys, and appear level from seaward.

The only elevation near the coast visible from a distance is Gebel Beheta Ali, 30m high, standing about 13 miles S of Tekay Deset. A pillar stands on Gebel Beheta Ali.

A stranded wreck lies on the coast in position 13°23'N, 42°22'E. A beacon stands on the coast about 20 miles SSE of the NW extremity of Peninsola Cabia.

5.30 Beylul Bahir Selate (Baia di Beilul) is entered W of **Ras Darma** (Ras Terma Zerf Chaf) (13°14'N., 42°33'E.). Monte Darma, 95m high and surmounted by a pillar, stands about 1 mile WSW of Ras Darma; this hill slopes SW and fronts the E side of the bay.

About 4.5 miles SW of Ras Darma is a large white sand patch on the side of the hills in the S part of the bay. It is a good mark when approaching the bay from the N.

Hassalili, surmounted by a pillar, rises in the S part of the bay about 2 miles inland. To the W, the hills are lower; farther W, on the W side of the bay, is a flat clay plain.

The village of Beylul lies about 3 miles inland on the W side of the bay. There is a conspicuous tree standing about 2 miles NE of Beilul; SE of it are conspicuous huts.

Isolotto Bianco, 12.8m high, lies 0.5 mile offshore on a spur of the coastal reef N of the previously-mentioned conspicuous sandy patch.

Anchorage.—The best anchorage is W of the promontory on the E side of Beylul Bahir Selate, in 14.6 to 16.5m, with Isolotto Bianco bearing 216°. This anchorage is approached with the conspicuous white sandy patch bearing 180°. South winds impede and sometimes prevent boat work.

Between Ras Darmaand Ras Loma Zerf Chaf, the NW entrance point of Assab Bahir Selate, about 16 miles SE, the coast is low and fringed by reefs, extending as far as 1 mile offshore. A group of hills, 15.2 to 24m high, lie about 7 miles SE of Ras Darma and 1.5 miles inland.

5.31 **Sanahor Deset** (Isola Sanah Bor) (Sanahbor Deset) (13°05'N., 42°43'E.), 85m high, lies on a shoal, with depths less than 9.1m. A passage, about 0.3 mile wide, with a least depth of 5.1m, lies between the S end of this shoal and the coastal bank.

Ras Loma Zerf Chaf (Ras Loma) (13°02'N., 42°45'E.) is reported to give a good radar return up to a distance of 18 miles.

Bosanquet Shoal (13°05'N., 42°48'E.), with a least depth of 4.8m, sand and broken shells, lies about 5 miles NE of Ras Loma Zerf Chaf; this shoal is indicated by discolored water.

Fieramosca Shoal (13°08'N., 42°51'E.), about 4 miles NE of Bosanquet Shoal, is composed of coral and has a least depth of 5.5m.

Secche Scilla (13°01'N., 43°03'E.), 10 miles further SE, is a sand and coral ridge extending in a NW to SE direction. There is a least depth of 4m and it should not be approached from seaward within a depth of 40m in hazy weather. Strong currents in the vicinity of Secche Scilla generally set parallel with these shoals, but may set toward them.

5.32 **Assab Bahir Selate** (Bay of Aseb) (13°00'N., 42°45'E.), entered between Ras Loma Zerf Chaf and the NW extremity of Fatuma Deset about 5.5 miles E, affords good sheltered anchorage.

The islands in and off the bay prevent any swell from entering, but during the Northeast Monsoon, the prevailing strong SE winds by day cause a sea rough enough to inconvenience boats.

The town of Assab (Aseb) stands on the NW shore of the bay. The low coast of this bay is nearly all bordered by reefs, which are narrow along the W shore, but extends 2.5 miles from the S shore.

The S shore of the bay is low, swampy, muddy, and inundated at high tides. Several islets, mere sand cays covered with cactus and other rank vegetation, lie on the reef that extends off the S coast.

Fatma Deset (Isola Fatumah) (13°02'N., 42°52'E.), low and wooded, attains a height of 15.2m at Ras Fatuma, the NE extremity of the island.

Rubetino Boy (Canale Rubattino) (13°00'N., 42°53'E.), which lies W and S of Fatma Deset, has several shoals in its E part and should only be used by vessels with local knowledge.

Caution.—Mariners are advised to proceed with caution when navigating in Assab Bahir Selate. The area is inadequately surveyed and uncharted shoals may exist, especially off the edges of the reefs.

Assab (Aseb) (13°00'N., 42°45'E.)

World Port Index No. 47880

5.33 Assab lies on the NW side of Assab Bahir Selate. The N port limit is drawn from Ras Gombo to the E end of Ito Om el Baher (Om el Baher Island). The S port limit is drawn from Ras Marcanah to the S end of an island about 1 mile E of it.

Winds—Weather.—During the hot season, from May to September, the climate is particularly unpleasant, being hot and humid, although there is generally a breeze between 0800. and 2000 which affords some relief. From October to April, winds of 11 to 27 knots blow continuously from the SE, ceasing only for short periods at dawn and dusk.

Tides—Currents.—The tidal rise at the port is negligible, the diurnal range being 0.5m. Currents in the vicinity have been reported to reach 4 knots during strong SE winds.

Depths—Limitations.—With the exception of Bosanquet Shoal and Fiermosca Shoal, the approaches to the port have general depths of 10.7 to 20m.

The main harbor complex consists of North Jetty and South Jetty, located about 2 miles N of Ras Caribale. The complex is protected by an offshore breakwater about 0.4 mile long.

Depths alongside are reported to be less than charted, with a

10m patch off North Jetty caused by concrete crumbling from the jetty.

The jetties can accommodate vessels up to 26,000 dwt, with a length of 210m and a draft of 10.3m, although it has been reported (2005) that vessels are limited to a maximum length of 200m and a maximum draft of 10m.

The Crude Oil Terminal, a multi-point mooring consisting of four mooring buoys and a submarine oil pipeline, lies about 1 mile NE of Ras Caribale. Vessels up to 35,000 dwt, with a maximum length of 185m, a maximum beam of 29m, and a maximum draft of 11m, can be accommodated.

The Coastal Tanker Jetty consists of a berth with two mooring buoys at the head of a pier close N of Ras Caribale. Vessels up to 105m long, with a maximum draft of 8m, can be accommodated.

The Shell Jetty (Oil Products Berth) lies about 0.1 mile S of Ras Caribale. Vessels up to 20,000 dwt, with a maximum length of 183m and a maximum draft of 8.5m, can be accommodated. Vessels berth facing S. North currents of up to 1 knot have been experienced at the berth. The pier has been reported (1995) to be in poor condition.

A disused salt berth, serviced by an overhead ropeway, is located SSE of Ras Caribale.

Obstructions and shallow areas can best be seen on the chart.

Assab—Jetty Information			
Berth	**Length**	**Depth**	**Remarks**
North Jetty (South Face)			
No. 1	210m	10.97m	See Notes 1 and 2.
No. 2	150m	10.97m	See Note 1.
No. 3	135m	10.06m	See Note 1.
South Jetty (North Face)			
No. 4	80m	5.48m	See Note 1.
No. 5	140m	8.20m	See Note 1.
No. 6	160m	8.84m	See Note 1.
No. 7	150m	10.06m	See Note 1.
No. 7A	115m	7.5m	See Notes 1 and 2.

Note 1.—Vessels usually berth heading SE.

Note 2.—Can accommodate ro-ro vessels up to 145m long.

Aspect.—Monte Ganga Nord and Monte Ganga Sud, about 2 miles, respectively, SW of Ras Loma Zerf Chaf, are good marks. A conspicuous church with three domes, about 33m high, stands about 0.3 mile SSE of Ras Gombo. There are several ruined buildings on Ras Caribale.

A white two-story building, with a large square tower, stands N of the church; a white one-story building stands S of the church. A conspicuous flare stands 1 mile W of Ras Caribale.

Pilotage.—Pilotage is compulsory for vessels over 200 gross tons and is available 24 hours for the commercial harbor.

The pilot boards about 0.5 mile E of Ras Buja.

Regulations.—Vessels should send their ETA 72 hours, 48 hours, and 24 hours in advance.

Vessels can berth at the Crude Oil Terminal and the Shell Jetty from 0500 to 1200; unberthing can be done from 0600 to 1200. Vessels can berth/unberth at the Coastal Tanker Terminal from 0600 to 1700.

Landing on any of the off-lying islands is prohibited. Approaching boats may be fired on without warning. Special regulations are in effect for vessels handling dangerous cargo.

Signals.—Visual signals are displayed from a signal station located just N of North Jetty and are listed in the table titled **Assab—Traffic Signals.**

Assab—Traffic Signals		
Day signal	**Night signal**	**Meaning**
One black ball	One red light	A vessel is maneuvering within the harbor or channels.
One black cylinder	One red light over one white light, vertically disposed	A vessel is approaching from N.
One black cone, point up	Two red lights, vertically disposed	A vessel is approaching from S.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Assab Port
2. VHF: VHF channels 12 and 14
3. Telephone: 291-1-660710
   291-1-660192
   291-1-660687
4. Facsimile: 291-1-661249
   291-1-661226

Anchorage.—Anchorage, secure in all winds, is available in the S part of the bay.

The quarantine anchorage is located just E of the pilot boarding ground and is best seen on the chart. The anchorage offers depths of 16.8 to 18m.

Anchorage is prohibited in an area, best seen on the chart, N of a line joining Ras Loma Zerf Chaf and Fatuma Deset. Anchorage is also prohibited in an area off the port, best seen on the chart.

Directions.—If approaching from N, steer to pass about midway between Sanahor Deset and Bosanquet Shoal. Alter course to pass 1 mile off the W shore of the bay when due E of Sanahor Deset.

When approaching from NE, steer for **Sella Monte** (Monte Sella) (13°00'N., 42°42'E.) ahead bearing 241°. This course passes about 2 miles SE of Fieramosca Shoal and 1 mile NW of the shore, extending from the NW side of Fatma Deset. When the light on Ras Gombo bears 235°, alter course for Aseb.

If arriving from E, Sanahor Deset, steered for on a bearing of 270°, is an excellent mark. When Sella Monte bears 241°, steer for it on that bearing, and proceed as directed above.

Caution.—The area is inadequately surveyed and uncharted shoals may exist.

Assab to Bab al Mandeb

5.34 The coast between **Ras Dehanebe Ye Midir Zerf Chaf** (Ras Dehaneba) (12°54'N., 43°01'E.) and Ras Dumera Ye Midir Zerf Chaf (Ras Dumera), about 14 miles SE, is low and sandy.

The coastal reef extends as far as 3 miles offshore between Ras Dumera Ye Midir Zerf Chaf and Ras Sintian, about 6 miles SE, where it closes the coast. The 20m curve lies about 2 miles off the coastal reef along this stretch of coast.

Ghinnibad (12°47'N., 43°05'E.), a village about 3 miles S of Ras Sintian, is easily recognized by the high palms in the vicinity.

Ras Rehayto (Capo Raheita) (12°44'N., 43°07'E.), 81m high and conspicuous, extends about 1 mile from the coast. It is blackish in appearance, but on its N slope is a white sand patch. This bluff generally shows up well in hazy weather.

Ras Dumera Ye Midir Zerf Chaf (12°43'N., 43°08'E.) is a small rocky projection appearing on some bearings as two peaks and on others as three; one of these peaks is flat.

This promontory, backed by a sandy plain extending 10 miles inland, appears as an island from a distance, but from the E, it is completely obscured by Dumera Deset.

On the shore between Ras Rehayto and Ras Dumera Ye Midir Zerf Chaf, there is a small conical hill and another hill with a projection NW. The rise and fall of the tide completely changes the configuration of the coast between these two points. The coast in this area should not be approached within a depth of 9m.

5.35 Dumera Island (Dumera Deset) (12°43'N., 43°09'E.), which is double-peaked, lies about 0.3 mile E of Ras Dumera Ye Midir Zerf Chaf. The island is similar in appearance to this point when seen from a distance and shows up well in hazy weather.

A shoal, with a least depth of 6m, lies about 1 mile N of Dumera Island. The change in the color of the water when there is much sea makes this shoal clearly visible.

Dumera Island is reported to give a good radar return up to a distance of 15 miles.

The coast SE of Ras Dumera Ye Midir Zerf Chaf is backed by a low and sandy plain about 10 miles wide to Ras Siyyan, a distance of about 18 miles.

Siyyan Himar (Rocher Moulhele) (12°31'N., 43°18'E.), two small rocks, each of which is 1.8m high, lie on a reef about 3 miles NNW of Ras Siyyan and 1.5 miles offshore. This reef dries near its SE end. A dangerous wreck lies about 2 miles N of Ras Siyyan.

Bab al Mandeb

5.36 Bab al Mandeb (12°31'N., 43°30'E.), the S entrance of the Red Sea, is divided by Jazirat Mayyun (Perim) (Berim) into two straits. Large Strait lies between the African shore on the W and SW and Perim on the NE; Small Strait lies between the latter island and the Arabian shore. Large Strait is recommended, as many casualties have occurred in Small Strait.

The NW side of the strait from Assab to Ras Siyan is described beginning in paragraph 5.34, while Ras Siyan and the coast S of it is described beginning in paragraph 10.2.

The NE portion of the strait's E coast is described beginning in paragraph 7.50, while the coast from Ras Bab al Mandeb S is described beginning in paragraph 8.2.

An IMO-adopted Traffic Separation Scheme (TSS) lies in the waters of Bab al Mandeb and is best seen on the appropriate chart. For information concerning limiting vessel crossing traffic in the Precautionary Area located at the N entrance of the TSS, see paragraph 3.9.

It has been reported (2007) that discussions have begun regarding building a bridge crossing Ras Bab al Mandeb that would connect Yemen and Djibouti. The plan includes the construction of a viaduct across Small Strait from the coast of Yemen to Jazirat Mayyun (Perim) (Berim) (12°40'N., 43°25'E.), and then continuing as a bridge across Large Strait to Djibouti.

Tides—Currents.—During the Southwest Monsoon, June to September, the water runs out of the Red Sea; during the Northeast Monsoon, November to April, it runs in. The surface set in the straits, the resultant of the currents caused by the wind and the tidal currents, is very variable.

The current in the straits sets approximately in the direction of the wind and attains a velocity of 1.5 knots. During November to April, the currents caused by the strong SE winds often overcome the SE tidal currents, and there may be a NW set of from 0.5 knot to 3.5 knots.

In November and December, many years ago, during fairly strong SE winds, this set to the NW was observed extending from Large Strait to the parallel of 13°N, at a velocity of 1.5 to 3.5 knots.

The NW set close SW of Jazirat Mayyun (Perim) (Berim) turns sharply N round Balfe Point, its W extremity.

In June and July, many years ago, during light NW winds, the currents generally set SSE off this island at velocities of less than 0.5 knot, to 1.5 knots.

From recorded observations made in January, many years ago, at a position 7 miles SW of Jazirat Mayyun (Perim) (Berim), it appears that the surface currents set into the Red Sea at an average velocity of 1.5 knots and are greatly influenced by the tidal currents during this period.

From about 8 hours before to 4 hours after the highest HW at Jazirat Mayyun (Perim) (Berim), the NW set was from 1.5 to 2.5 knots. While from 4 hours after to 8 hours before the highest HW at Jazirat Mayyun (Perim) (Berim), the velocity was from 0 to 1.5 knots.

The tidal currents are very irregular, both in velocity and duration. Sometimes in the middle of the strait, there is a feeble SE current, while at other times, it attains a velocity of 4 knots and causes ripples when against the wind.

After strong NW or SE winds, the tidal currents setting in the same direction as the wind may continue for 16 hours.

The currents set NW during the rising tide and SE during the falling tide. From recorded observations in January, many years ago, the tidal currents during this time set each way for about 12 hours; this may be expected, as there is practically only one tide daily in this locality.

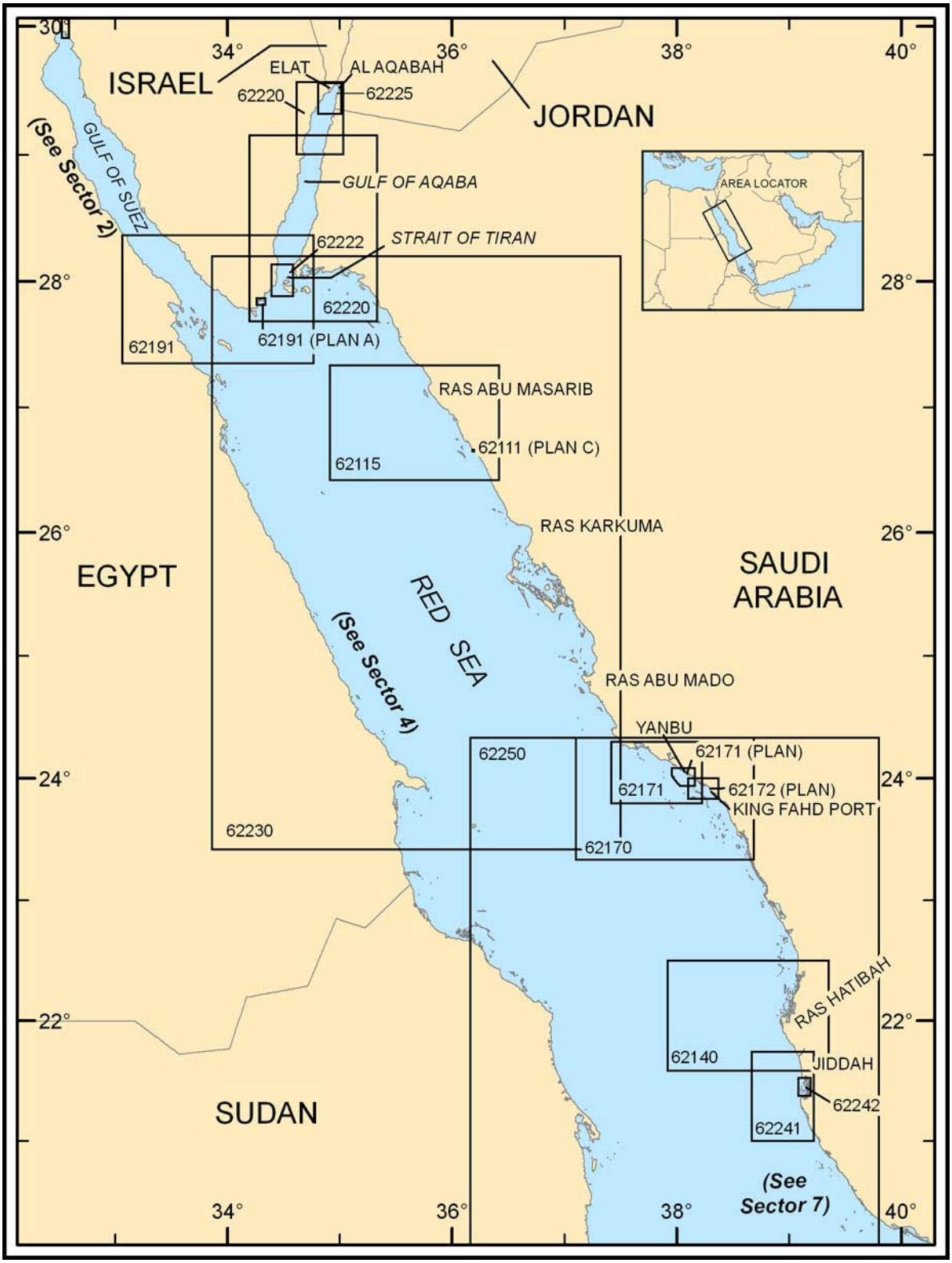
At the SE extremity of Jazirat Mayyun (Perim) (Berim), the NW current divides, with one part flowing through Small Strait and the other flowing along the SW coast of Jazirat Mayyun (Perim) (Berim).

That current flowing through Small Strait appears to divide at the N extremity of Jazirat Mayyun (Perim) (Berim), with

one part setting NNW and the other rounding Balfe Point. The latter turns SE along the SW coast of Jazirat Mayyun (Perim) (Berim) and, at 2 to 3 hours before HW, it meets the branch of the NW current.

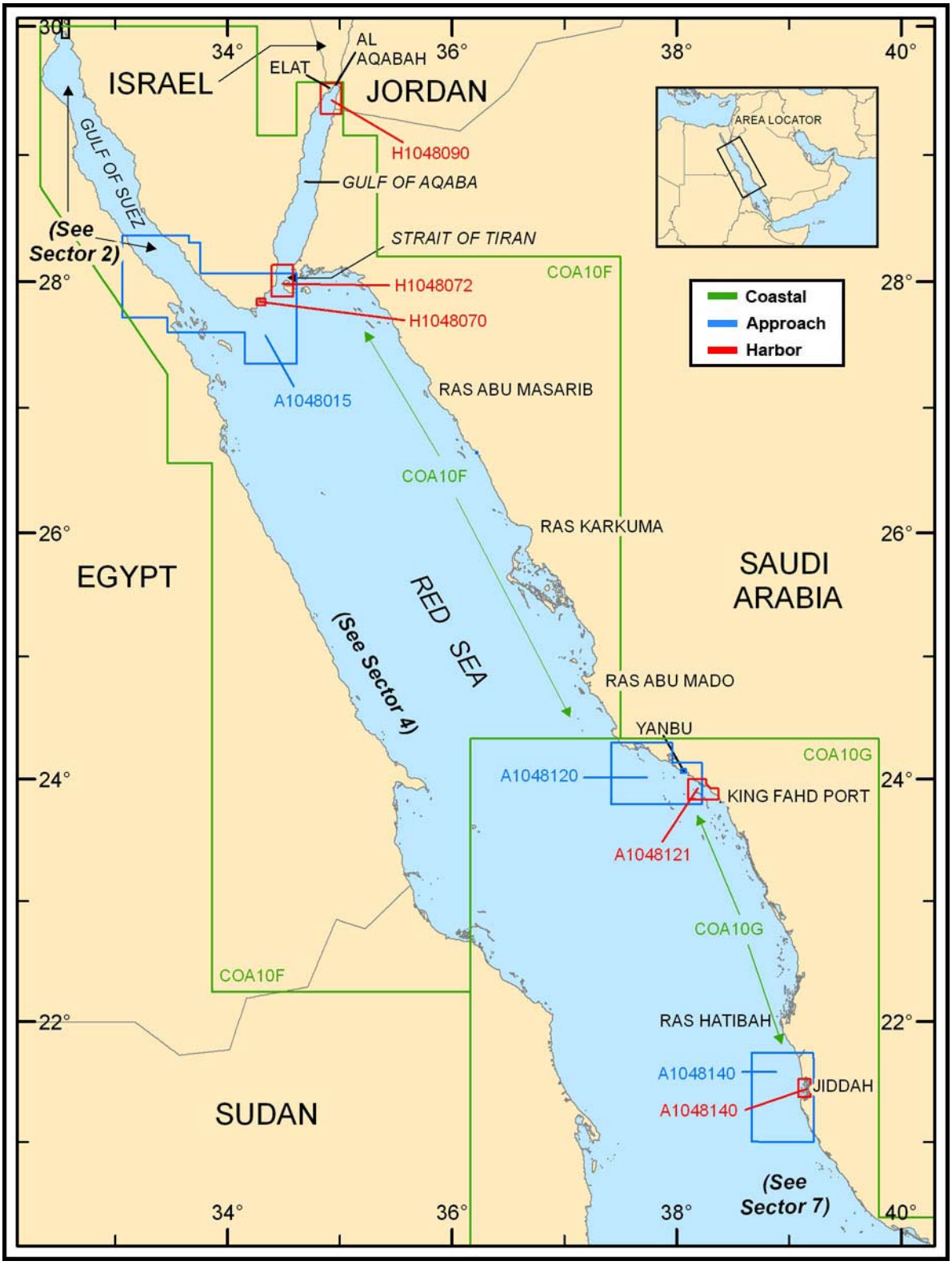
This causes overfalls, which generally work E to the entrance of False Bay. These currents are much influenced by the wind, and during the period when the current is setting into the Red Sea, the SE current does not appear to run.

Jazirat Mayyun (Perim) (Barim) (12°40'N., 43°25'E.) and Mayyun Harbor (Perim Harbor, which is located on the S side of Perim, are described in paragraph 7.67 and paragraph 7.68, respectively.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **6** — CHART INFORMATION



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SECTOR 6 — DNC LIBRARY INFORMATION

SECTOR 6

THE RED SEA—EAST SIDE—RAS MUHAMMAD TO JEDDAH, INCLUDING THE GULF OF AQABA

Plan.—This sector describes the Gulf of Aqaba followed by the E side of the Red Sea S to Jeddah. The general sequence of description is from N to S.

General Remarks

6.1 From the E entrance of the Gulf of Aqaba to **Yanbu** (24°05'N., 38°03'E.), the coast is 15.2 to 30m high and generally has no beach; the inlets are more or less coves.

Below Yanbu, the coast is sandier and lower, and the inlets are more or less lagoons. These inlets form convenient stopping places for trading vessels proceeding up and down the Red Sea.

From Yanbu to Jeddah, the coast is composed of sand banks with coral bases and is paralleled by off-lying reefs, which are in some places connected to shore. The entrances of the inlets in this locality are very difficult to distinguish.

The reefs fronting the coast between the E entrance of the Gulf of Aqaba and Jeddah extend in ridges, usually with deep water near them, or lie on extensive banks. They rarely exceed 3 miles in length, and there is no heavy surf on most of them under any conditions of wind or weather.

The high mountains backing the Arabian coast from the head of the Gulf of Aqaba to Bab al Mandeb lie from 12 to 60 miles inland and are conspicuous. They present peaked summits, 1,524 to 2,438m high, and fall abruptly on their seaward side. Other lower ranges exist, which gradually decrease in height as they approach the coast.

In clear weather, the mountains backing the Arabian coast can be seen from 40 to 70 miles, the most noticeable being **Jabal al Muwaylih** (27°37'N., 35°45'E.), **Jabal Radwa** (24°36'N., 38°16'E.), and Jabal Subh, about 88 miles farther SSE.

Jabal Ghazuan, about 60 miles E of Makkah, is about 4,267m high, and is reported to be the highest mountain in Saudi Arabia.

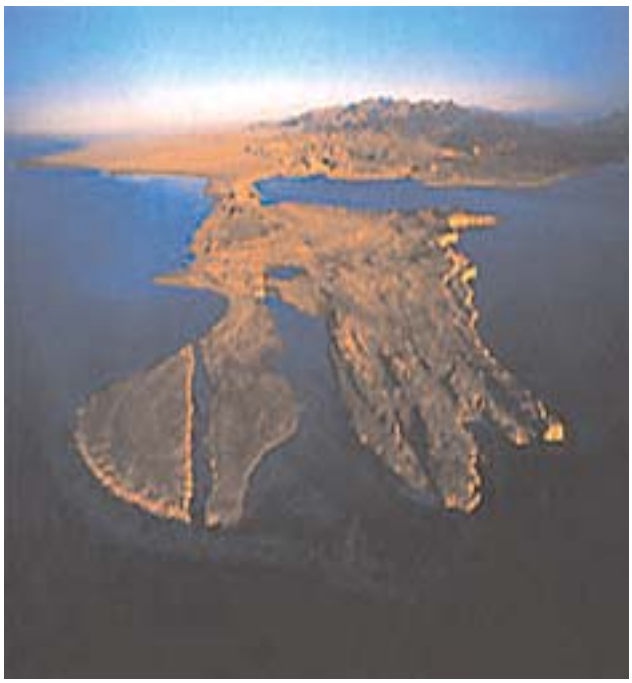
The higher mountains rise above hills of rock, while nearer the coast many hills are of limestone; those nearest the sea are mainly of light-colored sandstone, containing large quantities of shells and coral.

A low area of irregular width extends from the base of the hills to the coast between the head of the Gulf of Aqaba to Jeddah. It is generally deserted and barren, with a few cultivated spots.

The coast for a distance of about 65 miles SE of the Gulf of Aqaba is backed by mountains lying from 10 to 17 miles inland and attaining an elevation of 2,279m in **Jabal Dabbah** (27°50'N., 35°45'E.).

A mountain range extends about 13 miles NW from Jabal al Muwaylih, which is at the S end of the range. This peak, along with Jabal Shar, about 3 miles NW, is conspicuous.

This range consists of very sharp ridges, which show as peaks on some bearings. They have an irregular columnar appearance with chasms between them when seen from S, while from the N, the peaks overlap and the range appears as a narrow ridge.



Ras Muhammad from S

Jabal Liban is located about 74 miles SE of Jabal al Muwaylih and about 10 miles inland. Two small peaks, near the center of this mountain, assist in distinguishing it from seaward. This mountain lies near the NW end of a range which extends about 63 miles SE; Jabal ar Ral (Jal) is conspicuous and isolated with a broad summit near the S end of this range.

Winds—Weather.—Winds from the N incline to the land and sea breezes prevail throughout the year. During March and April, the land and sea breezes are more frequent on this side of the Red Sea than the W side. Land squalls in the S part occur in April and May. From May to July, when these squalls are experienced on the coast of Sudan, there are heavy dews and thick hazy weather on the Arabian coast.

Caution.—Several Areas to be Avoided, best seen on the chart, have been established along the coast on the W side of the S approach to the Strait of Tiran, around several islands on the E side of the Strait, and on the W side of the Red Sea N of the strait. Three charted Areas to be Avoided are IMO-adopted; the remainder have not been adopted by the IMO. To avoid the risk of severe damage to critical ecosystems, the environment, and the economy of the area, all vessels carrying dangerous or toxic cargo, or any other vessel exceeding 500 gt, should avoid

these areas.

The IMO-adopted areas are located, as follows:

1. The area of Ras Muhammad National Park centered on position 27°43'N, 34°12'E.
2. The area along the W side of the Red Sea from the N end of the traffic separation scheme N to latitude 28°46'N.
1. The area NE of Ras Muhammad National Park centered on position 27°53'N, 34°21'E.

The non-adopted areas are located, as follows:

1. The area encircling Jazirat Tiran (27°58'N., 34°33'E.).
2. The area along the W side of the Red Sea extending N from latitude 28°46'N to the Egypt/Israel border.

6.2 **Ras Muhammad** (27°44'N., 34°15'E.) is an abrupt broken cliff with a flat top, 27m high, descending to a low plain a little N of the cape.

Black Hill, on the peninsula about 2 miles NNW of Ras Muhammad, is 58m high, black, rounded, and fairly conspicuous. There is a flat sand-colored hill of nearly the same height SE. From a distance these hills appear as islands.

Ras Muhammad should be approached with care at night; the white cliffs and the land are not easily distinguished. It is steep-to, with no off-lying dangers on its E and S sides. A stranded wreck lies on a reef close S of Ras Muhammad. Ras Muhammad is reported to give a good radar return. The point is marked by a light and a racon.

The Gulf of Aqaba

6.3 The shores of the **Gulf of Aqaba** (27°59'N., 34°27'E.) are closely bounded by mountainous ridges, which in many places rise from the plain like a wall.

Winds—Weather.—During the greater part of the year NNE winds prevail and sometimes blow with considerable force. In April and May, they are generally more moderate, with an occasional change to S winds. In the winter months, S winds sometimes come up suddenly and may blow for a day.

At the end of August, N winds, light to moderate in force, have been experienced.

The coast between Ras Muhammad and Ras Nasrani, about 16 miles NE, is high and fringed by a narrow white reef.

This reef, which extends about 31 miles inside the Gulf of Aqaba, is usually covered and is marked on its outer edge by surf.

The water outside the reef is of a dark blue color because of its great depth. This reef is dangerous to approach, even by small boats.

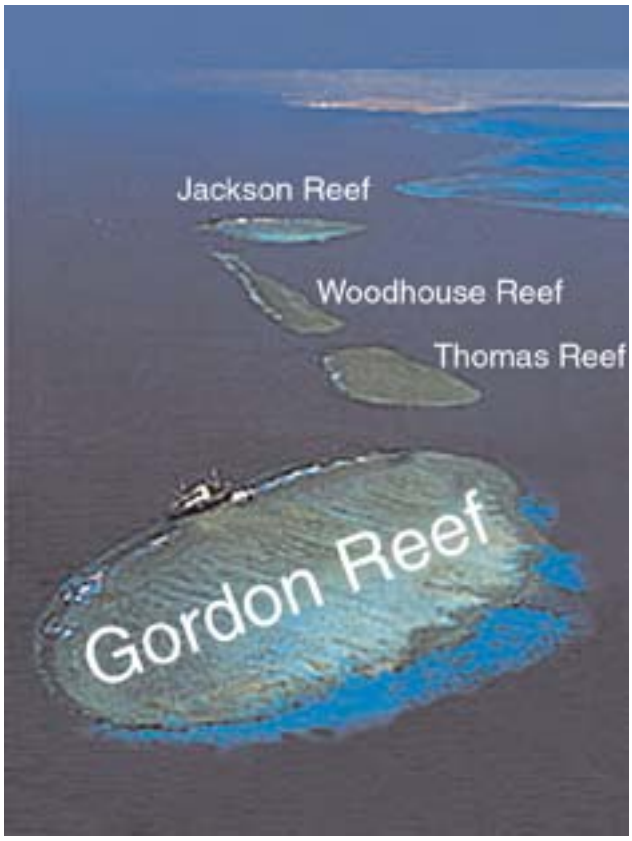
6.4 **Sharm el Sheikh** (Sharm Ash Shaykh) (Sharm al Shaikh) (27°51'N., 34°17'E.) (World Port Index No. 47988) and Sharm el Moiya are separated from each other by a rocky tongue of land, on which a large white hospital is located, about 7 miles NNE of Ras Muhammad. Sharm el Sheikh, the W bay, is free from dangers.

A small concrete jetty is located on the SE shore of Sharm el Sheikh; boat landings are situated along the NE face of this facility. Three small craft mooring buoys are located near the head of the bay. This port is mainly used by yachts and passenger vessels.

Berthing is available during daylight hours only. The largest vessel handled was 30,000 dwt, with a length of 250m and a draft of 9m. Suez Odense Marine operates a floating dock, with a length of 144m and a width of 22m.

Depths of 100m are found for about 0.4 mile inside the entrance, but from then on the depths shoal rapidly.

Sharm el-Sheikh contains a new passenger quay. The quay is 482m long, and can accommodate vessels with a draft of between 4.5 and 9m. There are smaller wharves, with a total length of 36m, for vessels with drafts of less than 4.5m.



The Strait of Tiran from S

Pilotage is compulsory. The pilot monitors VHF channel 16. The pilot boards about 0.9 mile SSE of the E entrance point to Sharm el-Sheikh.

The port can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 20-69-3660209
3. Facsimile: 20-69-3660557
4. E-mail: redseaut@idscl.gov.eg

Anchorage can be taken, in about 25m, sand, in a position about 0.1 mile off the NE shore of Sharm el Sheikh. Caution is necessary when anchoring, as the bank drops abruptly into deep water.

Sharm el Moiya, the E bay, is about 0.2 mile wide in its entrance, but it is so obstructed by coral patches that a vessel drawing more than 3m can only make its way through them with great difficulty. A light is shown from **Ras Umm Sid** (27°51'N., 34°19'E.), just E of Sharm el Moiya.

6.5 The **Strait of Tiran** (28°00'N., 34°27'E.) is obstructed by a chain of reefs. These reefs, with several large drying boulders on them, are awash at LW during the summer.

An IMO-approved Traffic Separation Scheme, best seen on the chart, exists in the Strait of Tiran. Northbound traffic passes E of Gordon Reef and the reefs extending to the NE of Gordon Reef; southbound traffic passes W of these reefs.

A Vessel Traffic Service Station (call sign: VTS Gulf of Aqaba), which can be contacted on VHF channels 8, 9, 10, and 16, has been established to provide the following services:

1. Ensure safety of navigation within the Traffic Separation Scheme of the Gulf of Aqaba.
2. Monitor passing vessels outside the traffic lane 15 miles N and S of the station.
3. Provide navigation assistance and advice to the passing vessels, if required.

A radar station (call sign: Salam), which can be contacted on VHF channels 13 and 16, has been established at Nabq (28°04.2'N., 34°25.3'E.). Vessels approaching the station can obtain local navigation information, on VHF channels 13 and 16, when in the following positions:

1. About 1.3 miles S of Ras Nasrani.
2. About 1.2 miles NW of the light on Jackson Reef.

Gordon Reef (27°59'N., 34°27'E.) is the SW reef of the group. Thomas Reef, Woodhouse Reef, and Jackson Reef lie within 1.5 miles NE of Gordon Reef, and are separated by deep channels, 0.1 to 0.15 mile wide. These channels, however, should not be used, as a dangerous current often sets across them.

Caution.—Stranded wrecks are located on the N and S portions of Jackson Reef. These wrecks should not be mistaken for vessels underway.

6.6 **Jazirat Tiran** (27°56'N., 34°33'E.) is described beginning in paragraph 6.14.

Enterprise Passage (27°59'N., 34°27'E.), the channel to the W, lies between Gordon Reef and the coastal reef NE of Ras Nasrani. This passage presents no difficulty as it is deep and clear, and the reefs on either side are steep-to.

Vessels should enter and leave Enterprise Passage during daylight only, except when there is ample moonlight. Tidal currents in the S approach to the Gulf of Aqaba are uncertain and sometimes attain a considerable velocity. Caution is necessary when approaching at night.

If navigating Enterprise Passage at night, it has been reported that visual bearings of the lights marking the passage are preferable to radar ranges of the nearby coast. The light structures in Enterprise Passage are difficult to distinguish during the day.

A N set of 3.5 knots was experienced many years ago, in Enterprise Passage about 1 hour after HW at Jazirat Tiran, with a 4 to 6 force S wind. A S set of 1 knot was experienced many years ago, in the passage about 2 hours 30 minutes after HW at Jazirat Tiran, with a NNE wind of force 5.

The wind in Enterprise Passage and Grafton Passage is very strong and the swell heavy at times, causing considerable tide rips. Gales, which spring up suddenly, are reported to occur frequently at night.

A local magnetic anomaly lies along the E shore of the gulf.

It has been reported (2013) small dive vessels may be encountered operating on the reefs.

6.7 **Al Gharqanah** (28°07'N., 34°27'E.), a promontory about 2.5 miles NE of Nabq, may lie up to about 1 mile W of its charted position.

The W side of the Gulf of Aqaba between Nabq and Khalij al Qarah, about 24 miles N, is fringed by a narrow white reef.

Khalij al Qarah (28°28'N., 34°30'E.) lies on the S side of a low and sandy promontory, from which a low, sandy, barren spit extends about 1 mile S and then 1 mile W.

A drying reef extends about 0.4 mile SSW from the SE extremity of this spit. The bay, entered between the W extremity of this spit and the coast about 0.7 mile W, has general depths of 7.3 to 24m.

A 4.9m coral patch lies about 0.2 mile W of the extremity of the spit. Shoals extend about 91m W and NW, respectively, from the extremity of the spit.

To the N of this spit is an inlet, which dries a short distance inland. A shoal, with a depth of 4.9m, lies about 0.2 mile W of the sand spit. A light, with a racon, is shown from the coast about 1 mile N of the S point of the sand spit.

A cairn stands on the extremity of the sand spit and a single palm, reported to be conspicuous, stands on the coast N of the spit.

Anchorage.—Anchorage can be taken in Khalij al Qarah, in 29m, sand and coral, with the W extremity of the sand spit bearing 030°, distant 0.3 mile. This anchorage is sheltered from N and E.

6.8 **Ras Abu Qalum** (28°38'N., 34°34'E.) is a sandy promontory, fringed by reefs on its N side.

El Habiq (28°52'N., 34°39'E.), about 14.5 miles N of Ras Abu Qalum, is a low sandy point, with some stunted trees. A flat plain of sand and stones rises gradually within this point to the base of the mountains.

6.9 **Nuweiba el Muzeima** (28°58'N., 34°39'E.) (World Port Index No. 47960) lies about 6.2 miles N of El Habiq. There is a quay for general cargo and ro-ro vessels. Berth limitations are, as follows:

1. Berth No. 1—The berth is 92m long and is used by passenger ferries with a maximum draft of 8m.
2. Berth No. 2—The berth is 42m long and is used by passenger ferries with a maximum draft of 8m.
3. Berth No. 3—The berth is 120m long, with an alongside depth of 8m. The berth is used by general cargo vessels up to 3,980 dwt, with a maximum draft of 7.3m.

Pilotage is compulsory and is available 24 hours. The port is private and requires permission from the Maritime Transport in Alexandria before entering.

The port authority can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 20-69-520364
3. Facsimile: 20-69-520368
4. E-mail: redseaut@idscl.gov.eg

6.10 **El Qarnus** (28°59'N., 34°41'E.), close NE of Nuweiba el Muzeina, is covered with low bushes and sand hills. A fort stands about 3 miles N of El Qarnus, but the anchorage is open to the prevailing winds.

Ras Suwayhil as Saghir (28°53'N., 34°49'E.), on the E side of the gulf, is a sandy point fringed by rocks. Temporary an-

chorage can be taken, in 11m, S of Bir Marshah, close SE of the point, sheltered from N winds.

Humaydah (29°13'N., 34°54'E.), a 17m high islet, lies in the middle of the entrance of a small bay, about 21 miles NNE of Ras Suwayhil as Saghir. The N part of this bay is foul; the N end of the island is connected to the coast by a reef, partly above water.

The island is difficult to distinguish and should not be confused with a table-topped point about 3 miles farther N. The island has been reported to be gray in color and to contrast with the pink cliffs in the background.

Al Humaydah, a village, is located in the SE part of the bay. Some prominent tanks and a radio mast stand about 6 miles N of Humaydah.

Anchorage.—Good anchorage, sheltered from all winds, can be taken between Humaydah and the coast to the SE. Vessels of moderate size can take anchorage, in 55m, sand and coral, with the summit of the island bearing 322° and the S entrance point of the bay bearing 225°.

6.11 Geziret Firon (29°28'N., 34°52'E.), lying about 0.1 mile offshore, is fringed by a reef. There are several towers and ruins on the island.

Anchorage.—Anchorage can be taken off the extremities of the island according to the wind. With strong S winds, neither is recommended as, except for small vessels, there is little shelter.

Good anchorage, for vessels of moderate size, in 37m, coral, lies with the N end of the island bearing 197°, distant 0.1 mile, or, in 33m, sand, with the S end of the island bearing 008°, distant 0.1 mile.

Large vessels may anchor, in 35m, coral, with the N end of the island bearing 213°, distant 0.3 mile.

The shore at the head of the Gulf of Aqaba is very low, being the end of Wadi al Arabah, which is sandy with high mountains on either side.

Caution.—The Egypt/Israel boundary reaches the coast in the vicinity of Ras el Masri (29°29'N., 34°54'E.). A buoy, with a board inscribed "Caution Frontier Ahead," is moored about 0.15 mile off the coast.

Elat (Eilat) (Elath) (29°33'N., 34°57'E.)

World Port Index No. 48076

6.12 Elat, in Israel, is an open roadstead on the NW side of the head of the Gulf of Aqaba. Depths in the approach to Elat are deep and clear, and the only limitation in the size of vessels in the harbor is the depth alongside the wharf.

Israel Port Authority Home Page
http://www.israports.org.il

Winds—Weather.—See Al Aqabah, in paragraph 6.13, for further information.

Tides—Currents.—The mean tidal rise for the port is 0.6m, while spring tides rise 0.8m.

Depths—Limitations.—Naval Base Quay, formerly known as North Quay, is an Israeli naval base and ship repair facility.

The port of Elat, formerly known as South Quay, consists of three berths, with a total berthing length of 528m and an alongside depth of 13m. General cargo and container vessels with drafts of 11.6 to 12.1m can be accommodated.

An additional cargo jetty just N of the port of Elat is 200m long and can accommodate vessels up to 6m draft.

Katza Oil Terminal consists of North Oil Jetty and South Oil Jetty. North Oil Jetty, which has a T-head, can accommodate vessels of 30,000 to 100,000 dwt, with lengths of 85 to 250m and a maximum draft of 15.0m. South Oil Jetty can accommodate vessels of 30,000 to 450,000 dwt, with lengths of 170 to 450m and a maximum draft of 27.0m.

Katza Oil Terminal Home Page
http://www.eapc.co.il/port-info.html

Aspect.—The port, which is an open roadstead, lies along the W and N shores of the Gulf of Aqaba. The major facilities devoted to ocean-going vessels are located along the port's W shore.

A conspicuous hotel stands in approximate position 29°33'N, 34°58'E. Two chimneys, painted red and white in bands, stand about 1 mile SW of the hotel; a group of radio masts, 20m high and fitted with aeronautical warning lights, stands about 1 mile N of the same hotel.

A conspicuous silo stands at the S end of South Quay, with several oil tanks standing close SW of it.

A second hotel is located about 3 miles SW of the hotel mentioned above.

Pilotage.—Pilotage is compulsory, and may be ordered through the vessel's agent, or the harbormaster if the vessel is unable to make contact. The pilot boards at the following locations:

1. For tank vessels bound for Katza Oil Terminal—about 0.8 mile E of Eilat Port Light.
2. For cargo vessels bound for Elat—about 0.75 mile SE of North Oil Jetty.

The pilots can be contacted by telephone at 972-8-6358377 or 972-8-6372180.

Regulations.—Vessels must report 24 hours in advance and vessels bound for anchorage must contact Port Control to obtain an anchoring position. All vessels shall contact the Israeli Navy on VHF channel 16 when 25 miles from the coast.

Vessels using the oil terminal should send their ETA 72 hours, 48 hours, and 24 hours prior to arrival; any changes to the ETA greater than 6 hours should be sent immediately. When within VHF range, but no less than 1 hour before arrival, the terminal (call sign: Delek) should be contacted on VHF channel 13.

Special regulations are in force for vessels carrying dangerous cargo. Loaded tankers, empty tankers not gas-free, or vessels carrying dangerous cargo are permitted to enter the harbor to proceed to the berth only. Fire warps, consisting of wire pendants with an eye, are to be rigged over the bow and stern while working dangerous cargo.

It has been reported (2007) that the oil terminal will not accept vessels carrying heavy crude oil with a density above 0.900 unless the vessel has double-hull construction.

See Pub. 160, Sailing Directions (Planning Guide) South At-

lantic Ocean and Indian Ocean for details pertaining to vessels in Israeli waters.

Contact Information.—Port Control (call sign: Yamit Elat) can be contacted on VHF channels 12, 14, and 16.

The Port Manager can be contacted by telephone (972-8-6358334).

The harbormaster can be contacted, as follows:

1. Telephone: 972-8-6358341
   972-57-6576100 (mobile)
2. Facsimile: 972-8-6358320

Anchorage.—Seven numbered anchorage berths, with depths of 29 to 130m, exist off the port's N shore and may best be seen on the chart. The berths are assigned by port control.

The anchorages are exposed to S winds. Care must be taken to ensure sufficient swinging room.

Directions.—The approaches to the port are free and clear of charted dangers. A set of range lights, in alignment bearing 011°58', leads to South Oil Jetty.

Caution.—A restricted area, which may best be seen on the chart, surrounds the South Oil Jetty of Katza Oil Terminal. Vessels may not enter this restricted area without permission.

The Israel/Jordan boundary reaches the coast in the vicinity of position 29°32'33.13"N, 34°58'41.43"E. The boundary then continues in a SSW direction through the waters at the head of the Gulf of Aqaba. Buoys, with boards inscribed "Caution Frontier Ahead," are moored on the W side of the boundary between the coast and the 50m contour.

A 100m-wide Security Zone, best seen on the chart, coinciding with the Israel/Jordan and Israel/Egypt maritime territorial boundary, has been established on the Israeli side of the Israel/Jordan border.

Vessels must request permission from the Israeli navy to enter this area. Vessels are required to approach the port only by transiting through the Security Zone.

Al Aqabah (29°31'N., 35°00'E.)

World Port Index No. 48090

6.13 Al Aqabah, in Jordan, is an open roadstead on the NE side of the head of the Gulf of Aqaba. Depths in the approach to the harbor are deep and clear. In the S part of the harbor, there are depths of 5.5 to 18.3m within 137m of the shore. Similar depths are located within about 0.2 mile of the shore in the N part of the harbor.

Aqaba Ports Corporation

http://www.aqabaports.com.jo

Aqaba Container Terminal

http://www.act.com.jo

Winds—Weather.—Al Aqabah is located at the base of a geographical trench which divides Jordan; winds can funnel into this area rapidly and create hazardous conditions for vessels at anchor. However, under normal conditions, the gulf is protected by its high sides and is usually calm.

Sudden squalls, up to force 6, from between NNE and NNW occur at night, usually commencing about 2 hours after sunset.

During the winter, strong S winds blow up the gulf, sometimes attaining great force and raising a heavy sea. Under such conditions, vessels should leave the anchorage until the weather moderates. It may also be necessary for vessels to leave their berths. These winds can rise within 2 hours, but warning is usually given by a sharp fall in the barometer.

As a result of such conditions, vessels may not immobilize their main engines without prior consultation with the harbormaster.

Al Aqabah—Port Facilities

Berth	Length	Depth alongside	Maximum Vessel			Remarks
			Size	Length	Draft	
Main Port						
Berth No. 1	160m	11.3-15.1m	20,000 dwt	200m	10.8m	General cargo and grain. Outer face of wharf. Reported to accommodate vessels up to 70,000 dwt.
Berth No. 2	180m		20,000 dwt	220m	10.0m	General cargo. Outer face of wharf
Berth No. 3	180m		40,000 dwt	220m	13.0m	General cargo. Outer face of wharf
Berth No. 4	180m		40,000 dwt	220m	11.5m	General cargo. Outer face of wharf
Berth No. 5	180m		40,000 dwt	220m	11.5m	General cargo. Outer face of wharf
Berth No. 6	180m		40,000 dwt	220m	11.5m	General cargo. Outer face of wharf
Berth No. 7	150m	5.4m-6.7m	8,000 dwt	170m	8.0m	General cargo. North face of wharf
Berth No. 8	150m		3,000 dwt	110m	5.8m	General cargo. Inner face of wharf.
Berth No. 9	150m		3,000 dwt	110m	5.4m	General cargo. Inner face of wharf.
Berth No. 10	60m	1.5m-3.5m	400 dwt	60m	5.8m	General cargo. Inner face of wharf.

Al Aqabah—Port Facilities						
Berth	Length	Depth alongside	Maximum Vessel			Remarks
			Size	Length	Draft	
Phosphate Berth A	210m	12.3m-14.8m	20,000 dwt	200m	11.0m	Dolphin-type berth. Bulk phosphates. Petroleum products handled during daylight hours only.
Phosphate Berth B	180m	12.5m-15.2m	100,000 dwt	220m	14.4m	Bulk phosphates. Berthing dolphins located 60m N and S of each end of the berth.
Container Port						
Mo'ta Floating Berth						
North Berth	150m	—	10,000 dwt	150m	9.0m	Rice, bagged cement, and bulk cargo. Ro-ro vessels can also be accommodated.
West Berth	200m	—	40,000 dwt	200m	15.0m	
South Berth	150m	—	10,000 dwt	150m	10.0m	
Moshterak Berth	—	11.0m	120,000 dwt	250m	11.0m	Consists of two dolphins 120m apart. Bulk cement exports. Can also be used for oil exports.
Container Terminal						
Berth No. 1 Berth No. 2	540m	14.0m	55,000 dwt	230m	14.0m	Containers. Can be used for general cargo, livestock, and passenger vessels. It has been reported (2013) an additional 460m of berthing space is now operational, increasing the berthing length at the terminal to 1,000m.
Ro-ro Berth	40m	10.0m	25,000 dwt	180m	10.0m	Located at the N end of the Container Terminal.
Yarmout Floating Berth						
North Berth	—	—	10,000 dwt	120m	7.5m	Ro-ro facility.
West Berth	150m	—	—	150m	10.0m	Passenger and container vessels. Maximum vessel length of 170m if ro-ro berths are not occupied.
South Berth	—	—	10,000 dwt	120m	6.0m	Ro-ro facility.
Industrial Port						
Aqaba Oil Terminal	—	—	400,000 dwt	370m	25.0m	Consists of four dolphins situated at the W end of a 150m-long approach arm. See Regulations section for information on reporting and berthing requirements.
Timber Berth	80m	6.8m	8,000 dwt	120m	6.8m	
Jordan Fertilizer Industry (JFI) Jetty						
Outer Berth (West Berth)	220m	15.0m	50,000 dwt	230m	15.0m	A maximum height of 23m above the waterline can be accommodated. See Regulations section for information on reporting requirements.

Al Aqabah—Port Facilities						
Berth	Length	Depth alongside	Maximum Vessel			Remarks
			Size	Length	Draft	
Inner Berth (East Berth)	190m	—	30,000 dwt	190m	11.0m	A maximum height of 23m above the waterline can be accommodated. See Regulations section for information on reporting requirements.

Al Aqabah—Control Tower from SW

Depths—Limitations.—The berthing facilities at Al Aqabah handle a variety of cargo types and stretch from the head of the gulf to the Jordan-Saudi Arabia border. From N to S, the facilities are divided into the main port, the container port, and the industrial port. The main port offers 12 berths to vessels handling general, grain, or bulk solid commodities. The container port consists of two floating berths, a dolphin berth, and a container facility. The industrial port consists of an oil facility, a timber facility, and a fertilizer facility. Information on all these facilities is contained in the accompanying table titled **Al Aqabah—Port Facilities**.

The **Royal Jordanian Naval Base** (29°23.7'N., 34°57.9'E.) is located about 0.8 mile N of Aqaba Oil Terminal. The Inner Basin has depths of 5 to 8m at its outer end. The deep-water berth is located on the seaward side of the breakwater. It is 200m long, with a depth alongside of 20m; dolphins at either end of the pier extend the berthing length to a total of 406m. Depths increase rapidly offshore. Pilotage is compulsory and should be requested 2 hours prior to arrival from Aqaba Port Control on VHF channels 12 and 16; it has also been reported (2012) the pilot should be confirmed 6 hours, 2 hours, and 1 hour in advance. The pilot boards 1 to 2 miles W to SSW of the pier. Vessels are not allowed to use this facility without prior permission. It has been reported (2008) that strong N winds can cause a significant set when approaching the pier.

It has been reported (2009) a new passenger terminal, to be constructed S of the JFI Jetty, is scheduled to be completed in 2013.

In addition to the new passenger terminal, it has been reported (2009) that a new 240m-long cargo pier, along with other timber and industrial berths, will be constructed in the vicinity of the JFI Jetty. The plans call for all general cargo operations to be shifted from Al Aqabah to this location by 2013.

Aspect.—A fort and a minaret close NE of the town are conspicuous from seaward over the palm trees that front the town; the customhouse on the coast W of the town is largely obscured by trees.

A conspicuous minaret stands close N of the customhouse, although it has been reported (1994) that new construction in the city obscures the minaret.

A large flagpole, height unknown, from which a large Jordanian flag is flown 24 hours, stands on the shore N of the Control Tower.

A large conspicuous white building stands in the middle of the town, about 0.2 mile NE of the customhouse.

The loading elevator on the phosphate pier is conspicuous.

Al Aqabah—Control Tower from NW

A power station stands 1 mile S of Phosphate Berth B; two water intake structures stand offshore, about 100m WNW of the power station.

Conspicuous silos and two conspicuous domes are located close E of Mo'ta Floating Berth.

Pilotage.—Pilotage is compulsory for all vessels bound for Al Aqabah for berthing and unberthing or for entering the Near Anchorage and the Far Anchorage. Vessels may leave from the anchorages without a pilot.

Vessels should send their ETA 12 hours in advance. The pilots can be contacted on VHF channels 8 and 9 and board, as follows:

1. For Al Aqabah, the Phosphate Berths, and the anchorages—about 1.2 miles WSW of the Phosphate Berths.
2. For the Container Berth—about 0.6 mile SW of the berth.
3. For Moshtarkek Berth and Mo'ta Floating Berth—about 0.7 mile SW of the berth.
4. For Yarmout Floating Berth—about 1 mile SW of the berth.
5. For the Jordan Fertilizer Industry (JFI) Jetty and the Aqaba Oil Terminal—about 1 mile SW of the JFI Jetty.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details on regulations pertaining to vessels in Jordanian waters.

Vessels arriving after 2000 are not permitted to enter Jordanian waters.

Explosives are discharged at the anchorage during daylight hours only.

Ships which were built 15 years or more ago, with certain exceptions, are banned from the port of Aqabah due to lack of operational facilities.

Due to sudden changes in weather, vessels should obtain permission from the harbormaster prior to immobilizing engines.

Vessels carrying dangerous cargo or radioactive materials should inform Aqaba Port Control and Aqaba VTS of all details to enable the port to take all necessary precautions and safety measures during unloading.

Inbound vessels are requested to send the following information to Aqaba Port Control by facsimile (962-3-2016110) at least 12 hours prior to arrival:

1. Vessel name and call sign.
2. Flag and home port.
3. Length overall.
4. Maximum draft fore and aft.
5. Summer dwt/gross tons/nrt.
6. Last port of call/next port of call.
7. ETA (date and time).
8. Propulsion (single screw/twin screw).
9. Type of ramp/length/width.
10. Cargo (type and tonnage).
11. Liner or charterer.
12. Agent's/owner's name.
13. Year built.
14. Dangerous cargo and radioactive materials.
15. Displacement.

Vessels arriving from seaward should, in addition to their signal letters, hoist the flags prescribed by the International Code of Signals.

Vessels should contact Aqabah Port Control on VHF channel

Al Aqabah—Phosphate Terminal

Al Aqabah—Power Station

Al Aqabah—Moshterak Berth

Al Aqabah—Domes close E of Mo'ta Floating Berth

Al Aqabah—Silos close E of Mo'ta Floating Berth

Al Aqabah—Royal Jordanian Naval Base from SW

Al Aqabah—Jordanian Fertilizer Industry Timber Berth (circled)

Al Aqabah—Jordanian Fertilizer Industry Jetty

Jordan/Saudi Arabia border

16 and transfer to VHF channel 77 to exchange information. Vessels should then call Aqaba VTS at least 2 hours prior to arrival at the pilot boarding position for berthing instructions.

Tankers intending to use the Aqaba Oil Terminal must inform the Port Authorities by cable or letter at least 15 days prior to arrival. Their ETA should be confirmed 5 days before arrival and every day thereafter. Tankers can only berth and unberth during daylight hours and tugs must be used. Vessels should arrive fully inerted.

Vessels intending to berth at the Jordan Fertilizer Industry (JFI) Jetty should send their ETA 7 days prior to arrival, repeating it 96 hours, 72 hours, 48 hours, and 24 hours prior to arrival.

Tankers may not berth alongside Phosphate Berth A if the following signals are shown from the top of the loading elevator on this pier:

1. By day—a red flashing light
2. By night—two red fixed lights, horizontally disposed.

Outbound vessels should contact Aqaba Port Control with their ETD and pilot request 2 hours before departure on VHF channel 12.

Vessel Traffic Service.—The Aqaba Vessel Traffic Service area extends from the Jordan/Saudi Arabia border to the Jordan/Israel border. The area includes all Jordanian harbor facilities and their adjacent sea areas.

All vessels arriving at, staying in, or departing from the port of Aqaba are requested to participate in the VTS.

Vessels are to contact Aqaba Port Control 6 hours and 1 hour prior to arrival. The vessel will then be transferred to Aqaba VTS (call sign: Aqaba VTS). Departing vessels should contact Aqaba Port Control 2 hours prior to departure.

All communications with the VTS will be in English.

The VTS is operated by the Aqaba Port Marine Services Company and can be contacted, as follows:

1. Call sign: Aqaba VTS
2. VHF: VHF channels 8, 9, 12, and 16
3. Telephone: 962-3-2019625
   962-3-2014031 (ext. 305)
   962-74-5656294 (mobile)

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Aqaba Port Control
2. VHF: VHF channels 16 and 77
3. Telephone: 962-3-2015549
4. Facsimile: 962-3-2016110

The Aqaba Container Terminal can be contacted, as follows:

1. Telephone: 962-3-2039999
2. Facsimile: 962-3-2039133
3. E-mail: customerservice@act.com.jo

Aqaba Port Marine Services Company can be contacted, as follows:

1. Telephone: 962-3-2034030
2. Facsimile: 962-3-2034031
3. E-mail: info@apms.jo
4. Web site: http://www.apms.jo

Anchorage.—Seven anchorage berths, best seen on the chart, offer depths of 27 to 55m, sand and coral, good holding ground.

An area off the port, inside the 100m curve and consisting of Anchor Berth 1 to Anchor Berth 4, is known as the Near Anchorage and is utilized by vessels working cargo.

The area seaward of the 100m curve and consisting of An-

Al Aqabah—Flagpole

chor Berth 5 and Anchor Berth 6, is known as the Far Anchorage and is utilized by vessels awaiting a berth.

Anchor Berth 8 is used only by small vessels.

A prohibited anchorage area, enclosing an area where Anchor Berth 7 was formerly located, lies NW of Anchor Berth 6.

Reports have also indicated that anchorage is prohibited within 1 mile of Anchor Berth 1.

Caution.—There are numerous magnetic anomalies in the northern Gulf of Aqaba. It has been reported (2003) that there is an additional 14° E variation near the main wharf in the vicinity of position 29°30'N, 34°35'E.

Information on the Israel/Jordan border can be found in paragraph 6.12.

Due to the steep bathymetric of the Gulf of Aqaba, it has been reported (2014) many vessels awaiting entry to port facilities at Aqaba do not anchor but drift and display the "not under command" day shapes and lights.

Jazirat Tiran to Yanbu/King Fahd Port

6.14 Jazirat Tiran (27°56'N., 34°33'E.), rising to a height of 524m close within its SW point, has a sloping sandy beach along its E side for a distance of about 2.5 miles NW from **Champlain Point** (27°55'N., 34°37'E.). The remainder of the island is a low sandy plain, with some hills in places.

Several well defined coral rocks lie close offshore on the coastal reef within 0.8 mile farther N. A coral reef, with a least depth of 0.3m, lies about 1 mile E of Champlain Point, and several detached shoals, with depths of 2.7 to 8.8m, lie within 2 miles of this point.

The NW coast of Jazirat Tiran between Chisholm Point, about 2 miles WNW of the above 524m peak, and Johnson Point, the NW extremity of the island, is fringed by reefs and backed by low, undercut, coral cliffs.

Two conspicuous hills, 94m and 47m high, lie about 0.5 mile apart, about midway between these two points.

Johnson Point, consisting of sand and dead coral, is low and flat. Two small sandy beaches S of Johnson Point are conspicuous when seen from S and generally afford good landing.

Anchorage.—Anchorage can be taken about 0.3 mile offshore, in 22m, sand and coral, good holding ground, with a conspicuous hump, about 1 mile WSW of Champlain Point, bearing 342°, and the S edge of Jazirat Tiran bearing 268°.

Anchorage can be taken off the E side of Jazirat Tiran. Care should be taken to avoid the reefs and rocks between Jazirat Tiran and Jazirat Sanafir.

Approaching through the channel between Champlain Point and the coral reef E is not recommended during N winds.

In August many years ago, a vessel anchoring off Champlain Point experienced a N gale, which came up suddenly at night. These gales are reported to occur frequently during the night in this locality.

It was reported in December, many years ago, that the tidal currents in the passage E of Jazirat Tiran set N during the rising tide and S during the falling tide.

6.15 Jazirat Sanafir (27°56'N., 34°43'E.) lies about 2 miles E of Jazirat Tiran. Numerous broken peaked limestone hills rise on the E part of the island, with the highest being near the SE extremity of the island.

Jazirat Abu Shushah (27°56'N., 34°54'E.) is low at its N end, but gradually rises at its S end to a bluff, 97m high. It appears wedge-shaped on E or W bearings.

Jazirat Burqan (27°53'N., 35°04'E.), 36m high, lies about 7 miles E of Jazirat Abu Shushah and is divided into two parts connected by a low sandy isthmus. When seen from a distance, the island appears as two wedge-shaped islands; closer in it appears broken and rugged, with large masses detached from the hills lying at their bases. A good lookout is necessary as there are many uncharted coral reefs, awash, in this locality.

Jazirat Yuba (27°46'N., 35°07'E.) is about 112m high. The island is precipitous and cliffy at its N end, gradually sloping to its SE end. Three rocky islets lie on the reef bordering the SW side of the island. Shib Pelham, which dries, lies about 2 miles NNW of Jazirat Yuba.

Jazirat Walih and Jazirat Julajilah are both low and lie about 1.5 miles E of the N end of Jazirat Yuba and 2.5 miles E of the S end of Jazirat Yuba, respectively. The latter islet stands on a reef, with sunken rocks, which extends about 2 miles W and S from its NW and SE ends, respectively.

6.16 Sharmah (Ash Sharmah) (27°56'N., 35°15'E.)

(World Port Index No. 48104), a small subsidiary port of Yanbu, is reached by a buoyed channel leading from a point off the N end of Yuba, NE to the pilot boarding station. Range lights, in alignment bearing 036°, lead from the pilot boarding ground to the port area. A grounded barge, with a length of 130m, offers a berth which will accommodate drafts of 7.8m alongside.

It was reported that several other berths were under construction here.

Pilotage.—Pilotage is compulsory but is available during daylight hours only. The pilot boards about 4 miles SSW of the port, in the vicinity of Lighted Buoy No. 6, just W of the range line. The pilot may be contacted on VHF channel 11 or 16.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for regulations pertaining to vessels in Saudi Arabian waters.

Caution.—The fairway entrance N of Yuba is about 2 miles wide; it shows depths of 96 to 239m but leads between isolated shoal patches with depths of 9m. The areas outside of the buoyed channel are unsurveyed.

Take care when steering on the entrance range, as shoal water lies close NW, and in the vicinity of the pilot station. The least charted depth on the range line is 70m.

Jazair Sila is a low group of coral reefs and islets extending from 6 to 12 miles SE of Jazirat Yuba.

6.17 Al Muwaylih (27°40'N., 35°29'E.) is a village consisting of a few huts and some stone houses. On the S side of the village is a conspicuous fort with a minaret.

A spit, on which stand some palm trees, extends WSW from the fort, and continues under water for some distance. This spit can be seen under favorable light conditions.

Temporary anchorage can be taken off Al Muwaylih on a coral bank, about 0.5 mile in extent, with the minaret in the fort bearing 111°, distant 3.5 miles.

Sharm al Harr (Sharm Yahar) (27°37'N., 35°31'E.), narrow and fringed by reefs, lies about 4 miles SSE of Al Muwaylih. It is difficult to identify because of the low coast in the vicinity.

Sharm Jubbah (27°33'N., 35°33'E.), another narrow inlet fringed by reefs, provides good and secure anchorage, in 9.1 to 12.8m. The entrance of this inlet is fringed by reefs, making it tortuous.

6.18 Duba (Dhiba) (27°34'N., 35°32'E.) (World Port Index No. 48106) is situated in a natural harbor and is approached through a 100m wide entrance channel marked by lighted beacons. The channel is 1,482m long and 95m wide, with a dredged depth (2014) of 16m; a turning circle, with a dredged depth (2014) of 15m, lies off the berths. The maximum draft allowed is 9.5m.

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The quay, which consists of three berths, has a total length of 600m and has a ro-ro facility at its S end, with a 30m ramp. There are 3 additional berths with details as shown in the following table:

Berth	Length	Max. draft	Remarks
1	200m	10m	Livestock
2	200m	10m	General cargo
3	200m	10m	Ro-ro

Pilotage is compulsory for all vessels and can be contacted on VHF channels 11, 13, and 16; the pilot boards in position 27°34.3'N, 35°29.6'E.

Mooring and unmooring is performed during daylight hours only. Vessels should send their ETA 5 days, 48 hours, and 24 hours before arrival.

The Port Authority can be contacted, as follows:

1. Telephone: 966-14-4321060
2. Facsimile: 966-14-4322679
3. Telex: 495-672019 PORT SJ

The recommended anchorage is SE of Sila Shoal Lighted Buoy.

Caution.—High speed craft operate out of the port.

6.19 Duba Bulk Plant Tanker Terminal (27°19'N., 35°54'E.) (World Port Index No. 48108) is a 40m-long platform connected by a trestle to a causeway which leads about 0.5 mile NNW to a bulk tank farm situated 3 miles SE of the village of Duba. Vessels up to 50,000 dwt, with a maximum length of 200m and a maximum draft of 13.5m, can be accommodated. A second berthing platform, used by service vessels, is located close E of the tanker platform. Vessels calling at this facility are loaded coastal tankers discharging diesel oil, gasoline, or kerosene.

Vessels are berthed and unberthed 24 hours. Pilotage is compulsory; pilots board SSW of the berth in position 27°17'N, 35°43'E and remain on board throughout cargo operations.

No direct communications or pre-arrival messages are exchanged. All communications between the vessel and the terminal is via the vessel's charterer/owner/agent when the vessel departs its loading port. Vessels can obtain anchorage, in 16.2m, about 5 miles NW of An Numan.

Sharm Dahba and Sharm Qafafa lie about 22 and 24 miles, respectively, SSE of Al Muwaylih. The former is entirely filled in and the latter has not been sounded. A conspicuous white house stands on the N side of Sharm Qafafa.

Dhaba, a village consisting of a few houses and a fort, stands near the coast, about 1 mile SE of Sharm Qafafa.

6.20 An Numan (27°06'N., 35°45'E.) is low and sandy at its N end, gradually rising to red limestone cliffs and hills, about 120m high, at its S end. These hills, fringed by a few bushes, have a rugged appearance.

Sharm an Numan, on the E side of An Numan, provides good anchorage, in 8.5 to 14.6m, coral. This anchorage is sheltered, as its sides rise almost vertically to about 30m.

The coast between An Numan and Sharm Habban, about 75 miles SSE, is fronted by steep overhanging cliffs of coral and sandstone. A level ledge of rocks extends about 37m from the base of these cliffs and rises like a wall from a considerable depth.

The outer part of this ledge is nearly dry. The sea, at times, breaks with violence and produces a surf against this ledge, which makes landing between the inlets difficult.

On the off-lying banks along this coast are several low sandy islets and large patches of coral reefs, with deep water between them, lying as far as 8 miles offshore. These reefs should not be approached, however, without local knowledge.

Between Sharm Habban and Ras Karkuma, about 12 miles S, the coast is low and sandy, with low coral cliffs in places.

Sharm Jazzah (26°57'N., 35°57'E.) is small and does not provide good anchorage. The country in the vicinity is barren, with a stratum of black stone on the surface of the hills giving it a bleak and desolate appearance.

Marsa Zubaydah (26°52'N., 36°01'E.), about 5 miles SE of Sharm Jazzah, lies on the E side of an islet on a reef extending from the shore; this bay, with depths of 18.3 to 55m, is fringed by reefs. Marsa Zubaydah provides sheltered anchorage, but the holding ground is bad.

An Nabqiyah (27°44'N., 36°01'E.), on the middle of the large bank, about 14 miles SSE of Sharm Jazzah, is low, sandy and covered with bushes.

An-Nuwayshiziyah is a low sandy islet about 8 miles SSE of An Nabqiyah.

6.21 Sharm Dumaygh (26°39'N., 36°11'E.) provides well-sheltered anchorage in its W part, in 16.5 to 23.8m, soft sand and coral, good holding ground. A good berth is with Mark Rock, a white conspicuous rock on the NE shore of the inlet, bearing 087° and the E extremity of the W side of the entrance bearing 176°.

Vessels without local knowledge should mark the channel before entering to avoid the steep and dangerous patches near the middle of the inlet and the shoal ground extending some distance E from the W side of the entrance.

The best time to enter is with the sun high or astern and at LW, when the reefs are visible.

Sharm Antar (26°36'N., 36°13'E.) is small and provides good anchorage.

Sharm al Wajh (26°13'N., 36°27'E.) is free of dangers in the approach. The shores of the inlet are fringed by a reef; the head of the inlet is foul. There are depths of 27.4m in the entrance, which is about 0.1 mile wide between the reefs, shoaling to about 5.5m about 0.2 mile within.

The coast in the vicinity consists of coral cliffs 15 to 21m high. A low plain, which is marshy near the sea and covered with salt encrustation, lies between these coral cliffs and the steep hills 3 or 4 miles inland. A fort, about 6 miles E of this inlet, is surrounded by hills.

Al Wajh, a village on the NW shore of the inlet, consists of some stone houses, a few minarets, and a fort. Two jetties, in ruins, on the NW side of the inlet, constitute a danger for boats approaching the landing quay.

A lighted radio mast, 75m high, stands 3 miles ENE of town.

Anchorage.—Small vessels can take good anchorage in Sharm al Wajh. The best berth is in 12.8m, about 183m SSE of the SE extremity of the village.

A vessel of moderate size can lie, moored head and stern, close inside the N entrance point, in stiff clay. This position is clear of the swell setting across the entrance, and safe against a shift of the wind to the S and SE, which is often very sudden; a NW swell sets into the inlet.

Large vessels can take indifferent anchorage, in about 59m, about 0.5 mile SW of the entrance of the inlet. Jazirat Muraykhah, about 5 miles WSW of Sharm al Wajh and described in paragraph 6.22, is a good mark in the approach to this inlet.

6.22 Ras Kharabah (26°09'N., 36°28'E.) is fringed by a reef; a small patch, not always seen, lies a short distance outside the visible reef off the point. An opening in the coastal reef near this cape affords good landing.

An inlet, about 2 miles SE of Ras Kharabah, can be distinguished from N by a bluff sloping to the low coast.

To the S of this bluff, the coast is reported covered with scrub. Another bluff, covered with black soil or stones, but not so conspicuous, lies farther S. Anchorage, in 31.1 to 36.6m, has been taken off this inlet.

Sharm Habban (26°06'N., 36°32'E.), about 6.5 miles SE of Ras Kharabah, is narrow and fringed by reefs. This inlet affords good anchorage, in 7.3 to 9.1m, sand and mud.

A detached reef extends from about 0.1 to 0.2 mile NW from the SE entrance point; two reefs project as far as about 0.1 mile NW from the S shore of the inlet.

These projections and the detached reef are marked by discolored water; the channel N of these dangers is 91m to 270m wide. There are depths of 6.9 to 7.8m in the entrance and from 5.9 to 14.6m inside the inlet.

Jazirat Muraykhah (26°10'N., 36°22'E.), low and rocky, gradually rises from its E end to a height of 15m in the middle and at its W end. Good anchorage, in 18.3 to 21.9m, can be taken S of the rocky patches between Jazirat Muraykhah and the islets E.

Jazirat al-Mardumah, about 8 miles SE of Jazirat Muraykhah and on the S end of the same bank, is a coral ridge in detached pointed masses, about 61m high.

Ras Karkuma (Ras Qurqumah) (25°53'N., 36°38'E.) is fringed by a reef which extends about 2 miles WSW. The land within this cape rises gradually to a height of 122m, about 2 miles E.

6.23 Ash Shaykh Mirbat (25°54'N., 36°35'E.), about 3 miles W of Ras Karkuma, is a low coral island, bordered by reefs; a conspicuous tomb stands on the island. A detached islet, 4m high, lies close off the W end of the island; a rock, 0.3m high, lies about 1 mile WNW of the island.

The approach to this island is safe, as the reefs surrounding it and those to the S are visible. Hawar Island, about 5 miles SSW of Ash Shaykh Mirbat, and Umm Urumah, about 1 mile farther S, are both low and sandy; the latter islet is covered with bushes.

Mashabih (25°39'N., 36°28'E.) is composed of level coral about 5-6m high. Its W coast, consisting of coral cliffs, is bordered by a steep-to reef, on which are several rocks.

Shaybara (25°24'N., 36°50'E.) is a low sand and coral island with many bushes, lying on the SE extremity of a reef with many coral islets on it. Wughadi, about 3 miles SE of Shaybara, is a low islet.

Anchorage.—Good anchorage can be taken in the inner channel among the reefs between Ras Karkuma and Wughadi, but no vessel should pass inside the reefs in this locality except to take up a temporary anchorage.

6.24 Umm Lajj (25°02'N., 37°14'E.) is a small village on the coast, with a conspicuous white minaret. A large table-topped mountain, about 1,219m high, lies about 8 miles ENE of Umm Lajj. It is somewhat isolated and is a fairly good mark.

Jabal Turham (Nipple Hill), rising to a height of 187m about 3 miles E of Umm Lajj, is a sharp cone in the coastal range and the highest peak in the vicinity. It is rather difficult to distinguish, but when in range with the above table-topped mountain, its identity becomes apparent.

Al Hasani (24°58'N., 37°03'E.), an island fringed by coral reefs lying about 9 miles SW of Umm Lajj, has two peaks, each about 150m high, on its W side. The W side of these two peaks is steep, but the E side falls gradually to a plain.

A tomb, on the E side of the island, about 0.4 mile N of its SE end, and a small white house, about 0.2 mile farther N, are good marks when visible.

A sand patch, on the S side of the island close to its SE extremity, is conspicuous.

There appears to be no passage over the foul ground, with numerous coral heads, extending N and NE from Al Hasani and continuing to the coast.

A reef extends about 2 miles S from the SW end of the island; from the same point a conspicuous sand spit extends about 1 mile along the middle of this reef.

Numerous detached coral patches and rocks lie between the S end of this reef and the SE extremity of the island. The sea around Al Hasani is very clear, and even patches with depths of 9m show well in certain lights.

Anchorage.—Anchorage can be taken about 0.5 mile E of Al Hasani, in about 14.6m, sand and coral, fair holding ground, with the SE extremity of Al Hasani bearing 227° and the small white house bearing about 270°.

6.25 Libanah, 76m high, about 0.5 mile W of Al Hasani, is, except on its NE side, bordered by a reef extending about 0.5 mile S from it. The passage between Libanah and Al Hasani is encumbered with several coral patches.

A chain of reefs extends about 6 miles W from a position about 3 miles W of the N end of Al Hasani. The three largest reefs in this chain are awash at LW, and the sea generally breaks over them.

Shib Asbayzeniyat (24°51'N., 36°58'E.), over which the sea breaks during any wind, lies about 8 miles SW of the SE extremity of Al Hasani.

Shib Al Abayad (24°54'N., 37°07'E.), about 3 miles SSE of Al Hasani, dries 0.3m. Rocky foul ground extends about 1 mile N from Shib al Abyad and SE to the coast.

6.26 Umm Sihr (24°57'N., 37°09'E.), about 3 miles ESE of Al Hasani, is 4.5m high and covered with sparse vegetation. This islet is fringed, except at its E end, by a reef which extends about 0.5 mile S and NW.

A rock, 0.9m high, stands near the N end of the NW reef; about 0.2 mile farther NW is a rocky patch, with a 5.5m patch close S. Shoals, with depths of less than 10.9m, extend about 0.6 mile N and WSW, respectively, from this rocky patch.

Malihah (25°00'N., 37°07'E.), about 2.5 miles NE of Al Hasani, is a sand cay with some reported scrub. A reef extends about 2 miles W from this sand cay. Some patches extend as far as 0.9 mile E from Malihah; a detached patch lies about 1 mile SSW of it.

Gateway Channel, between Umm Sihr and Malihah, is narrow and has a least depth of 7.3m within about 0.2 mile on either side.

Shib al Guak (24°59'N., 37°11'E.), which dries, lies about 3 miles NNE of Umm Sihr. Some patches lie as far as 1 mile E from this reef, and a detached patch lies about 1 mile SE. The sea sometimes breaks on these reefs, but they cannot be depended upon to be visible.

Tides—Currents.—It was reported that a constant current sets N and E between Al Hasani and Ras Abu Madd.

Anchorage.—The only safe anchorage for large vessels near Umm Lajj is on a bank which extends about 1 mile N from Shib al Guak and the reef E.

A good berth is in 12.8 to 18.3m, with the minaret at Umm Lajj bearing 051°, distant 2.5 miles. The bottom is sand, interspersed with coral patches and boulders, and is fair holding ground.

6.27 Ras Abu Madd (24°50'N., 37°08'E.) is low and sandy. Black Hill, 274m high, stands about 11 miles E of Ras Abu Madd, and is conspicuous when seen from NW.

A range of mountains, 410 to 650m high and broken into detached pyramidal hills, stands about 15 miles inland in this vicinity.

Sugarloaf (24°33'N., 37°32'E.), about 28 miles SE of Ras Abu Madd, is the W hill of any prominence when seen S of **Ras Baridi** (24°17'N., 37°30'E.).

Jabal Hajinah, with six peaks, and another hill, lie about 9 miles ESE and 5 miles NE, respectively, of Sugarloaf; they are conspicuous when a vessel is near the coast.

The high land N of these hills is part of the mountain range extending inland from Umm Lajj SE to the vicinity of **Yanbu** (24°05'N., 38°03'E.). Round Mountain, about 17 miles NE of Jabal Hajinah, is the summit of this range.

Jabal Radwa (24°36'N., 38°16'E.), about 47 miles ENE of Ras Baridi, is the highest point of a range of table mountains.

Between this range and the coast is a group of dark-colored hills, generally about 152m high.

6.28 Jabal Subh (23°18'N., 39°01'E.) is the summit of a range about 24 miles in extent. It is the highest land between Yanbu and Jeddah.

Between Ras Abu Madd and Ras Mahar, about 8 miles SSE, the land near the coast is in some places low and sandy and in others high and rocky.

To the SE of Ras Mahar, the land rises gradually to elevations of 30 to 61m and forms an extensive tableland. The W side of this slope is intersected by numerous water courses. The coast is reported to be radar conspicuous.

Ras Mahar (24°43'N., 37°11'E.) is about 24m high and rocky, its upper part considerably overhanging the base. A small patch of rocks extends from it. A short distance SE of Ras Mahar is a similar bluff, about 49m high.

Anchorage.—Good anchorage can be taken in Sharm Mahar, about 3 miles SE of Ras Mahar, in 12.8m, sand, sheltered from NW winds.

A deep valley in the moderately-high tablelands closely approaching the coast in this vicinity is conspicuous and marks the inlet. This valley is extensive and spreads out to a consider-

able width as it advances to the interior.

The lower part of the valley is covered with bushes and a few straggling palm trees can be found about 1 mile inland.

This valley has the appearance of a dry bed of a river. The upper part of the hills on either side overhang considerably, and large fragments from them lie scattered in the valley.

6.29 **Sharm Hasy** (Sharm Hasi) (24°39'N., 37°18'E.) is fringed by reefs, which extend as far as 0.3 mile from the E shore of the inlet. The N half of this inlet is shoal and encumbered with reefs.

Good anchorage can be taken by small vessels about 1 mile inside this inlet, in 9.1 to 12.8m. Anchorage in the outer part is not recommended, as the channel is contracted and the bottom is foul.

The coast between **Ras al Lakk** (24°24'N., 37°25'E.) and Ras Baridi, about 8 miles SE, is steep-to and composed of coral cliffs. Ras Baridi is low and sandy. A conspicuous cement silo stands about 2 miles E of the point. The silo is lighted at night, and should not be mistaken for Yanbu.

Sharm al Khawr (24°17'N., 37°40'E.) is an unsurveyed inlet lying about 8 miles E of Ras Baradi. A bank, on which numerous dangers lie, extends about 14 miles S of the W entrance point of the inlet.

Sharm Yanbu (24°10'N., 37°55'E.) is about 1 mile wide. The inlet extends about 6 miles NNE, with a branch extending E close within the entrance and one extending NW farther in.

Depths of 12.8m were reported in the entrance and 12.8 to 18.3m in the harbor, which had a hard sandy bottom. There is a rock in the N arm, with shallow water between it and the shore to the N.

Yanbu (24°05'N., 38°03'E.)

World Port Index No. 48120

King Fahd Port (Mina al Malik Fahd) (23°57'N., 38°13'E.)

World Port Index No. 48120

6.30 Yanbu stands on low sandy land which lacks vegetation and is fringed in places by a coral reef.

King Fahd Port is a major oil and general cargo port linked to a crude oil pipeline that is reported to originate in the E part of Saudi Arabia.

The berthing complexes here are approached from seaward by swept routes through the reefs N and S of the port area.

The N approach is made via two charted channels, leading in turn to a Traffic Separation Scheme, established by the local authority. The S approach is well-marked.

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Winds—Weather.—A diurnal sea breeze/land breeze cycle occurs almost daily throughout the year and causes wind speeds of 10 knots and above to occur from the NW during the late afternoon. Storms occur as frequently as every 5 to 10 days and sometimes can last as long as 2 weeks.

Although there is little drop in barometric pressure and very rarely any precipitation during these storms, wind speeds of up to 30 knots may occur from the N or NW.

The incidence of fog is rare, but, should it occur, it is more likely during the period from November to April.

During the summer months, from May to September; the incidence of poor visibility (less than 5 miles) can be quite high due to mist and haze, or dust particles held in suspension in the atmosphere. However, throughout the year, dust storms may occur obscuring the coastline.

Tides—Currents.—The tidal range is about 0.6m at spring tides, but fluctuations due to non tidal effects are up to about 0.5m. The fluctuations due to non tidal effects are caused by storms which can cause a mean sea level drop of 0.6m during the storms and a significant increase in mean sea level after the storm, or as it subsides. Generally the tides are semi-diurnal.

Currents in the area are influenced by local wind conditions, tide, and the general circulatory pattern of the Red Sea.

Generally, currents within the port have been observed at less than 0.5 knot and run parallel to the coast.

Depths—Limitations.—Shib ash Sharm (24°03'N., 37°52'E.), awash and marked by a light, is an extensive bank lying from 6.5 miles SW to 8.5 miles S of the entrance to Sharm.

Reefs, drying reefs, and other dangers, which are best seen on the chart, extend SE and S of Shih ash Sharm to **Yanbu South Light** (23°28'N., 38°26'E.).

The N approach, consisting of the Seaward Approach Channels, are entered respectively about 47 miles SW or 50 miles W of the light on Shib ash Sharm. They are deep, well-surveyed, and best seen on the appropriate chart. The waters outside of the channels are unsurveyed.

The Traffic Separation Scheme leading from the pilot station to the boundary of the Controlled Navigation Area shows a least swept depth of 32m.

The S approach channel, entered about 2 miles SE of Yanbu South Light, is deep and well-marked, but requires local knowledge. A Traffic Separation Scheme leads through this approach.

Yanbu.—The port of Yanbu is entered from the Traffic Separation Scheme via a channel dredged to a depth of 12m. A turning basin dredged to the same depth lies in the center of the harbor. It has been reported that the entrance channel and turning basin have been dredged to a depth of 14m. Information on berthing facilities is given in the accompanying table titled **Yanbu—Berth Information**.

Yanbu—Berth Information

Berth	Length	Maximum draft	Remarks
No. 1	170m	8.22m	Passenger terminal.
No. 2	210m	8.53m	General cargo.
No. 3	210m	10.97m	Dry bulk cargo.
No. 4	106m	10.36m	General cargo.
No. 5	260m	10.36m	General, bulk, and ro-ro cargo.

Yanbu—Berth Information			
Berth	**Length**	**Maximum draft**	**Remarks**
No. 6	260m	10.67m	General, bulk, and ro-ro cargo.
No. 7	280m	10.67m	General, bulk, and ro-ro cargo.
No. 8	190m	10.97m	Bulk and ro-ro cargo.
No. 9	260m	11.12m	Bulk and ro-ro cargo.

Within the Controlled Navigation Area off King Fahd, a line of shoals, with a least charted depth of 3m, lies parallel to, and up to 2.5 miles off the shore.

A deep channel clear of dangers and about 1.5 miles wide lies between these shoals and the edge of the Controlled Navigation Area.

King Fahd Port.—The General Cargo and Container Terminal (GCCT) lies in the NW part of King Fahd Port. The terminal is approached via a fairway dredged to a depth of 16m and a turning basin dredged to a depth of 15m.

The Bulk Terminal lies SE of the General Cargo and Container Terminal.

The Service Harbor, located close WNW of the Bulk Terminal, is no longer dredged to 8m and may have lesser depths than charted.

The Export Refinery Terminal, E of the Bulk Terminal, consists of three berths (Berth No. 40, Berth No 41, and Berth No. 42, also known as the Export Refinery Chemical Terminal) in its inner basin and two berths (Berth No 54 and Berth No. 55) along the outer face of an L-shaped wharf. Berth No. 54 and Berth No. 55 are also known as Suez West and Suez East. Berth No. 40 is comprised of six breasting dolphins and four mooring dolphins.

The Crude Oil Terminal, a T-shaped jetty, lies close SW of the Export Refinery Terminal. The outer face consists of four berths, although only two vessels can berth here simultaneously.

The LNG Terminal, located SE of the Crude Oil Terminal, is L-shaped and provides two berths alongside its outer face for vessels loading refrigerated LPG or other specialized cargo.

The Yanbu Petromin Refinery Terminal, located SE of the LNG Terminal, consists of an L-shaped quay providing two berths on its inner face and two berths on its outer face.

The Construction Support Terminal, located ESE of the Yanbu Petromin Refinery Terminal, is no longer in use but can be reactivated if necessary. The terminal consists of an L-shaped pier and a ramp. Vessels with a maximum length of 205m can be accommodated at the inner berth; vessels with a maximum length of 250m can be accommodated at the outer berth. Bulk carriers up to 72,000 dwt, with a maximum draft of 11m, and general cargo vessels up to 50,000 dwt, with a maximum draft of 11.5m, can use this terminal.

Ras al Maajjiz Tanker Terminal, located about 9 miles SE of the Yanbu Refinery Terminal, consists of a trestle jetty, which contains three berths, connected to the shore by a causeway extending about 0.9 mile SW from Ras al Maajjiz. Breasting dolphins front the berths; lighted mooring dolphins are located NE and SW of the berths.

The berth locations can best be seen on the chart. Berth information is given in the accompanying table titled **King Fahd Port—Berth Information.**

King Fahd Port—Berth Information					
Berth	**Length**	**Depth alongside**	**Maximum vessel**		**Remarks**
			Draft	**Length**	
General Cargo and Container Terminal (GCCT)					
No. 1	200m	14.0m	12.6m	250m*	Container and ro-ro cargo.
No. 2	300m	14.0m	12.6m	250m*	Containers.
No. 3	200m	14.0m	12.6m	250m*	General cargo.
No. 4	180m	14.0m	12.6m	250m*	Heavy-lift and general cargo.
No. 5	180m	14.0m	12.6m	250m*	General cargo.
No. 6	180m	14.0m	12.6m	250m*	General cargo.
No. 7	180m	14.0m	12.6m	250m*	General cargo.
* A minimum distance of 15m is required between vessels at adjacent berths during berthing/unberthing operations.					
Bulk Terminal					
No. 21	250m	15.5m	13.9m	—	Bunkers. Can accommodate vessels up to 60,000 dwt.
No. 22	250m	15.5m	13.9m	—	Sulphur. Can accommodate vessels up to 60,000 dwt.
Export Refinery (Chemical) Terminal					
No. 40	220m	13.5m	12.1m	200m	Chemicals. Can accommodate vessels of 5,000 dwt to 50,000 dwt.

King Fahd Port—Berth Information					
Berth	Length	Depth alongside	Maximum vessel		Remarks
			Draft	Length	
No. 41	200m	13.5m	12.1m	200m	Chemicals. Can accommodate vessels of 5,000 dwt to 35,000 dwt.
Export Refinery Terminal					
No. 42	225m	13.5m	12.1m	200m	Refined products. Can accommodate vessels of 5,000 dwt to 35,000 dwt.
No. 54	300m	18.5m	16.6m	300m	Refined products. Can accommodate vessels of 30,000 dwt to 150,000 dwt.
No. 55	300m	18.5m	16.6m	300m	Refined products. Can accommodate vessels of 30,000 dwt to 150,000 dwt.
Crude Oil Terminal					
No. 61	440m	28.0m	25.3m	—	Crude oil. Can accommodate vessels of 80,000 dwt to 275,000 dwt, with a minimum length of 80m.
No. 62	470m	32.0m	28.9m	—	Crude oil. Can accommodate vessels of 275,000 dwt to 500,000 dwt, with a minimum length of 80m.
No. 63	490m	27.4m	24.7m	—	Crude oil. Can accommodate vessels of 120,000 dwt to 275,000 dwt, with a minimum length of 141m.
No. 64	400m	25.9m	23.1m	—	Crude oil. Can accommodate vessels of 100,000 dwt to 400,000 dwt, with a minimum length of 104m.
LNG Terminal					
No. 71	439m	25.1m	16.2m	—	LNG and naphtha. Can accommodate vessels of 20,000 dwt to 150,000 dwt, with a minimum length of 104m.
No. 72	439m	24.7m	16.2m	—	LNG and naphtha. Can accommodate vessels of 20,000 dwt to 150,000 dwt, with a minimum length of 104m.
Yanbu Refinery Terminal					
No. 91	245m	16.0m	14.2m	260m	Refined products. Can accommodate vessels of 20,000 dwt to 60,000 dwt.
No. 92	245m	16.0m	14.2m	260m	Refined products. Can accommodate vessels of 20,000 dwt to 8,000 dwt.
No. 93	175m	11.5m	9.8m	175m	Refined products. Can accommodate vessels of 3,000 dwt to 20,000 dwt.
No. 94	175m	11.5m	9.8m	175m	Refined products. Can accommodate vessels of 3,000 dwt to 20,000 dwt.
Ras al Maajiz Terminal					
No. 101	—	29.0m	26.2m	347m	Crude oil. Can accommodate vessels of 35,000 dwt to 300,000 dwt, with a maximum beam of 61m.
No. 102	—	32.5m	29.6m	421m	Crude oil.Can accommodate vessels of 100,000 dwt to 500,000 dwt, with a maximum beam of 61m.
No. 103	—	29.0m	26.2m	347m	Crude oil. Can accommodate vessels of 35,000 dwt to 300,000 dwt, with a maximum beam of 61m.

Aspect.—Reefs and shoals, lying up to 38 miles offshore, front the shore in the vicinity of Yanbu. This section of coast is lower than the coast to the N marshy, and thickly covered by mangroves. Inland, sharp conical hills up to 300m high, and all the surrounding land appear to be covered by a fine light sand.

Yanbu.—A conspicuous white building (the Harbormaster's

Office) and a water tower stand near Berth No. 1.

Two cement silos, and another water tower about 0.3 mile NE of them, are conspicuous.

The taller buildings of the tower are reported to be visible up to 13 miles offshore.

Yanbu

In the early morning, mist may obscure the hinterland. After 0900 the sun is sufficiently high for the reefs to be seen easily.

A group of six conspicuous flares stands within a short distance of each other near the root of the NGL Terminal, about 2 miles E of the Port Control Tower.

King Fahd Port.—The Port Control Tower (23°57.2'N., 38°13.0'E.) is prominent. A radio mast, 60m high, stands about 3.5 miles N of the control tower.

King Fahd Industrial Port

Several groups or pairs of conspicuous chimneys, all of which show flashing obstruction lights, are situated, relative to the Port Control Tower, as follows:

1. Two chimneys, each 88m high, standing close together, 1.5 miles N.
2. A group of three chimneys, each 142m high, about l mile NE.
3. Two chimneys, about 3.5 miles E.
4. Two chimneys (23°52'N., 38°22'E.) standing close together near the coast 4.5 miles SE of the Construction Support Terminal.

King Fahd Port Control Tower

It is reported that a tower, from which a strobe light is shown, stands approximately 1.5 miles N of the Port Control Tower. This light has been sighted from a distance of 32 miles.

Pilotage.—Pilotage for Yanbu, which is available 24 hours, is compulsory for all vessels.

Pilotage for King Fahd, which is available 24 hours, is compulsory, as follows:

1. Northern approach—Vessels of 300 gross tons and over.
2. Southern approach—All vessels.

Vessels should send their ETA at the outer pilot boarding position and await instructions from King Fahd port before proceeding to the inner pilot boarding position. The pilot normally boards and disembarks at the inner pilot boarding position. A pilot will board at the outer pilot boarding position if arranged well in advance. Pilot boarding and disembarking is at the discretion of the pilot.

The pilot boarding positions for both Yanbu and King Fahd Port are, as follows:

1. Northern approach.
   a. Outer—in position 24°02.0'N, 37°44.0'E.
   b. Inner—in position 24°05.0'N, 37°55.0'E.
2. Southern approach.
   a. Outer—in position 23°26.6'N, 38°27.2'E.
   b. Inner—in position 23°50.0'N, 38°19.0'E.

The pilots can be contacted on VHF channel 16.

Regulations.—Radio reporting points, the positions of which may best be seen on the chart, are established in the approaches to Yanbu and King Fahd Port. Inbound and outbound vessels should communicate with Port Control when passing through these positions.

Vessels carrying explosives of ammonium nitrate shall not be underway between sunset and sunrise.

The Saudi Arabian flag should be hoisted when within territorial waters and kept flying day and night until the vessel departs Saudi Arabian waters.

The vessel's ETA should be reported 10 days, 48 hours, and 24 hours before arrival. Any changes to the ETA of over 2 hours should also be reported.

The vessel's ETA should be confirmed by VHF when the vessel is within range. Permission to enter the port must be obtained from Port Control.

Vessels calling at Saudi ARAMCO Crude Oil, LPG, and Refinery Terminals should send their initial ETA as soon as it is known and confirmed 72 hours, 48 hours, and 24 hours in advance. All ETA and related messages should be sent via e-mail, as follows:

1. Crude Oil and LPG: g-ygt-telex@aramco.com
2. Refinery: g-yan-telex@aramco.com

Contact Information.—Contact information for the two ports can be found in the table titled **Yanbu/King Fahd Port—Contact Information**.

Anchorage.—Five anchorage berths are charted on a bank about 3 miles SW of the port control tower, with depths ranging from 29 to 53m, over a charted bottom of coral and fine sand.

Another anchorage, about 0.2 mile in radius, is charted about 1 mile SW of the Construction Support Terminal. The least swept depth at the anchorage is 32m. Another anchorage is bound by a line joining Lighted Buoy 1R, Lighted Buoy 3R, and Lighted Buoy 1P. It lies close SW of the 32m depth anchorage, and can be used by vessels with a maximum draft of 10m.

Vessels are advised to take only temporary anchorage, and keep their engines ready to maneuver, especially in N to NW winds.

Directions.—Vessels should not mistake the lights shown from the cement silo on **Ras Baridi** (24°16'N., 37°33'E.) for Yanbu when approaching from seaward.

In the N approach, the seaward approach channels are not marked, but the Traffic Separation Scheme, dredged cuts, and dangers inshore of the barrier reef are well-marked.

In the S approach, the channel through the reef is deep and well-marked, but it is inadequately charted at present.

Vessels are urged to contact the local authorities for the latest information on this channel and the approach routes to it.

Caution.—The approach channels and waters of the port have been well-surveyed within the channel boundaries shown on the chart, but less water and/or uncharted dangers may exist outside of them. Vessels are strongly advised to remain within the fairways.

Yanbu/King Fahd Port to Jeddah

6.31 Ar-Ras al Abyad (23°32'N., 38°33'E.) is low and sandy. Ras Masturah, about 33 miles SSE of Ar-Ras al Abyad, is 20m high and is reported to give a good radar return.

Rabigh (22°44'N., 38°59'E.) (World Port Index No. 48130), about 18 miles SE of Ras Masturah, is a bay that has been dredged to provide an oil-loading terminal for berthing VLCCs handling oil and other products of a large oil refinery close S of the harbor.

Winds—Weather.—The prevailing wind is reported from the NW. Gales from the S or SW, with poor visibility, occur most frequently between December and March.

Summers are hot and very humid. Winters are mild and pleasant.

Tides—Currents.—The tidal currents are weak and scarcely perceptible. The range of the tide is about 1.2m.

Depths—Limitations.—To the SW of the harbor entrance, and separated from it by a deep channel, is the N end of a bank which extends 25 miles S.

Numerous reefs lie on this bank, which is steep-to on its E side. Tanta Rock, marked by a light, stands on the N end of this reef, about 3 miles W of the harbor entrance.

The harbor is entered between Ras el Auliya, the SE extremity of a low ridge of hard sand, and Ras Abu Dibsa, about 0.4 mile farther SE. Drying reefs extend 1 mile SW from the W side of Ras el Auliya and 0.3 mile S of Ras Abu Dibsa.

Yanbu/King Fahd Port—Contact Information

	Yanbu Port Control	Yanbu Port Authority	King Fahd Port Control
Call sign	Yanbu Port Control	—	King Fahd Port Control
VHF	VHF channels 9, 12, 14, and 16	—	VHF channels 11, 16, and 74
RT	2025 kHz and 2182 kHz	—	—
Telephone	—	966-14-3222100	966-14-3967177
			966-14-3967188
Facsimile	—	966-14-3227643	966-14-3967037
Telex	—	495-661005 PORT SJ	495-662364 KFPYB SJ
			495-662365 YANBU SJ

The entrance channel, dredged to a depth of 28m and 400m wide at its outer end, narrows to 240m about 0.5 mile SW of Ras el Auliya, and then leads NE to a turning basin. From the turning basin, Dry Cargo Port extends NE and Liquid Cargo Port extends SE. Pioneer Port lies close SW of Liquid Cargo Port.

The turning basin is dredged to a depth of 27m and is about 900m in diameter; it is marked at its NW end by a lighted buoy.

Dry Cargo Pier is situated on the S side of the entrance channel, between Ras Abu Dibsa and Pioneer Port. Dry Cargo Pier has a berthing length of 80m and a depth of 6.5m alongside. It is used for all handling of dry cargo and ro-ro traffic.

Pioneer Port is dredged to a depth of 15m. Four concrete piers, with depths from 7 to 15m alongside, project from the S side of the basin. Pioneer Port is used by tugs and small craft.

Liquid Cargo Port, 960m long on its NE side and 760m long on the SW, is 690m wide and dredged to a depth of 26.5m. Berth No. 2 and Berth No. 3, on the NE side of the basin, each consist of a concrete T-headed jetty with mooring and breasting dolphins; the berths have depths of 26m alongside and can accommodate tankers from 30,000 to 325,000 dwt, with a maximum length of 400m and a maximum draft of 23m. With strong W winds, to which the berth is exposed, berthing may be impossible, even with the help of tugs.

Dry Cargo Port is dredged to depths of 10 to 14m. This basin forms the non-commercial area of the harbor; there are piers for yachts along its SE side.

Aspect.—The entrance is marked by lighted buoys. Two stone huts stand on Ras el Auliya.

The customhouse stands on the N side of the bay, near three brick buildings, 1.5 miles NE of Ras el Auliya. The ruins of a pier extend from the shore about 0.1 mile SW of the customhouse.

Pilotage.—Pilotage is compulsory and is available 24 hours. Pilots board in the approach channel 2.2 miles NW of Tanta Rock. Vessels should not proceed E of this position without a pilot.

The pilot vessel is equipped with VHF but communications should be through Port Control.

Regulations.—The vessel should send its initial ETA as soon as it is known and confirmed 72 hours, 48 hours, and 24 hours in advance. All ETA messages should be sent via e-mail (rab-telex@aramco.com).

Contact Information.—Port Control can be contacted (call sign: Rabigh Port Control) on VHF channels 1, 3, 9, 15, 16, 18A, 19A, 65A, 66A, 78A, and 79A.

The terminal can be contacted, as follows:

1. Telephone: 966-124223200
2. Facsimile: 966-124221794
   966-124223136
3. E-mail: rab-telex@aramco.com

Anchorage.—Large vessels are reported to anchor SW of the refinery. Small vessels anchor SE of Tanta Rock.

6.32 Shib al Bayda (22°44'N., 38°47'E.) is steep-to and dries; the S end of the reef is marked by a beacon. Deep-draft vessels should pass at least 0.7 mile S of this beacon.

King Abdullah Port (22°31'N., 39°05'E.), part of the King Abdullah Economic City project, is under construction about 13 miles S of Rabigh. The port is designed to handle container, ro-ro, bulk liquid, bulk solid, and general cargo.

Winds—Weather.—Gales from the S or SW, accompanied by poor visibility, occur most frequently from December to March.

Tides—Currents.—The mean springs range is about 0.4m while the mean neaps range is about 0.2m.

Depths—Limitations.—The port is approached through a 17-mile long IMO-approved Deep-Water Route and an associated Precautionary Area, marked by virtual AIS, and is entered through a 700m-wide channel dredged to a depth of 18m.

The container terminal consists of two berths, with a total length of 820m and an alongside depth of 18m. Two vessels, with a maximum length of 400m and a maximum draft of 16.5m, can be accommodated. Two additional container berths are still under construction and are scheduled to be open to traffic in late 2014.

Pilotage.—Pilotage is available 24 hours and is compulsory for the following:

1. All vessels of 500 gt and over.
2. All vessels carrying dangerous cargo or harmful substances, regardless of size.
3. All vessels deemed by the port to require a pilot.

Pilots board about 3 miles WSW of the harbor entrance in approximate position 22°29'30"N, 39°02'09"E.

Pilots should be requested 48 hours in advance; the request should include the vessel's loa and draft. Confirmation should be made no later than 1 hour prior to arriving at the pilot boarding position.

The pilots can be contacted, as follows:

1. VHF: VHF channels 16 and 73
2. E-mail: vts@kingabdullahport.com.sa
3. Web site: http://www.kingabdullahport.com.sa

Vessel Traffic Service—King Abdullah Port Vessel Traffic Service operates in the port. Participation in the VTS is compulsory for all vessels over 500 gt and all vessels licensed to carry 12 or more passengers. The following procedures apply in the VTS:

1. Inbound vessels:
   a. Vessels should send their ETA in the VTS area at least 24 hours prior to arrival or upon leaving their last port if less than 24 hours, stating the following:
      i. Vessel name.
      ii. Call sign.
      iii. Gross tons.
      iv. Maximum draft.
      v. Destination.
      vi. ISPS security level.
      vii. Number of persons on board.
      viii. Last port of call.
      ix. Any deficiencies which might affect the safe navigation of the vessel.
   b. Vessels must confirm their ETA 3 hours before arrival, or as soon as practicable, when within VHF range.
   c. All vessels must obtain permission prior to entering the VTS area.
   d. Vessels are required to report to the VTS at the following points:
      i. At the entrance to the deep-water channel.
      ii. When abeam of Qita al Kirsh.
      iii. At the pilot boarding position.

2. Vessel within the area:
   a. All vessels must maintain a continuous listening watch on VHF channels 14 and 16.
   b. All vessels must report upon anchoring or berthing.
   c. All vessels must obtain permission prior to getting underway from anchor or leaving a berth.
   d. All vessels must report upon clearing an anchorage or berth.
3. Outbound vessels or vessels shifting berths:
   a. All vessels must send their ETD at least 2 hours prior to departure; however, the ETD will not be accepted more than 3 hours in advance.
   b. All vessels must given a 30-minute confirmation of ETD.
   c. All vessels must obtain permission to move from the VTS. Permission to move is valid for 15 minutes. If the vessel has not cleared by then, a new permission must be obtained.
   d. Vessels are required to report to the VTS at the following points:
      i. At the pilot boarding position after pilot disembarkation.
      ii. When abeam of Qita al Kirsh.
      iii. When exiting the deep-water channel.

In the event of a major incident in the port, details will be broadcast of VHF channel 16 with the heading "King Abdullah Port Incident." Vessels should maintain current communications watches, minimize all VHF radio traffic, and be ready for vessel traffic instructions. Vessels requiring emergency assistance with the VTS area should contact the VTS on VHF channel 14.

The VTS can be contacted, as follows:

1. VHF: VHF channels 14, 16, 67, 69, and 71
2. Telephone: 966-5-49148005 (24 hours)
3. E-mail: vts@kingabdullahport.com.sa
4. Web site: http://www.kingabdullahport.com.sa

Contact Information.—The port can be contacted, as follows:

1. VHF: VHF channels 14, 16, 67, 69, and 73
2. Telephone: 966-5-65692611 (24 hours)
3. Web site: http://www.portsdevco.com
   http://www.kingabdullahport.com

Anchorage.—Anchorage can be obtained by small vessels with local knowledge off the NE side of Shib Nazar. Caution should be observed because of the several dangers in the area of Shib Nazar.

Caution.—Shib Nazar (22°19'N., 38°51'E.), marked on its S side by a lighted buoy and a light with a racon. has depths of less than 1.8m and is located at the SW end of a bank that extends about 26 miles SSW from Rabigh. Two stranded wrecks lie on the N part of the reef.

6.33 **Al Qadimah** (Mina al Qadimah) (22°21'N., 39°05'E.) is a port used principally for the unloading of military cargo. Vessels are urged to contact local authorities before attempting to berth here.

Depths—Limitations.—The approach channel is entered between two buoys S of Shib Nazar. The fairway, which has a depth of 12m, leads from seaward through the coastal reef to the port.

A quay which has been built here is reported to have a length of 400m and depths of 13 to 14m alongside its W face; the NE face is reported to be 200m in length, with alongside depths of 7m.

Pilotage.—Pilotage is available during daylight hours only. The pilot boards W of the inner coastal reef.

Regulations.—Port Control should be contacted (call sign: Qadimah Port Control) on VHF channel 16, 72, or 74 before entering the fairway.

Anchorage.—Anchorage can be had at the pilot boarding ground, in depths of 15 to 20m.

Directions.—Vessels are urged to contact local authorities for the latest information on channel depths before attempting to berth here. A pair of range beacons, in alignment bearing 103°, marks the channel reach passing through the coastal reef.

Caution.—The only landmark at the seaward end of the channel is reported to be a radar conspicuous wreck on Shib Nazar. In daylight, the edges of the reefs along the channel are clearly visible.

The approach to the port crosses the Deep-Water Route leading to King Abdullah Port.

6.34 Between Ras Makhluq and **Ras Hatibah** (22°00'N., 38°58'E.) are several spacious anchorages, but they are difficult to approach because of the off-lying dangers.

Haramil, 3.3m high and covered with bushes, lies about 7 miles WSW of Ras Makhluq. It is merely an accumulation of drift on the upper ridge of a reef. An isolated steep-to patch, the existence of which is doubtful, lies about 5 miles WNW of Haramil.

Aiqa, a sandy islet, lies about 3 miles N of Ras Hatibah and 0.5 mile offshore.

Between Ras Hatibah and Ras al Sahhaz, about 30 miles SSE, the coast is low and sandy for the first 20 miles to Sharm Abhur; the high land inland presents no conspicuous features.

About 10 miles E of Sharm Abhur, North Sister and South Sister are the mountains to the N in the vicinity; they are conspicuous.

Shib al Kabir (21°41'N., 38°50'E.) is marked by a light and a racon. This reef lies on the SW side of a bank which extends about 32 miles S from a position 15 miles SW of Ras Makhluq.

Caution.—The reefs lying S and E of Shib al Kabir should be given a wide berth. Uncharted coral heads may exist within the 100m depth contour in this area. Reefs dry in the summer months when N winds are blowing, but may be covered by up to 1m with S winds.

Jeddah (Jiddah) (21°29'N., 39°11'E.)

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6.35 Jeddah, the pilgrimage port for Mecca (Makkah) and Madinah, is the principal port of Saudi Arabia on the Red Sea. The bay, entered between Ras al Jahhaz (Ras Qahaz) and Ar Ras al Aswad, about 9 miles S, is encumbered with a series of reefs, which form three nearly parallel lines in a N and S direction.

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The port is so well-protected by these reefs that the sea within them is comparatively smooth regardless of the force and direction of the wind.

Jeddah, a town on the NE side of the port, is situated on a long sandy plain which extends 5 to 10 miles inland to the base of a range of hills.

Winds—Weather.—The prevailing winds are between N and W throughout the year, and although generally light to moderate, they are liable to freshen daily to a force of 4 to 6 by the afternoon.

The natives say that when the wind remains from the N during the night, a strong wind from that direction may be expected the next day; however, if the wind inclines to the E in the early morning, it will be light and the weather fine.

On rare occasions, the E winds sweep in, bringing sand from the desert, but they seldom exceed 17 knots. The S wind in summer, whether light or fresh, brings a high humidity; a fine dust sometimes accompanies it and reduces visibility.

Tides—Currents.—The currents in the approach are strong and variable, but in the bay itself no appreciable current is found.

The summer LW level is 0.6m below that of winter. In summer, when N winds prevail, many of the banks are dry. In January, many years ago, during a N gale of 5 day's duration, the level of water fell about 1.5m.

Depths—Limitations.—Middle Gateway (Bawabat al Mamarral Wasta) and Inner Gateway (Bawabat al Mamarr ad Dakhiliyah), each with a least swept depth of 16m over a width of about 0.1 mile, lead to the major facilities of the port.

The JRD Tanker Terminal Approach Channel has been dredged to a depth of 16.4m (1996), while the channel to the JRD Inner Harbor has been dredged to a depth of 13.4m (1996).

The main approach to the Royal Saudi Naval Facility has been dredged to a depth of 11.6m (1981). The depths alongside the piers have been dredged to 9.1m (1981).

The least charted depth in the approach channel to the ammunition pier is 6m.

There are 58 numbered berths within the port for a variety of cargo types. The basins containing the various berths are dredged to depths of 11 to 15.5m. Information on the berths is contained in the accompanying table titled **Jeddah—Berth Information**.

The normal maximum permitted draft is 13.5m; vessels up to 300m long are berthed regularly.

The JRD Tanker Terminal is located on the seaward side of the causeway forming the W side of JRD Inner Terminal. Berth information is given in the accompanying table titled **Jeddah—Berth Information**. Vessels are urged to contact the local authorities and the pilot for information at this terminal before attempting to berth here.

Jeddah—Berth Information

Berth	Length	Depth alongside	Remarks
North Basin			
No. 1	250m	13.9m	Bulk grain and general cargo.
No. 2	260m	13.9m	Bulk grain and general cargo.
No. 3	260m	14.0m	Bulk grain and general cargo.
No. 4	250m	14.0m	Jeddah Northern Container Terminal. Handles bulk grain, containers, and general cargo. Ro-ro ramps are located between Berth No. 6 and Berth No. 7, as well as between Berth No. 8 and Berth No. 9. Can accommodate vessels with a maximum draft of 15.5m.
No. 5	250m	14.0m	
No. 6	250m	14.0m	
No. 7	250m	13.4m	
No. 8	250m	13.4m	General cargo.
No. 9	250m	11.0m	General cargo.
No. 10	184m	11.0m	General cargo.
No. 11	154m	7.5m	General cargo.
No. 12	205m	7.9m	General cargo.
No. 13	205m	7.9m	General cargo.
No. 14	110m	7.8m	General cargo.
No. 15	60m	7.5m	Passenger and ro-ro vessels.
No. 16	60m	7.5m	Passenger and ro-ro vessels.
No. 17	60m	7.5m	Passenger and ro-ro vessels.
No. 18	60m	7.5m	Passenger and ro-ro vessels.
No. 19	75m	7.5m	Passenger and ro-ro vessels.
No. 20	185m	10.0m	Passenger vessels.

Jeddah—Berth Information			
Berth	**Length**	**Depth alongside**	**Remarks**
No. 21	200m	10.8m	Passenger vessels.
Southeast Basin			
No. 22	183m	11.0m	General cargo.
No. 23	180m	10.0m	General cargo.
No. 24	180m	10.5m	General cargo.
No. 25	180m	10.5m	General cargo.
No. 26	200m	10.3m	General cargo.
No. 27	184m	10.3m	General cargo.
No. 28	181m	10.3m	Bulk grain and general cargo.
No. 29	181m	10.4m	Bulk grain and general cargo.
No. 30	181m	12.0m	General cargo.
No. 31	181m	12.0m	General cargo.
No. 32	180m	12.0m	Chilled and frozen cargo.
No. 33	180m	11.8m	Chilled and frozen cargo.
No. 34	180m	11.7m	Bulk grain and general cargo.
No. 35	190m	10.7m	Container vessels.
No. 36	200m	10.8m	General cargo.
No. 37	250m	11.5m	General cargo.
No. 38	250m	11.9m	General cargo.
No. 39	180m	12.0m	General cargo.
No. 40	181m	11.8m	General cargo.
No. 41	181m	11.6m	General cargo.
No. 42	181m	11.6m	General cargo.
No. 43	180m	11.8m	General cargo.
No. 44	180m	11.2m	General cargo.
No. 45	180m	11.8m	General cargo.
No. 46	181m	12.0m	General cargo.
No. 47	180m	12.0m	General cargo.
No. 48	180m	12.0m	General cargo.
No. 49	180m	12.0m	General cargo.
Southwest Basin			
No. 50	222m	13.0m	General cargo.
No. 51	248m	14.9m	Container vessels.
No. 52	249m	14.6m	Container vessels.
No. 53	250m	14.2m	Jeddah Southern Container Terminal. Handles container vessels. A ro-ro ramp is located at Berth No. 56.
No. 54	250m	14.3m	
No. 55	240m	14.7m	
No. 56	260m	15.0m	
No. 57	205m	13.0m	Livestock.

Jeddah—Berth Information			
Berth	**Length**	**Depth alongside**	**Remarks**
No. 58	205m	12.7m	Livestock.
JRD Tanker Terminal			
No. 1	250m	17.5m	Petroleum products. Can accommodate vessels up to 100,000 dwt, with a maximum length of 260m and a maximum draft of 12.8m.
No. 2	250m	17.5m	
No. 3	250m	11.7m	

Jeddah Southern Container Terminal

The JRD Inner Terminal is located at the head of a basin close E of the root of the causeway on which the JRD Tanker Terminal is located. The facility can accommodate vessels from 6,000 dwt to 49,000 dwt, berthed stern-to, with one or both anchors down. Depths alongside the terminal range from 7.0m to 12.8m. The facility handles petroleum products and lubricating oil.

The shipyard E of Anchorage A is contained within a basin, dredged to a depth of 8m. An ammunition pier is available about 3 miles SSE of the Chyoda Island Oil Terminal. The local authorities should be consulted before attempting to berth here.

The Red Sea Gateway Terminal is located on the N side of the Jeddah Northern Container Terminal. The terminal consists of three numbered berths, known as R1 through R3, with a total berthing length of 735m and an alongside depth of 16.5m. Berth R4, which is 235m long with an alongside depth of 15m, is used by service craft. An additional 317m of berthing space is planned. The facility is approached via a 4,500m-long dredged approach channel, with a dredged turning basin having a diameter of 650m; the approach channel and the turning basin have been dredged (2009) to a depth of 16.5m.

Red Sea Gateway Terminal Home Page

http://www.rsgt.com

Aspect.—The landmarks by which the position of Jeddah can be identified, before the town is visible, are not easily distinguished. The mountains backing the plain E of the town are so rugged and uneven that the peaks are difficult to identify. They are also very often obscured.

Jabal Umm Arar, about 10 miles NNW of Ras al Jahhaz, appears as the W hill of a range N of Jeddah when approaching from S.

Jabal al Yamaniyah, about 8 miles ENE of Jeddah, is conical, and can easily be recognized when the town is on E or NE bearings, as it is then the most noticeable cone behind the houses. The jagged appearance of the double-peaked hill S of Jabal al Yamaniyah is an aid in identifying it.

Jabal Hadda, about 18 miles E of Jeddah, is a double peak with a saddle between them. It is generally the highest and most conspicuous of the nearer mountains to be seen, as the higher range behind Makkah is seldom visible.

Jabal al Moya, black and rounded, stands about 7 miles SSW of Jabal al Yamaniyah and is the S extremity of the range nearest the coast. This hill is conspicuous because of its color and its being at the end of a line of white sand hills lining the foreshore.

Jabal Sanam is a small but conspicuous nipple on a flat hill about 9 miles SE of Jeddah. This hill has the same appearance from all directions.

When a vessel is near the latitude of Jeddah, the town itself can generally be seen from a position outside the reefs, with the buildings appearing white in the sun and several minarets showing above them. The beacons on some of the outlying patches are good marks, but cannot be depended on.

Great care should be taken not to mistake the lights of the airport, 14 miles N of Jeddah, for those of the city and the port.

The following may be useful marks when approaching Jeddah:

1. New Control Tower—twin towers standing on the W mole of the service harbor.
2. A conspicuous hotel about 3 miles N of the old control tower.
3. A fountain, which is conspicuous when illuminated during the King's presence in the city, is situated about 0.6 mile WSW of the hotel.
4. A conspicuous building 1.2 miles NE of the old control tower.
5. A conspicuous mushroom-shaped water tower standing about 3 miles ENE of the old control tower.
6. Conspicuous silos situated 0.7 mile ESE and 1.5 miles SSE of the old control tower.
7. A refinery, about 2 miles SE of the old control tower,

Jeddah Marine Control Tower

consisting of a tower marked by obstruction lights, a conspicuous flare, and a number of silver colored tanks.

It has been reported that, due to the modern skyline of the city, the hotel and silos were difficult to distinguish.

A conspicuous group of buildings with a tower, 25m high, stands about 3 mile N of Ras al Jahhaz. The Prince's Palace, about 2 miles ESE of Ras al Jahhaz, is easily distinguishable as far as 8 miles by vessels approaching from W or NNW.

When vessels are approaching the gateways to Jeddah, the buildings on **Jazirat Abu Sad** (21°26'N., 39°10'E.) and Jazirat al Wusta, about 1.5 miles farther SSW, are good marks. The four buildings on the latter island have red roofs.

A jetty, which gives a good radar return, extends W from Ras al Jahhaz, 5 miles NNW of Jeddah Pier. A desalination plant with two conspicuous chimneys and a water tower are situated close NE of the jetty.

A factory and a chimney are situated 5 miles farther NE. A radio mast, with two dish aerials, stands 4 miles NNW of Jeddah Pier.

The headland 0.5 mile ESE of the SE end of Ras al Jahhaz is reported to give a good radar return.

A conspicuous office block stands in the commercial center of Jeddah. It was reported that this building was of particular assistance in identifying the position of Jeddah from seaward. The building is marked by obstruction lights.

Pilotage.—Pilotage is compulsory for all vessels greater than 150 nrt entering, navigating within, or departing the port. Pilotage for most vessels is available 24 hours; pilotage for tankers is only available from 0700 to 1600.

The pilots can be contacted (call sign: Jeddah Pilot) on VHF channels 9 and 12.

Pilots board, as follows:

1. North Approach Channel—about 1 mile NW of Shib Qahan Lighted Beacon (21°27'N., 39°07'E.).
2. South Approach Channel—position 21°23.7'N, 35°04.0'E for the Aramco Pilot.

A pilotage request should be forwarded through Jeddah Signal Station, on VHF channel 12 or 16, stating the following information:

1. Vessel name.
2. Nationality.
3. Call sign.
4. IMO number.
5. Length overall.
6. Cargo.
7. Agent's name.
8. Maximum draft.
9. Gross tonnage and net tonnage.
10. Last port.
11. Number of ISPS certificate.

Regulations.—The vessel's ETA should be sent by e-mail 5 days, 96 hours, 72 hours, 48 hours, and 24 hours in advance. The following information should be included in the first ETA message sent to the port:

1. Name of vessel.
2. Call sign.
3. Owner.
4. Nationality.
5. Agent.
6. Length overall.
7. Maximum draft in meters.
8. Number of hatches.
9. Gross tons, net tons, and dwt.
10. Former names, if any.
11. Type of vessel.
12. Type of propulsion and number of propellers.
13. Type of cargo.
14. Amount of cargo in metric tons.
15. Amount of cargo in cubic meters.

16. Number of containers (units and types).
17. Number of livestock.
18. ETA.
19. Arrival draft.
20. Hatch distribution.
21. Number of LCL containers.
22. Fumigation certificates (vessel and cargo).
23. Economic speed.
24. Port of registry.
25. Location 48 hours prior to arrival.
26. Classification registry number.
27. Last port of call.
28. Next port of call.
29. Year built.
30. Weapons and ammunition on board for self defense.
31. Transit cargo declaration.
32. Number, location, and safe working load of cranes or derricks and details of accommodation ladders.
33. Any equipment for discharging containers.
34. Does cargo include hazardous or poisonous waste? (Yes/No).
35. Security level at which the vessel is currently operating (and to update any change made prior to arrival, if any).
36. Security level at which the vessel operated at its previous ten calls at port facilities.
37. Number and nationalities of passengers disembarking and those in transit.
38. Number, date, and body that issued the ISPS Certificate.

Vessels equipped with more than one radar should give the information concerning radar for each radar. The radar information required in 6 through 12 above need only be supplied in the first ETA message.

Vessels should contact Port Control, as follows:

1. When within VHF range.
2. When 20 miles from the port, to confirm ETA.
3. When 2 miles from the pilot boarding position, if berthing, supplying the vessel's gt, loa, draft, agent's name, last port of call, and cargo for Jeddah.
4. When anchored in the outer anchorage.
5. When entering, and before moving within, the port limits.
6. On departure.

Berthing schedules are broadcast on VHF channel 12 at 0630, 0730 (occasionally), and 1830.

Vessels bound for the JRD Tanker Terminal should send their initial ETA directly to the terminal as soon as it is known and confirmed 72 hours, 48 hours, and 24 hours in advance. All ETA and related messages should be sent via e-mail (jed-telex@aramco.com).

Signals.—Vessels not equipped with VHF, and in need of pilotage, should make the following signals, in addition to the usual flag signals:

1. From sunset to sunrise—use flash "G" by signal lamp.
2. In the event of poor visibility caused by rain, fog, or dust—sound "G" on the vessel's whistle. Vessels are reminded that this sound signal is in conflict with the International Regulations for Preventing Collisions at Sea.

When necessary, weather reports and information concerning aids to navigation are broadcast on VHF channel 12 following an announcement on VHF channel 16.

Contact Information.—Port Control can be contacted, as follows:

1.	Call sign:	Jeddah Port Control
2.	VHF:	VHF channels 9, 12, and 16
3.	Telephone:	966-12-6471200 966-12-6277000
4.	Facsimile:	966-12-6477411
5.	E-mail:	appointments-jip@ports.gov.sa

The JRD Tanker Terminal can be contacted on VHF channel 11 (general calling and operations) and VHF channel 73 (pilotage and berthing operations).

Anchorage.—Several anchorages, which should only be used with permission of Port Control, have been established off Jeddah, as follows:

1. Anchorage A lies W of Jeddah Ship Repair Yard and is to be used by authorized vessels only. The anchorage has general depths of 8 to 22m, over sand and shells.
2. Anchorage B lies E of Shib Qaham and is to be used by authorized vessels only. The anchorage has general depths of 18 to 49m, over coral, mud, sand, and shells, although there are isolated charted depths of 10.1m and 9.0m in its NW and SE corners, respectively.
3. Anchorage W1, a cargo-working anchorage, lies between Abu Harith and the shoals extending S of Irq al Lit. The anchorage has general depths of 16 to 35m, over coral, mud, sand, and shells and may not be entered or left without a pilot.
4. Anchorage C lies E of Kharrubah al Bahriyah and is for vessels carrying dangerous cargo. The anchorage has general depths of 25 to 60m, although there is an isolated charted depth of 16m in its NW corner.
5. Anchorage D lies E of Anchorage C and is for dry cargo vessels. The anchorage has general depths of 40 to 82m.
6. Anchorage E, containing four numbered berths, lies NW of Ash Shibayn and has general depths of 31 to 79m. The anchorage lies outside the port limits and is designated for use by tankers instructed by JRD Terminals.
7. Anchorage F, containing two numbered berths, lies close SSW of Abu Nalhah and has general depths of 17 to 48m. The anchorage lies outside the port limits and is designated for use by tankers instructed by JRD Terminals.
8. Anchorage M, containing two numbered berths, lies close SE of Shib Mismari and has general depths of 30 to 50m although there are isolated charted depths of 19m in its NW and NE corners. The anchorage lies outside the port limits and is designated for use by tankers instructed by JRD Terminals.

Caution should be exercised when using these anchorages, particularly those within the outer reefs. There is an area in the E section of Anchorage D where coral heads are known to exist.

Several anchors have been lost to the foul ground in the vicinity of Anchorage A. Numerous unmarked reefs border the inner anchorages.

A shoal patch, with a depth of 5m, lies close outside the NE corner of Anchorage B.

Prohibited anchoring areas have been established S and NW

of Anchorage E.

Directions.—In the approach to Jeddah, the turn should be made from a position well out to sea from about 30 minutes before to 30 minutes after sunrise at a distance of about 30 to 40 miles W of Jeddah. At this time, the mountains in the vicinity can occasionally be clearly distinguished and a reliable fix obtained.

Jabal Hadda will be the most prominent landmark, followed by the buildings at Jeddah, but in thick weather, which is common during the summer, these buildings can be seen only from a short distance.

The best time for entering is toward noon, as then the sunken reefs appear as dark green shadows on the surface. When the sun is low, or in thick, hazy, or cloudy weather, the reefs are not visible until close to them. Caution should be exercised when entering or leaving the anchorages, as the turns are sharp.

Caution.—Care should be taken when making Jeddah because of the variable and strong currents in the approach, and the excessive refraction sometimes encountered in these waters.

Two extensive reefs have been reported to exist between position 21°21.7'N, 38°48'E and position 21°26'N, 38°54.7'E. Although the existence of these reefs has not been proven, vessels should exercise the appropriate caution in the general vicinity.

The beacons and buoys are frequently washed away and cannot be depended on.

Conspicuous wrecks lie on Shib Qahan and Shib Jeddah, about 0.5 mile SSW. Another conspicuous wreck lies on a reef about 2 miles SE of Shib Qahan. Caution should be exercised in identifying these wrecks, as some have been reported to resemble vessels at anchor.

Radar should be used with caution because of the difficulty in identifying targets. The large number of vessels in the anchorage obscures landmarks and confuses the radar picture.

Vessels should give a good berth to all reefs in the vicinity of Jeddah.

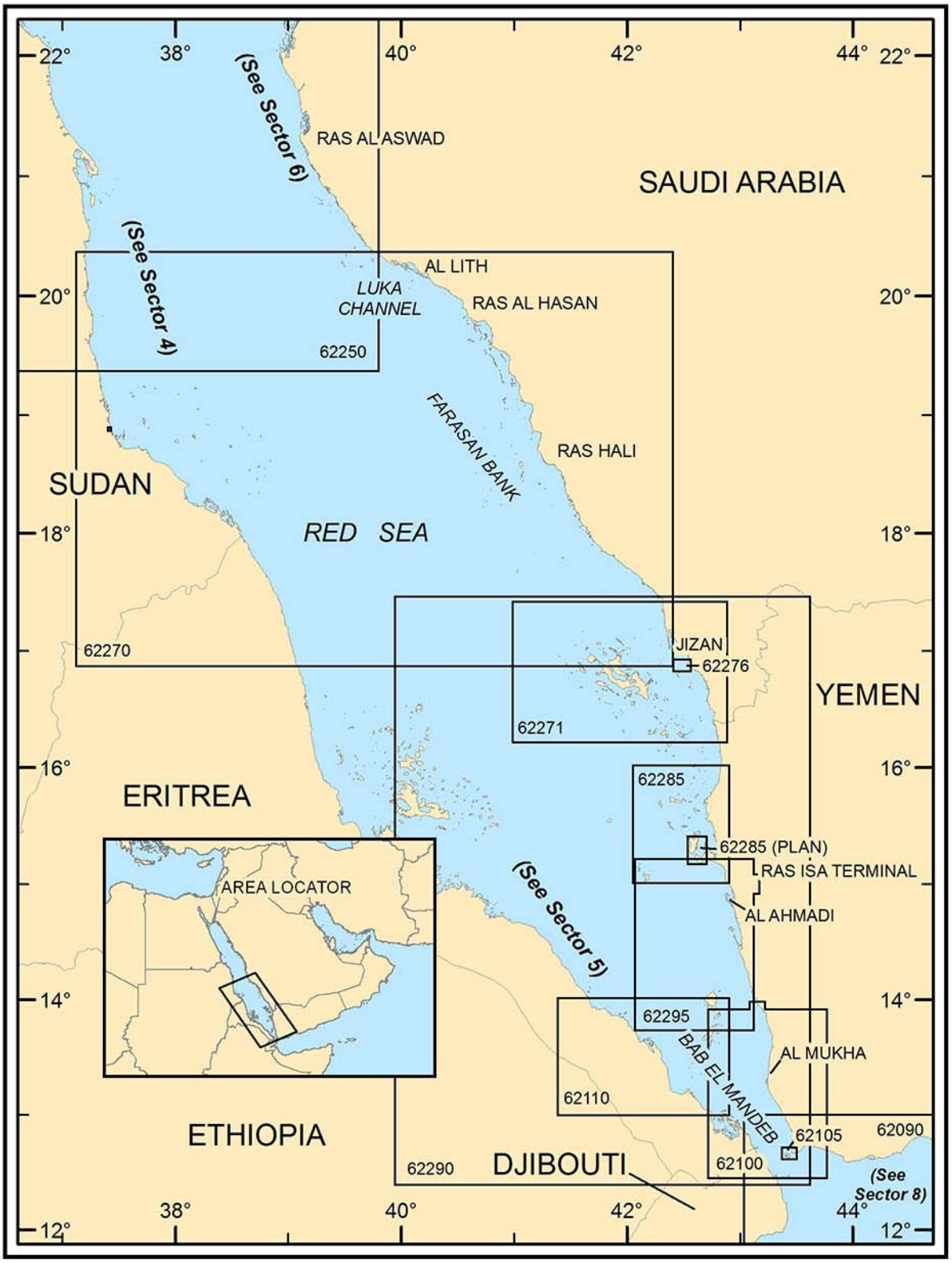
Uncharted reefs may exist inside the 100m curve. Vessels are advised to use caution when transiting this area.

6.36 Shib Mismari (21°20'N., 39°02'E.), which dries, is marked by a light. The sea is reported to break on the W edge of the reef occasionally.

Close N of the reef lies a detached shoal, with depths of 1.8 to 10.9m, which breaks in strong W winds.

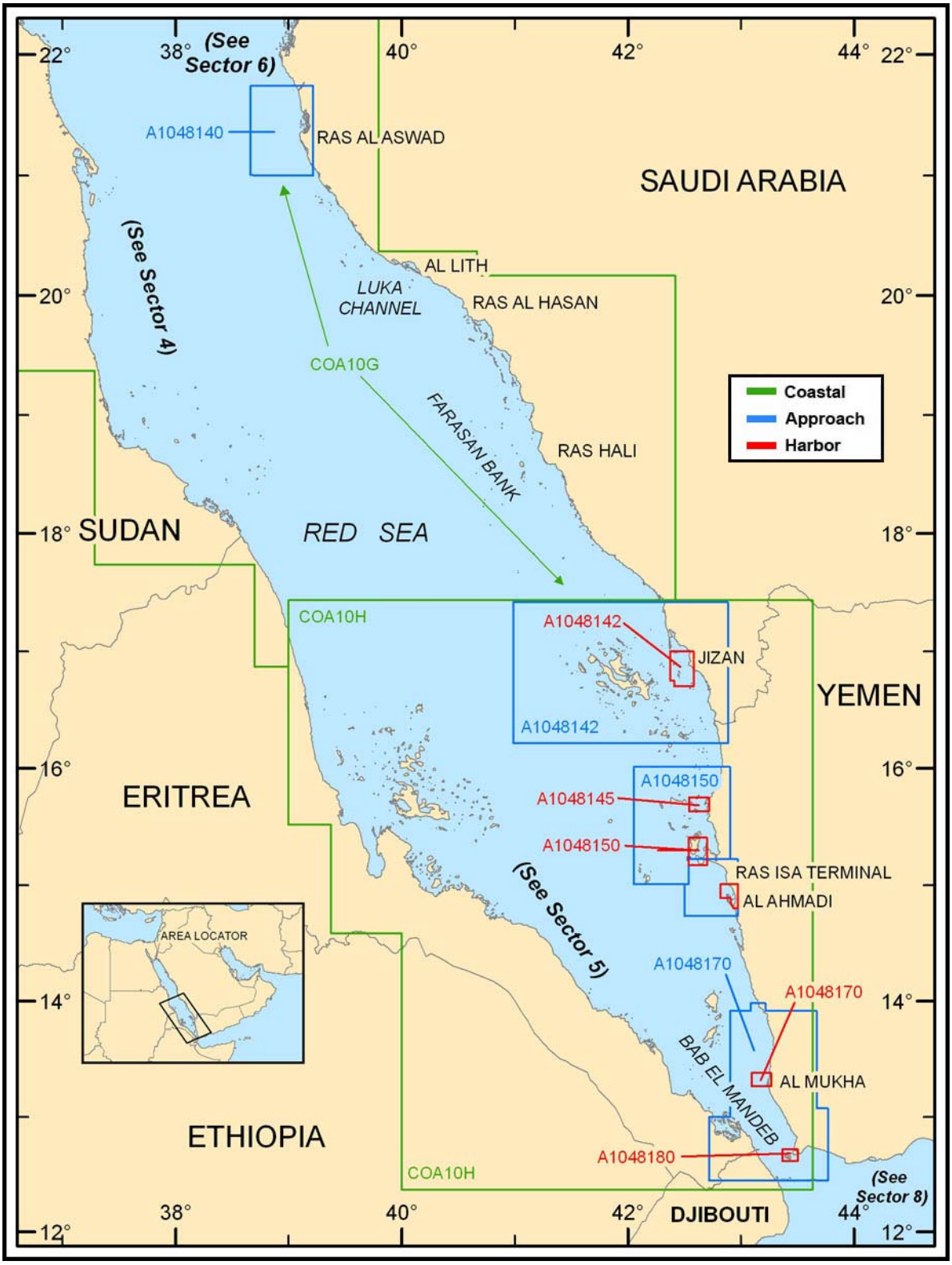
A dangerous wreck is charted about 1 mile N of the light on the reef. A 3.6m patch, which seldom breaks, lies 0.3 mile ENE of Mismari Reef.

Al Hazem Oil Terminal (21°11'N., 39°10'E.) is under construction 17 miles S of Jeddah to serve the Jeddah South Thermal Power Plant. The terminal consists of two berths, with associated mooring dolphins, and a basin dredged (2016) to 18m. Pilots board in position 21°08.0'N, 39°06.5'E. The terminal is approached from the SW through a channel marked by lighted buoys and leading NE from the pilot boarding position for about 3.5 miles.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR 7 — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 7

THE RED SEA—EAST SIDE—JEDDAH TO RAS BAB AL MANDEB

Plan.—This sector describes the E side of the Red Sea between Ras al Aswad, the S entrance of the port of Jeddah, and Ras Bab al Mandeb, the SE entrance of the Red Sea. This sector first describes the coast between Ar Ras al Aswad and Al Lith, followed by a description of Farasan Bank.

The inner channels E of Farasan Bank between Al Lith and Ras al Bayad are next described. The coast between Ras Isa and Ras Bab al Mandeb is then described. The general sequence of description is from N to S.

General Remarks

7.1 The main range behind Mecca (Makkah) trends in a general SSE direction. That part of this range from NE to ESE of **Al Lith** (20°09'N., 40°16'E.) is a lofty escarpment, 1,829 to 2,134m high, and from 40 to 50 miles inland. It is the principal watershed of this country and falls abruptly to an intricate mass of hills and valleys, that are seldom seen from seaward.

The coastal ranges are from 610 to 1,219m high and have numerous well-defined peaks. These ranges fall steeply to a low area extending to the coast. The plain is broken in places by conspicuous low hills, often visible from seaward when the coastal ranges are obscured by haze. This frequently occurs in summer and autumn.

Gulf of Aden Voluntary Reporting System.—A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Indian Ocean—Ship Reporting System.

Jeddah to Al Lith—Conspicuous Landmarks

7.2 **Jabal Abu Shawk** (20°55'N., 39°29'E.), about 33 miles SE of Ar Ras al Aswad and 10 miles inland, is a small double-knobbed hill.

The conspicuous **Jabal Sadiya** (20°45'N., 40°06'E.), about 37 miles NNW of Al Lith, is the highest part of a range that extends SSE for a distance of about 40 miles.

Close E of this peak is a still more remarkable peak which helps to identify Jabal Sadiya. A mountain with three peaks lies about 14 miles SSW of Jabal Sadiya.

Tower Hill (20°26'N., 40°00'E.), about 20 miles SSW of Jabal Sadiya, is conspicuous. It resembles a tower, but from SSE it appears as a rugged double peak and much larger than when seen from W. The high land S of Tower Hill shows as two round hills.

Jabal Ghala stands about 9 miles E of Tower Hill. About 2 miles SSW of Jabal Ghala is a hill, 582m high. Both of these have double peaks, which from W appear as the summits of two sloping mountains.

Jabal Bani Sad (20°37'N., 40°38'E.), about 35 miles NE of Al Lith, consists of a large isolated mass with three principal peaks. North Notch, the E peak, is precipitous on its N side.

The central peak is rounded in appearance and the W peak is conical. Another conical peak, 1,732m high, stands about 2 miles WSW of the latter.

Jabal Bujalah, about 9 miles SW of North Notch, is a pair of wedge-shaped peaks, the highest of which is 1,432m high.

Jabal Unsar, about 15 miles E of North Notch, shows over the main escarpment.

Jabal Shifa (20°35'N., 40°56'E.), in the main escarpment about 3 miles S of Jabal Unsar, rises in two pyramidal peaks. On N bearings it presents a well-defined notch with a break in the cliff close E. Jabal Ibrahim, on the escarpment about 16 miles SE of Jabal Shifa, presents two peaks that are divided by a nick. The highest peak is a sharp pinnacle.

Jabal Hajra (20°14'N., 41°12'E.) stands about 11 miles SSE of Jabal Ibrahim; its N side falls steeply in two steps.

Jabal Surra is the name of the escarpment from Jabal Hajra to a point about 18 miles SSE, where the range turns E.

Jabal Dauqa (19°50'N., 41°18'E.) is a conspicuous group of pinnacles S of and isolated from the S end of Jabal Surra. Its summit is a sharp peak. Another pinnacle, 2,192m high, is a truncated cone with a peak resembling a chimney. A pair of pinnacles, the higher being 1,821m high, stand on the N end of the group.

7.3 **Jabal Umm Kurha** (20°28'N., 40°46'E.), one of the lesser coastal ranges, is about 35 miles NE of Al Lith. It consists of a remarkable mass of red granite domes and pinnacles. It is seldom visible from seaward, but the summit can sometimes be seen in the morning when the lower hills are obscured by haze.

Jabal Umar, about 6 miles SSW of Jabal Umm Kurha, has two conspicuous peaks, resembling the ears of a pig. There are also several lower peaks. South Notch, about 6 miles S of Jabal Umar, is the N end of a red granite range, which extends about 5 miles SE.

Jabal al Aswadain (20°09'N., 40°50'E.), about 8 miles SE of South Notch, consists of three dark hills, it appears on most bearings as a saddle between two peaks.

Jabal Muzairah stands in the middle of a break in the range between Jabal al Aswadain and Jabal Nakhra, about 13 miles SSE. A bold summit with three peaks stands about 9 miles NE of Jabal al Aswadain. The W peak, a conspicuous smooth pinnacle, is visible through the break.

Jabal Bani Salim (19°53'N., 40°58'E.), S of Jibal Nakhra, is a range extending about 5 miles S. Its N peak has a conspicuous spike on its S shoulder. To the SE of Jabal Bani Salim are numerous low hills.

Jabal Nadesh (19°58'N., 41°10'E.), about 11 miles E of Jabal Nakhra, is visible through a break in the low hills. Its lower peak is 1,353m high, but there is a much higher peak, with a detached pillar rock, farther inland. Jabal Shadi, about 17 miles SE of Jabal Bani Salim, appears as two flat-topped ridges, the W one being 1,141m high. The hills in the coastal plain more

often visible than the high land inland are probably more useful for navigation.

Jabal al Jabbara (20°18'N., 40°30'E.), about 17 miles NE of Al Lith, is prominent and triple-peaked. A range of coastal hills extends between Jabal al Jabbarah and a 167m peak about 10 miles S. This latter peak is isolated and a good mark. Hills, about 152 to 183m high, extend about 8 miles SE from the above 167m peak.

There are several isolated knolls and small peaks as far as 9 miles SE of the above hills.

A knoll shaped like a beehive, 89m high, stands about 2 miles SSW of these hills. A 113m peak, with two small mounds at its base, rises about 4 miles farther SE; **Twin Cones** (20°03'N., 40°46'E.), a small double peak, rises about 8 miles ESE of the range.

Sugarloaf (19°59'N., 40°46'E.) is a sharp cone about 4 miles S of Twin Cones. A lower mound stands N of Sugarloaf.

Jeddah to Al Lith

7.4 **Ar Ras al Aswad** (21°22'N., 39°08'E.), the S entrance of the port of Jeddah, is the N extremity of a low sandy projection which extends about 2 miles N from the coast. Radio masts showing aircraft warning lights are reported to lie 2 miles S of the point.

The coast between Ar Ras al Aswad and Abu Shawk, 32 miles SSE, is low and is fringed by a reef which extends over 1 mile offshore in places. Many detached reefs lie off this stretch of coast.

Sumaymah (Sumaima) (21°14'N., 39°08'E.), a break in the coastal reef, affords moderately-sheltered anchorage from S winds, but is open to NW winds. The N entrance is encumbered with discolored patches and mariners should use caution in this area.

An entrance near the SW side of the reef is marked by a rock, 1m high. This rock stands on the reef on the S side of the entrance. This entrance is about 0.4 mile wide, but it is necessary to keep in mid-channel as isolated patches, which do not break, lie off the reefs on each side of the entrance.

Anchorage.—Anchorage can be taken, in 31m, mud, with the above 1m rock bearing 214°, distant 0.4 mile. Four radar conspicuous radio masts, marked at their tops by white quick flashing lights, are reported to stand near the coast in the vicinity of Sumaymah; conspicuous 72m high towers lie 8 miles farther SSE.

Caution.—A bank, on which several dangers lie, extends about 24 miles SSE from a position about 8 miles W of Sumaymah.

7.5 The coast between Sarum, about 6 miles S of Sumaymah, and Damrur, about 12 miles farther S, is a series of lagoons divided by sand spits and islets. The coral reef which fronts these lagoons has a depth of 0.3 to 0.6m.

The deep channel between this bank and the coast is easy to follow in daylight by keeping about 1 mile off the coastal reef, which is visible. Fixes by bearings, however, cannot be relied on.

Kobbein Reef (Shib Qubbayn) (21°11'N., 39°02'E.), with depths of less than 1.8m, lies on the NE side of this bank, about 6 miles WSW of Sumaymah. A small wreck, with its superstructure above water, is stranded 2 miles SE of Kobbein Reef.

Abu Shawk (20°52'N., 39°18'E.), an easily-identifiable bight lying about 5 miles SSE of Damrur, forms a good mark for making the open sea between Qita Kidan and Shiab Abu Shawk.

Makram (20°25'N., 39°40'E.) lies about 32 miles SSE of Abu Shawk.

Shib Shajah (20°21'N., 39°34'E.), consisting of two parts and with depths of less than 1.8m, lies about 5 miles WSW of Makram. A similar reef lies about 7 miles W of Makram. A bank, with depths of 9.1m, was reported to extend approximately 5 miles NW of this reef.

Qadd Humais (20°17'N., 39°29'E.), a series of low sandy islets, lie about 15 miles SW of Makram.

Harkat (20°20'N., 39°46'E.), 8 miles SE of Makram, can be identified by a conspicuous tomb on a hill. Anchorage can be taken close S of the shoals off Harkat, in depths of 27.4 to 29.3m, sheltered somewhat from W winds.

7.6 **Marsa Qishran** (20°15'N., 39°55'E.), located 10 miles SE of Harkat, between the W end of the island of Qishran and the coast, has a bar with a least depth of 5.5m, but it is studded with rocks on either side of the entrance.

Anchorage can be taken SW of Marsa Qishran, in 46 to 86m, about 2 miles offshore. Anchorage can also be taken, in 11m, mud, in a bight W of an islet on the W end of Shib al Jiffin.

Al Lith (20°09'N., 40°16'E.) lies about 1 mile inland and is composed mainly of low mud houses and conical straw huts.

The mosque and a large two-story building in the town are the only objects conspicuous from seaward. Some ruined barracks, with a tower at their S end, about 2 miles W of Al Lith, are also conspicuous. There is a thick grove of palms N of the town.

Marsa Ibrahim (20°09'N., 40°13'E.), about 1 miles W of Al Lith, is entered between the two W of the three detached reefs fronting the entrance. These reefs will be clearly visible when the sun is in a favorable position. It was reported that a depth of 7.3m existed in this channel.

Several patches, with depths of 3.6 to 5.5m, lie within about 1 mile SSE of the detached reefs. A few buildings, some in ruins, stand on the NW side of the entrance.

Anchorage.—Small vessels can anchor, in 8.7m, good holding ground, N of the two E detached reefs.

Large vessels can anchor WSW of Marsa Ibrahim, in 20m, sand and coral, with the center of a low islet about 0.5 mile S of the E end of Daama, an island located 4 miles WNW of Al Lith, bearing 005°.

There is no shelter, however, from NW winds. The above islet, which is low and covered with scrub, is fringed by a reef extending as far as 0.2 mile W.

Farasan Bank

7.7 Farasan Bank parallels the coast for about 300 miles S of Al Lith, and has a general width of about 50 miles. This bank is so encumbered with imperfectly charted reefs that it is dangerous to cross throughout the greater part of its length.

It should also be kept in mind that uncharted reefs may exist anywhere in this area.

There appears to be numerous coral reefs on the N part of the

bank, separated in some places by deep channels, 5 to 6 miles wide. The reefs were reported clearly visible.

The reefs in this part of the Red Sea differ from the off-lying reefs near the coast in that they are more regularly defined, light in color, and usually steep-to.

There are channels among the islands and reefs on the broad part of Farasan Bank between the parallels of about 18°N, and 17°N. They are seldom used because of their great depth and distance off the coast.

Caution.—Mariners are advised that uncharted coral heads exist within Farasan Bank. The only recommended marked channel is the Gizan North Approach Route.

If it becomes necessary to pass from seaward to the Inner Channels, a vessel should ascertain her position, and approach the bank when there is sufficient daylight to cross.

A good lookout should be kept for the sunken patches, some of which can be seen only in clear weather with the sun astern.

7.8 Jazirat Abu Latt (19°58'N., 40°08'E.), the N island on Farasan Bank, rises to a height of 30m near its S end. The SE part of this island is rugged and the SW part is precipitous. A conspicuous isolated conical rock, 28m high, stands on the SW side of the island. To the N of this rock, the island is low and sandy, with many rocky knolls from 3 to 6.1m high.

The island is fringed by a drying reef, which extends as far as 1 mile from its SW side. An islet, 8m high, and a small cay, over which the sea breaks, lie off the SW side of the island on this fringing reef. On the reef fringing the NE side of the island are three steep islets, one of which is 15.2m high. To the S of these islets and nearer the island is a conspicuous mushroom-shaped rock. A 4.5m patch lies about 0.5 mile N of the N end of Jazirat Abu Latt.

Shib Sahabak (19°54'N., 40°00'E.) is about 8 miles in length and has two drying patches near its S end. These patches are brown and conspicuous. Shib Sulaim, close NE of Shib Sahabak, is about 3 miles in length and has several drying patches on it.

The positions of these reefs W of Jazirat Abu Latt are doubtful. The currents are strong and uncertain in direction, and the depths are too great for anchoring. Caution is necessary when navigating in this vicinity.

Marmar (19°50'N., 39°56'E.), about 13 miles SW of Jazirat Abu Latt, is low and fringed by a reef. There is a conspicuous clump of bushes near the SW extremity of Marmar.

Dohra, about 2 miles W of Marmar, is low, covered with scrub, and fringed by a reef. Al Jadir, about 3 miles SSE of Marmar, is barren, sandy, and bordered by a reef. Malathu Island, about 5 miles SSW of Marmar, is small, low, sandy, and barren. This island, fringed by a reef, has a whitish appearance and can be identified by some white graves.

Danak (19°31'N., 40°02'E.), which is fringed by a reef, is 4m high and bushy. Two cairns, 3m high, stand on the N and SE sides, respectively, of Danak.

7.9 Jabbara (19°26'N., 40°04'E.) is a low, sand and coral islet, bordered by a steep-to reef. Shib al Madhun, with a small sand cay, lies about 2 miles NE of Jabbara.

Shib as Saqa, with a rocky islet, lies about 4 miles SSE of Jabbara.

Shakir (Shaker Island) (18°52'N., 40°25'E.) is a low and sandy islet with some bushes. It lies on a low coral reef and is steep-to on its N side.

Ring Reef (18°58'N., 40°22'E.), about 5 miles N of Shakir, is composed of coral. The sea breaks over its outer edge.

Tidhkar (Tedkar Island) (18°57'N., 40°36'E.), about 12 miles ENE of Shakir, is small and low, with a few bushes, and is fringed by a reef.

Muska, another small and low islet, lies on a steep-to coral reef, about 5 miles S of Tidhkar. Dusaqrya, a low islet, lies about 6 miles ESE of Tidhkar.

Sharbain (18°44'N., 40°37'E.) is a low, sand and coral islet with a few bushes. Dorish, about 13 miles SSE of Sharbain, is a low, sandy islet, covered with bushes and also fringed by a reef. Shib Abu Saiyal lies SE of Dorish. The sea breaks over it.

Maghabiyah (18°15'N., 40°45'E.) and Jazrat Sabiyah, about 2 miles NE, are low, coral and sand islets. Jazirat Al Halah, a small sand cay, lies about 2 miles SSW of Maghabiyah. A low sand bank and two reefs have been seen NE of these islets. Farther N, Farasan Bank appears to be full of shoal patches.

7.10 Mafsubber Island (18°14'N., 40°53'E.) is fringed by a reef. A conspicuous wreck lies in an approximate position on a detached reef lying about 4 miles SW of Mafsubber Island.

Zuqaq (18°04'N., 40°48'E.), lying 11 miles SSW of Mafsubber Island, is a low sand bank. Shib Maras is a group that extends about 8 miles SSE from a position about 2 miles SE of Zuqaq; the sea breaks on its N and S parts.

Dahret Abu Masali is a low sandbank about 3 miles SE of Zuqaq. Shib Rabid is a small rocky patch about 3 miles N of Dahret Abu Masali. A similar patch lies about 1 mile SW of Shib Rabid. The sea breaks on both these patches.

Dahret Maraya are two small sandy islets about 6.5 to 9 miles, respectively, E of Dahret Abu Masali; the E islet is fringed by a reef A rocky patch lies midway between the two islets; two rocky patches lie close SW of the W islet.

A shoal, on which there are several pointed rocks with a least depth of 3.6m, lies midway between the S end of Shab Maras and the W islet of Dahret Maraya. To the E and ESE of Dahret Maraya are numerous rocky patches.

Wasaliyat Islets (17°41'N., 40°55'E.), lying on a coral shoal, are low and sandy.

7.11 Shib Farasan (16°40'N., 41°30'E.), a bank with many islands, shoals, and rocky patches, lies near the W edge of Farasan Bank and fronts Jazair Farasan. It extends about 60 miles in a SE and NW direction and is from 8 to 18 miles in width. No known navigable channel exists across Shib Farasan, but between it and Jazair Farasan is a deep channel 2 to 5 miles wide.

Al Baghlah (16°57'N., 41°21'E.), the N island on Shib Farasan, lies on the N part of a reef. A lighted beacon marks the island. Dhi Dahaya, low and sandy, lies about 5 miles SE of Al Baghlah. Close SE of Dhi Dahaya is another low and sandy islet. The three Stewart Islets lie about 22 miles SE of Dhi Dahaya.

Marrak (16°24'N., 41°51'E.), the S island on Shib Farasan, is low and ill-defined. It lies on a shoal which extends about 3 miles N and 1.5 miles S.

Tawasila and Cayte lie on the N edge of this shoal. Marrak is reported to give a good radar return up to a distance of 19

miles.

An islet lies on a shoal about 7 miles N of Marrak. A wreck, which had two masts and the bridge showing, lies stranded close E of the islet lying on the shoal.

7.12 Jazair Farasan (16°45'N., 42°00'E.), E of Shib Farasan, is a group containing the largest islands on the E side of the Red Sea. Farasan al Kabir and Sajid, the two largest, are connected by a shallow spit. They are of considerable height and interspersed with plains and valleys.

Jabal al Qasr, about 5 miles NNW of Ras Abarah, the SE extremity of Farasan al Kabir, is the most conspicuous hill on the above two islands.

Jabal Shidda, a conspicuous bluff about 7 miles WNW of Ras Abarah, appears wedge-shaped on some bearings, but on N bearings shows as a hummock with that has a peak in the middle.

Matrahayn (17°09'N., 41°37'E.), the NW islet of Jazair Farasan, is formed by a small group of rocks about 3m high.

Wishka (17°01'N., 41°36'E.) is 18.3m high, composed of sand and coral, and fringed by a reef with several rocks. Jabal Muhammad, about 5 miles ENE of Wishka, rises in its E part to a wedge-shaped hill, 46m high.

Ad Dissan (16°55'N., 41°39'E.) is a flat island gradually rising toward the center. Jabal Dissan, a conspicuous hummock, 67m high, rises in the S part of Ad Dissan. A cairn stands on the S side of the island. The island lies on a shoal bank, on which are several islets. A conspicuous rock lies on this shoal bank off the SW side of the island.

Safan, 12m high, lies close off the N extremity of Ad Dissan, and is separated from it by a narrow channel.

Farasan al Kabir (16°42'N., 42°00'E.), extending SE from Ras Farasan, its NW extremity, is high and rocky. A 75m hill stands about 6 miles SSE of Ras Farasan. There is anchorage for dhows off the coast NW of this hill.

7.13 Janabah Bay (Genaba Bay) (16°40'N., 42°03'E.), on the S side of Farasan al Kabir, affords sheltered anchorage in its E part. The bay, with general depths of 12.8 to 36.6m, is entered via a clear passage, about 2 miles wide.

The coast between the SE entrance of Janabah Bay and Ras Abarah, 6 miles ESE, is low. About midway along the E coast of the island, the village of Farasan lies about 2 miles inland.

A fort, in ruins, stands about 0.4 mile NW of the village. Khella, a small fishing village and the port for Farasan al Kabir, lies on the coast N of Farasan.

In the anchorage off this village it is inadvisable to anchor in less than 36.6m as the bottom appears to be uneven. The fort is a good mark for approaching this anchorage from N.

A bank, on which lies many islets and dangers, extends about 6 miles E, then 8 miles N from the middle of the E side of Farasan al Kabir.

Abulad Islets (16°48'N., 42°09'E.), with many dangerous patches N, lie near the N end of this bank; there is a conspicuous knob on the S end of the central islet of this group.

North Sulain and South Sulain, with a smaller group close S, lie about 2 miles SSE of Abulad Islets. The latter islet is the highest in the vicinity, and has a flat summit with a fort.

The coast between Ras al Jass, the N extremity of Farasan al Kabir, and Al Qabr, about 6 miles SSW, is fringed by a reef. This reef extends about 4 miles N from Ras al Jass; a shoal with depths of 3.6 to 5.5m extends about 1.5 miles farther NW.

Seil Sherra Saghir and Seil Sherra Kabir lie on this reef about 2 miles, respectively, WNW and NW of Ras al Jass.

Al Qabr is approached through a narrow, tortuous channel between the reefs. The fairway is encumbered with rocks and has a least depth of 5.5m.

Sajid (16°52'N., 41°52'E.) lies in a bight on the N side of Farasan al Kabir. A narrow promontory, fronted on both sides by several islets, extends N and WNW from the N part of the island, and terminates in Ras Rasib.

Khawr Sajid (16°50'N., 41°57'E.), on the E side of Sajid, has depths of 16.5 to 23.8m and affords complete shelter. The shores of the bay are fringed by a reef, which has a small opening, about 16m wide, on its NW side. The village of Segid and a grove of date trees stand on the NW shore of the bay. The houses in the village are in ruins.

East Mandhar Island (16°51'N., 41°58'E.), on the S side of the entrance of Khawr Sajid, rises to a height of 30m in Jabal Mandhar. The island lies on the edge of the coastal reef extending from the S side of Sajid. Duff Islet lies about 0.5 mile S of the N entrance of the bay; about 0.5 mile farther SW is a rocky patch with a depth less than 1.8m.

The channel leading into Khawr Sajid has a least width of 0.2 mile in a least depth of 10.9m.

Sayr Abd (Seil Abadho) (17°01'N., 42°02'E.) is about 6.1m high, small, and mushroom-shaped.

7.14 Kaira (16°47'N., 41°42'E.), rather high and wooded, lies about 6 miles SSW of Ras Rarasan, the NW extremity of Farasan al Kabir. Zufaf, about 3 miles S of Kaira, is high and conspicuous. A conspicuous sand spit is located close E of a 30m hill about 1 mile NNW of the SE extremity of the island; a conspicuous white cliff lies about 2 miles farther NW.

Doewa Reef, with a least depth of 1.8m, extends about 2 miles NW from a position about 0.5 mile NE of the SE extremity of the island.

An inlet lies on the NE side of Zufaf. The entrance of the inlet, between Doewa Reef and the SE end of a shoal marked by a beacon 1.8m high, extending SE from the NE entrance of the inlet, is about 0.5 mile wide and has a least depth of 10.9m.

A rock, awash, lies about 0.3 mile S of the N entrance of the inlet and is marked by a beacon. About 0.4 mile farther W, two beacons stand close W and S, respectively, of a small islet.

Anchorage.—Anchorage has been taken, in 18.3m, about 0.2 mile N of the N end of Zufaf. Anchorage can also be taken, in less than 36.6m, W and NW of Doewa Reef.

7.15 Akbar Uqayli (16°37'N., 41°53'E.) is high and fringed by a reef. Salubah and Dumsuq lie on the NW and SE ends, respectively, of a shallow bank, about 8 miles in length, SE of Akbar Uqayli. The former is high while the latter, also high, is almost divided in half by a narrow inlet.

Qummah (Kumh) (16°38'N., 42°00'E.), fronting the entrance of Janabah Bay, has an inlet on its S side. The island is steep-to on its NE and E sides, but is fringed by a reef on its SW side. A peak, about 27m high, on the W side of the inlet, is conspicuous.

The shores of the inlet are rocky and steep-to for about 1 mile within its entrance. There is a shallow bight about 0.5

mile within the entrance, on the W side of the inlet.

The N entrance point of this bight is formed by a series of peculiar rocks, which are a good mark for entering the inlet.

Anchorage.—Good anchorage can be taken in this inlet, in 14.6 to 16.5m, with a point about 1 mile within the E entrance point, bearing 071°.

7.16 Strawbridge Strait (16°35'N., 42°17'E.) lies W of the extensive bank on which Masaqif and Zahrat Sumayr lie; the depths in the strait were reported to be 3.6m.

Sumayr (16°30'N., 42°13'E.), small and low, lies about 6 miles SE of Ras Abarah; a reef extends about 2 miles WNW from it. A rock, with a depth of less than 1.8m, lies about 2 miles S of Sumayr.

Passage through the strait should not be attempted without local knowledge. Dangerous rocks are charted in the S entrance of the strait.

Zahrat Sumayr (16°28'N., 42°16'E.), low and fringed by a reef, lies on the SW side of the extensive bank mentioned above about 3 miles SE of Sumayr. This bank, on which are numerous shoal and rocky patches, extends about 6 miles SSE and 12.5 miles NNE, respectively, from Zahrat Sumayr.

Masaqif, about 7 miles NNE of Zahrat Sumayr, consists of three low islets. A wreck, with the hull, stack, and two masts showing, lies stranded about 2 miles SSW of Zahrat Sumayr; this wreck was reported conspicuous many years ago.

Duharab (16°17'N., 41°57'E.), lying about 21 miles SW of Ras Abarah, is low, sandy, and surrounded, within 1.5 miles, by rocky shoals. A conspicuous wreck, the position of which is approximate, lies about 2 miles SSE of the island. The forecastle and stack of the wreck was showing and appeared as a vessel approaching from S.

7.17 Rumayn (16°24'N., 42°14'E.) is sandy and highest at its NW end. The island is fringed by a reef and some shoal heads, which show well, lie from 1.5 to 2.5 miles E.

Murain (Maran Islet) about 3 miles SE of Rumayn, lies on the N edge of a reef, and has a white cross on its NE extremity. Barri and Rafa Barri, lying on the SW part of this bank, are not as conspicuous as the dark rocky islets in the vicinity. Both islands are fringed by reefs.

Juzur Duqaylah (Dugaila Islands) (16°17'N., 42°28'E.) lie on the SW side of a shoal. The NW island, with a small village and mosque, is about 9m high, while the SE island is about 27m high.

Anchorage.—Anchorage can be taken, in 5.0m, off the NW side of the NW island.

7.18 Jazirat al Bayda, about 2 miles ESE of Juzur Duqaylah, is high and prominent. Some rocky islets lie within 1 mile N through W of Jazirat al Bayda. A reef, nearly awash, extends about 2 miles N from a position about 0.4 mile SE of Jazirat al Bayda. Jabal Jink and Maflaqayn, both of which are high and rocky, lie on a reef about 2 miles SW of the larger of the Jazur Duqaylah.

Jazirat Fasht (16°10'N., 42°21'E.) is high and has a village and a mosque in its center. A reef, over which the sea breaks, extends about 5 miles S from Jazirat Fasht. Two islets lie on this reef.

Sana Island (16°07'N., 42°15'E.), about 5 miles WSW of Jazirat Fasht, is low, white, and sandy. A 5.5m shoal extends as far as 0.5 mile NE and 1.5 miles SE from Sana Island.

Lubwan (Loban Island) (15°53'N., 42°17'E.) is bordered by underhung cliffs, about 3m high, and shows up well. Landing is possible only in calm weather.

Inner Channels East of Farasan Bank

7.19 The Inner Channels on the E side of the Red Sea extend from Al Lith to **Khalij Kamaran** (15°25'N., 42°40'E.). The channel, which is encumbered with many dangers, is from 0.5 mile to 12 miles wide and affords good anchorage.

Throughout the channels, the charts are in many places inaccurate and incomplete. Hazy weather frequently renders navigation difficult. From January to May, however, the visibility is very good, and the distant mountains often show well.

In winter and early spring, the water level is higher than in the summer, and though this difference is small, it has a considerable effect on the visibility of the reefs.

The reefs, which generally dry in summer, are covered in winter and show as light green-colored water. Sometimes the red or green discolorations caused by algae make the reef's discolorations less noticeable.

Winds—Weather.—From January to June, inclusive, NW winds prevail, but in the early part of the year, there are frequent days of calms, and light land and sea breezes. The weather is more unsettled in summer, and there are occasional W and SW gales. The sea then becomes confused in the Inner Channels and navigation is difficult.

Usually in the winter, it is calm in the morning and often freshens in the afternoon to a strong breeze, which falls at sunset.

From January to May, inclusive, there is practically no rain. It has been reported that rain fell only on one day during a survey made during these months.

The conditions become more unsettled toward the end of May; thick mists and haze as a result of heat are then common.

Tides—Currents.—The currents in the Inner Channels set mostly N from January to June, inclusive, when the prevailing wind is NW. If the winds are strong, the currents may for a short time set S, and on such occasions the water piles up in the narrow channels. The N set is greater when the wind falls, seldom attaining a velocity of more than 0.5 knot.

7.20 Lunka Channel (20°09'N., 40°07'E.) extends from the N approach to Al Lith to the entrance of Enterprise Channel, about 29 miles SE. The channel is entered between Qita Al Qursh and Shib Habil. It has a width of 0.5 to 1.5 miles and depths that appear to be 28 to 61m.

On the NE side of Lunka Channel, the coast is low and covered with scrub for a distance of about 4 miles SE of Al Lith. Then for a distance of about 9 miles ESE to Marsa Raka, the coast rises to a ridge of sand hills, of which North Raka, 21.3m high, and South Raka, 20.7m high, are the most conspicuous. Inland, a sandy plateau rises to numerous low hillocks.

A conspicuous clump of palms, 13.4m high, stands on the coast about 4 miles SSE of Al Lith. From SE, this group appears as two palms.

Shoals, with a least depth of 3.6m, extend about 4 miles SW from the coast from a position about 3 miles S of Al Lith.

Imogene Shoal, an 8.5m patch, is the SW of these shoals and shows as a patch of light green.

Raka Shoals (20°00'N., 40°25'E.), a group of well-defined reefs, some of which dry, extend about 3 miles SSW from South Raka. North Reef, on the W side of Raka Shoals, shows as a patch of light green.

Shib Mudharr, about 0.5 mile SE of North Reef, has depths of less than 1.8m, and is well-defined. A range of sandhills, 15.2 to 18.3m high, extends along the coast for a distance of about 7 miles ESE from South Raka; the coast then becomes low and sandy to Jalajil.

7.21 Shib Subaikha (19°56'N., 40°27'E.), about 6 miles SSE of South Raka, consists of two rocky patches with depths of less than 1.8m. The S patch is light green in color and generally visible; an 8.7m patch lies close W of the S patch.

On the SW side of Lunka Channel, there are numerous reefs and shoals lying between Qita al Qursh and Ghawwas Bank, about 25 miles SE.

Gordon Patches (19°55'N., 40°27'E.), about 0.5 mile SSW of the S end of Shib Subaikha, consists of several shoals with depths of 2m or less.

There is deep water between these shoals, but the water over them shows only a little discoloration.

Enterprise Channel (19°48'N., 40°33'E.), the continuation of Lunka Channel, extends from a position about 4 miles S of Jalajil, in a general SE direction, to a position about 4 miles W of Ras al Hasan, about 21 miles SE of Jalajil. The passage is from 0.5 mile to 2 miles in width between the shoals and has depths of 14.6 to 42m.

Jalajil (19°54'N., 40°32'E.), a point rising to dunes 7.6m high, has a conspicuous white cliff, 4.2m high, at its W extremity. The coastal reef extends about 2 miles NW from the point, and some detached reefs and shoals lie as far as 2 miles NNW of it. The sand dunes N of Jalajil are reported to give a good radar return.

The coast between Jalajil and Ras al Askar, about 5 miles SSE, is low and sandy. The latter point, covered with mangroves, is conspicuous, as it stands on the low ground where the Wadi Halya flows into the sea.

Shib al Farkan (19°39'N., 40°34'E.), with numerous coral heads, lies W of Ras al Askar and is separated by a narrow channel. This channel, which is less than 183m wide in places, is not recommended.

7.22 Qita al Auwal (19°50'N., 40°32'E.), on the NE side of the entrance of Enterprise Channel about 3 miles W of Ras al Askar, has a least depth of 4.2m. Shoals, with depths of 7.3 to 18.3m, lie between Jalajil and Qita al Auwal. Less water was reported over the shoals, which had extended 0.5 mile S.

Qita Ath Thani, on the SW side of this passage, is a group of shoals, with a least depth of 4.5m, lying about 3 miles WSW of Ras al Askar. Shib Auda, a conspicuous drying patch, lies at the W end of Shib al Farkan, about 2 miles W of Ras al Askar. Shoals extend about 0.3 mile NW and W from its N end. Qita al Bitan, about 3 miles SW of Ras al Askar, has a least depth of 3.0m and is clearly visible. Al Mafriqat, about 0.6 mile ESE of Qita al Bitan, dries. Shib Namis, about 2 miles S of Ras al Askar, dries and is steep-to.

Jinnabiyat (19°46'N., 40°35'E.), the largest and W of a group of islands fringed by reefs, is low, and covered with scrub and mangroves on its N side. A shoal, with a depth of less than 1.8m at its S end, lies about 0.5 mile NW of Jinnabiyat. Melma Islet, 2.4m high, lies close E of Jinnabiyat, and is connected with the latter by a narrow drying reef.

Two above-water rocks, covered with scrub, lie on a detached reef about 0.2 mile NE of Melma Islet. Muhammad Islet, the NE of the above group, is 2.1m high and has a conspicuous clump of bushes near its center. It is fringed by a reef which extends about 0.2 mile NW.

A 3.6m patch, with a depth of less than 1.8m at its SE end, lies about 0.3 mile N of Muhammad Islet. Qita Kashafi, with a least depth of 3.3m, lies about 0.3 mile SE of Muhammad Islet. Bar al Bahhar is the passage between the 3.6m patch N of Muhammad Islet and the shoals about 0.3 mile NE.

7.23 The coast between **Ras al Humara** (19°48'N., 40°37'E.) and Ras Kinnateis, about 5 miles SE, forms the SW side of a peninsula composed of low sand dunes, with a belt of mangroves on each side.

Sanak Islet (19°43'N., 40°38'E.), about 2 miles SW of Ras Kinnateis, is low, covered with scrub, and fringed by a reef, which extends about 0.5 mile W from the islet. The W edge of this reef is not clearly defined, and on its SW edge are a few coral heads above water.

Shib Belem, about 0.5 mile N of Sanak Islet, dries and is fairly conspicuous; a sand cay lies on Shib Belem. Shib Abyad, about 6 miles SSE of Sanak Islet, is white, conspicuous, and steep-to. It is the SW reef of a large area of foul ground extending E.

Sirrayn (Sirrain) (19°38'N., 40°37'E.) lies about 8 miles S of Jinnabiyat. A hill W of the summit is flat-topped, and between the two is a conspicuous truncated cone, about 30m high. The ends of the island are low. The W end of the island is marshy and has a few clumps of mangroves on its NE side.

The high ground consists generally of very rugged coral with a base of red sandstone outcropping on the S shore. Several shoal patches and numerous coral heads extend about 7 miles N from Sirrain. These dangers lie on the W side of the channel.

Directions.—All the reefs are clearly visible, but a good lookout aloft is necessary. From a position in the approach to Al Lith about 3 miles NE of Qita al Qursh, alter course to the SE to pass about 0.5 mile SW of Imogene Shoal.

From this position, make good a course to pass midway between Shib Subaikha and Gordon Patches and, when about 1 mile past these dangers, course can then be shaped for the entrance of Enterprise Channel.

From the entrance of Enterprise Channel, steer a SE course to a position about 3 miles SW of Ras al Askar, then an ESE course to Bab al Bahhar. Pass through Bab al Bahhar with the middle of Sanak Islet bearing 148° and, when the summit of Sirrayn bears 184°, steer for it on that bearing until past the 5.9m patch W of Sanak Islet. Course can then be shaped to the SSE, passing about 0.3 mile W of Shib Abyad.

It was reported that the passage N of Muhammad Islet appeared to be easier and preferable to Bab al Bahhar, as the two reefs on either side of Bab al Bahhar are difficult to see.

By keeping the reef fringing Muhammad Islet, which is usually clearly visible, close aboard, these reefs are avoided.

7.24 Wemyss Passage (19°46'N., 40°21'E.), from NE of Abu Latt, passes through Chisholm Passage, then SW and S of Ghawwas Bank, and finally NE between the shoals S of Jinnabiyat and N of Sirrayn into Enterprise Channel.

Al Qad al Wustani (20°02'N., 40°08'E.) dries and is clearly visible. The sea breaks on it during strong winds.

Shib Ghufra (19°47'N., 40°23'E.), on the SW end of Ghawwas Bank, is the only drying reef in the vicinity. It is light green in color, conspicuous, and steep-to on its SW side.

Dauglish Rock (19°42'N., 40°31'E.), about 6 miles NW of the W extremity of Sirrayn, has a depth of 9.1m; several shoal patches lie SW of this rock.

Shib Khadra (19°45'N., 40°32'E.), about 3 miles WSW of Jinnabiyat, dries. A sand cay, which sometimes shifts with the wind and sea, lies on this reef. Several detached patches of reef lie close S of Shib Khadra.

Directions.—Vessels approaching this passage from W should steer E on the parallel of 20°N, passing N of **Shib Janab** (19°55'N., 39°56'E.), Shib Sulaim, and Abu Latt.

If bound for Wemyss Passage from Al Lith, approach with the summit of Abu Latt bearing 185°, which leads clear of the shoals N of the island and E of Al Qad al Wustani.

When about 2 miles NE of Abu Latt on either of the above courses, alter course to the SE through Chisholm Passage, passing E of **Chisholm Rock** (19°54'N., 40°15'E.).

The drying reefs on either side of Chisholm Passage at this point are about 0.5 mile apart; the sea breaks on them during strong winds.

Continue on a SE heading, passing about 1 mile W of Shib Ghufra. From a position about 2 miles S of Shib Ghufra, make good an ESE course to a position about 2 miles S of Shib Khadra.

When Sanak Islet bears 090°, steer for it on that bearing until the SW extremity of Melma Islet bears 000°, then course should be altered to the NE into Enterprise Channel. Abu Latt and Sirrayn are good marks when using this passage. A good lookout must be kept for reefs; caution is necessary.

Ghubbat al Mahasin

7.25 Ghubbat al Mahasin (19°45'N., 40°43'E.), with general depths of 12.8 to 21.9m, is entered between Ras Kinnateis and Ras al Hasan, about 9 miles SE. A chain of low islets and coral reefs extends across the entrance, but between these are two navigable channels, one at the N end and the other at the S end.

The E side of the bay is low and backed by sand hills, about 6.1m high, which extend as far as a point about 3 miles NE of Ras al Hasan. Along the shore are some scattered clumps of mangroves. Groups of huts stand on the N and E sides of the bay.

Ras al Hasan (19°38'N., 40°46'E.), the N extremity of a narrow projection extending about 2 miles NNW from the coast, is low, sandy, and covered with scrub. On its seaward side is a clump of mangroves.

The ground rises steeply to a cliffy bluff, about 10.6m high. Zughaib Islet, on the coastal reef about 3 miles S of Ras al Hasan, is low, sandy, and scarcely visible.

Gheibisa Islet, Umm Ibsas Islet, and Minzak Islet lie about 1.5, 1.5, and 3.5 miles, respectively, SSE of Ras Kinnateis. They are all low and sandy; a mangrove bush on Umm Ibsas Islet is a good mark.

The Umm Al Gharaniq Islands, a group thickly bordered with mangroves, lie about 2 miles NNW of Ras al Hasan. Umm al Qandil, about 1 mile ENE of Ras Kinnateis, is low and bordered by a thick belt of mangroves. A reef extends about 0.5 mile E from its E extremity, and an above-water rock, covered with bushes, lies on the reef extending about 0.5 mile NNE from the islet.

Anchorage can be taken, in 12.8 to 14.6m, coral and mud, about 0.2 mile NE of the above rock. The N entrance of Ghubbat al Mahasin lies between Ras Kinnateis and Gheibisa Islet. A small drying reef in mid-channel divides the channel into two parts. The S part is about 0.1 mile wide and is recommended; the shoals in the N part are not clearly visible.

When entering this bay, vessels should keep the N side of the recommended channel close aboard to avoid a small detached drying reef close N of Gheibisa Islet.

The S entrance of the bay lies between the al Gharaniq Islands and Ras al Hasan. It is about 1 mile wide, and the reefs on each side are clearly visible. The point about 3 miles NE of Ras al Hasan, marked by a clump of mangroves, is a good mark in the approach.

Inner Channels (continued)

7.26 Between Ras al Hasan and Al Qunfudhah, about 35 miles SE, the Inner Channel continues in a SE direction, roughly paralleling the coast.

The **Nahud Islets** (19°33'N., 40°47'E.), on the NE side of the Inner Channel, lie on a reef about 5 miles S of Ras al Hasan. The N edge of this reef is usually visible.

Two reefs lie about 2 miles E and 4 miles ESE, respectively, of the Nahud Islets. There are reported to be patches, with depths of 11 to 14.6m, between these two reefs and the Nahud Islets.

Ghurab (19°30'N., 40°53'E.) is low and flat, with well-defined extremities. A chain of low, sandy islets and cays extends about 2 miles NNW and 2.5 miles SE, respectively, from the islets.

Safiq (19°32'N., 40°44'E.), on the SW side of the Inner Channel, lies about 7 miles SE of Sirrayn; it is low and sandy, with a few bushes. Detached reefs lie as far as 1.5 miles E of Safiq.

Umm Ali (19°31'N., 40°45'E.), close SE of the S end of Safiq, is thickly covered with bushes on its E end and is a good mark when seen from the N.

Abu Rukaba, with a conspicuous clump of bushes, lies about 0.5 mile off the middle of the E side of Long Island, the S of these islets. There are some conspicuous clumps of bushes near the N end of Long Island.

The **Fara Islands** (19°20'N., 40°50'E.), extending about 8 miles SSE from the S end of Long Island, are low and sandy. From N, they consist of Third Islet, Next Island, and Pelican Island.

Next Island is covered with bushes, and between it and Third Islet is a sand cay.

Pelican Island, 6.1 to 9.1m high, is conspicuous from S. On the E part of Pelican Island and around a lagoon on its S side are mangroves; the W part of this island is covered with dry

scrub.

A bushy islet lies on the edge of Farasan Bank about 0.3 mile ESE of Pelican Island.

Anchorage.—Good anchorage, in 18m, sand, can be taken off the NE side of Pelican Island; it is sheltered from W and SW winds. The entrance of Baghghalah Channel (Baggala Channel), which is used by native craft to cross Farasan Bank, is a break in the E side of Farasan Bank, about 2 miles SSE of Pelican Island.

7.27 Umm as Saifa (19°03'N., 41°02'E.), 2.4m high, low, sandy, and bushy, lies on the E edge of a reef extending about 0.4 mile S. A shoal, with a depth of 6.4m, extends about the same distance NW from the islet.

Directions.—From a position about 0.3 mile W of Shib Abyad, vessels should steer a SE course until Abu Rukaba bears 242°. Then alter course to the SSE from Umm as Saifa, passing about 1 mile W of Crawford Reef and 0.5 mile W of Cox Reef. These reefs lie W of Al Qunfudhah. Umm as Saifa is a good mark and is usually seen from some distance N of Crawford Reef and Cox Reef.

Al Qunfudhah (19°08'N., 41°04'E.) is a small town and consists chiefly of huts. From S, two minarets in the middle of the town and a tower about 0.5 mile S of it are conspicuous. A mosque with a minaret stands between the town and the tower.

A pier extends SW almost to the edge of the coastal reef S of the town, but it is not suitable for landing.

7.28 Crawford Reef (19°08'N., 41°01'E.), about 4 miles W of Al Qunfudhah, is awash and generally clearly visible. There is a small sand cay on the reef in the summer.

Cox Reef, about 4 miles WSW of Al Qunfudhah and about 2 miles S of Crawford Reef, has a least depth of 0.9m; it is difficult to distinguish until close.

The bay off Al Qunfudhah, fringed by reefs, lies between the extremity of a low projecting point about 2 miles N of the town and a low rounded point close S of the town.

The coastal reef extends about 0.4 mile W from the N entrance point; a shoal with a depth of 4.5m at its S end extends about 0.1 mile S from this reef. About 0.3 mile farther S is a detached drying reef; patches of reefs lie between this detached reef and the coast.

From close S of the S entrance point, a tongue of reef extends about 0.6 mile WNW.

A large detached reef, about 1 mile in length, lies close W of the S entrance point, and is separated from it by a passage filled with wrecks.

An islet, 2.7m high, with some bushes, stands on the E side of this reef.

Anchorage.—Anchorage can be taken, in about 9 to 11m, in the S part of the bay W of the town, from 0.5 to 0.7 mile offshore. It is sheltered from the S by the large detached reef with an islet on it.

Caution.—Vessels approaching the anchorage should pass about 0.3 mile S of Cox Reef and then steer NE for the entrance of the bay.

7.29 Ghubbat al Qina (19°04'N., 41°09'E.) is entered between Al Qunfudhah and Ras Makasir about 11 miles SSE.

The coast is low and fringed by reef. Some white sand hills, about 5m high, stand at the head of the bay.

A chain of reefs extend about 3 miles SSE from the S entrance of the bay off Al Qunfudhah; an islet, 1.5m high, lies on the S part of this reef. Sawle Reef, awash at very LW, lies about 1 mile WSW of the above islet.

Rouquette Reef, about 3 miles S of the same islet, dries. Shib Qina, about 3 miles E of Rouquette Reef, is a group of drying patches.

Ras Makasir (18°57'N., 41°07'E.) is the W end of a reef, which is connected to the coast by a drying mudflat. Reefs, the outer edges of which are clearly visible, extend about 1 mile NW from the point. Nares Reef and Purvis Reef, both of which dry, lie about 2 and 3 miles, respectively, NNW of Ras Makasir. A small detached reef, with a depth of 3.6m, at its W edge lies close W of Nares Reef.

7.30 Umm al Qamari Islets (18°58'N., 41°04'E.), about 5 miles SSE of Umm as Saifa, are two islets that are low, sandy, and covered with bushes. The E islet is 6m high, while the W islet is 3m high; the islets are fringed by a reef.

Cullinane Reef, nearly awash, lies about 0.5 mile N of the E islet. A 4.5m patch and a 3.6m patch lie close W and 0.4 mile SW, respectively, of the same islet.

To the W of a line drawn between Umm as Saifa and the W Umm al Qamari Islet are several shoal patches, which are usually visible, but some have not been examined.

Shib Ath Thalatha extends about 0.5 mile SSE from a position about 1 mile ESE of the W part of Umm al Qamari Islets. The two N parts of these three reefs have sand cays on them during most of the year.

The coast between Ras Makasir and Ras Abu Matnah, about 5 miles SSE, and Ras Abu Kalb, about 11 miles farther SSE, is low, sandy, and covered with scrub.

Ras Abu Matnah is fringed by a reef; a shoal, with a depth of 2.7m, extends about 2 miles S from the point.

Shib Aniker extends about 2 miles SW from a low point on the coast about 5 miles SSE of Ras Abu Kalb. Its outer edge is clearly defined, parts of it being awash at very LW.

Booth Patch and Salmond Patch, with depths of 3.6m and 4.5m, respectively, are difficult to distinguish. The former lies about 2 miles SW of Ras Makasir while the latter lies about 1 mile WSW of Ras Abu Matnah.

Mason Reefs (18°51'N., 41°02'E.) are a group of five patches with a least depth of 0.6m at their N end.

Shib Anda (18°51'N., 41°09'E.) extends from 1.5 to 2.5 miles S of Ras Abu Matnah. Near its N edge is a sand cay, awash at HW. This drying reef is steep-to, except at its S end, where coral heads extend about 1 mile SSW.

7.31 Pettis Reef (18°48'N., 41°09'E.), which dries, lies about 5 miles SSW of Ras Abu Matnah; several large boulders lie on the E edge of this reef. Shoals, with depths of 3.6 to 5.5m, lie within 0.5 mile N, W, and S of this reef.

Anchorage can be taken, in 20.1m, sand and mud, off the E side of Pettis Reef. Tully Reef, partly awash at HW, lies about 2 miles S of Pettis Reef.

Coral heads extend about 0.4 mile NNW from this reef; a 3.6m patch lies about 0.5 mile E.

Fuller Shoal, with depths of 3.6 to 9.1m, lies about 3 miles NW of Ras Abu Kalb.

Brook Shoal (18°42'N., 41°05'E.), with a least depth of 2.7m, lies about 7 miles W of Ras Abu Kalb. There are several shoal patches, not closely examined, lying W of Brook Shoal. Backham Patches, with a least depth of 9.1m, coral, lies about 7 miles WSW of Ras Abu Kalb.

Shirley Reefs (18°41'N., 41°08'E.), a group which dries in places, lie about 4 miles WSW of Ras Abu Kalb. Shirley Reefs are not easily seen.

Hunt Patches, with depths of 5.5 to 12.8m, extend about 3 miles SE from a position about 3 miles WSW of Ras Abu Kalb. They are difficult to distinguish because of the discoloration of the water in the vicinity.

7.32 Ras Hali (18°36'N., 41°17'E.), lying about 9 miles SSE of Ras Abu Kalb, is low and covered with bushes and clumps of palm trees. A reef extends about 2 miles SW from the point.

The outer edge of this reef, steep-to and generally visible, has a sand cay on it. Some of the sand banks off the cape dry from 0.6 to 0.9m in summer; the water off the cape is usually very discolored, the bottom being soft mud.

Jabal Hali, lying about 23 miles NE of Ras Hali, appears pyramidal in shape when seen from N of Al Qunfudhah.

To the S of Al Qunfudhah its appearance quickly alters, and from Shib Anda it shows as an oblong mountain, with its N part rounded off abruptly.

The mountain range converges toward the coast in the vicinity of Khawr Nuhud, about 22 miles SSE of Ras Hali, and Khawr al Birk, about 3 miles farther S. Jabal Tusi Sham stands about 20 miles SE of Ras Hali and 6 miles inland.

Jabal Tusi Yemeni stands about 4 miles farther SE. These two peaks are larger than the others and from Khawr al Birk they appear as the N part of the range. There is a peak S of the above two which may be mistaken for Jabal Tusi Yemeni.

7.33 Jabal Wasm (Jabal Qahm) (18°01'N., 41°36'E.) stands on a peninsula. On NE bearings, this steep hill appears pointed while on E and SE bearings it shows as a round hill with a peak on its N slope. A steep flat-topped hill, 219m high, stands about 3 miles ESE of Jabal Wasm; about 4 miles farther E is Jabal N, steep and conspicuous.

Jabal Baqara, close to the coast about 5 miles WSW of **Jabal Widan** (17°54'N., 41°48'E.), is 122m high and conspicuous on N bearings. The N and W sides of this hill are composed of black lava and on the S side is a white sand slope.

Jabal Husna-l Majis, about 6 miles SE of Jabal Widan, is steep on its N side, and has a fort on its summit. Jabal Itwad, about 23 miles ESE of Jabal Husna-l Majis, is conspicuous.

Khawr Amiq (18°28'N., 41°26'E.), about 10 miles SE of Ras Hali, is formed by a sandy point extending S, which can be identified by the gap it forms in the mangroves fronting the coast in the vicinity.

Shoals, with depths of less than 1.8m, extend about 2 miles S from the W entrance of Khawr Amiq.

Good anchorage can be taken in the bay N of Khawr Amiq, in 9.1 to 18.3m, sheltered from N and E winds.

Odin Shoal (18°26'N., 41°25'E.), with a depth of 5.5m, lies about 2 miles S of the W entrance point of Khawr Amiq, and is only seen under favorable conditions. A 3.6m patch lies between Odin Shoal and the coast SE.

Barton Islet (18°23'N., 41°16'E.) lies on a reef; about 2 miles E on the same reef is another islet. Both these islets are low, sandy, and covered with bushes. Minto Patch, with a depth of 7.3m, lies about 3 miles WSW of Khawr Amiq.

Freeman Shoals lie close W of Minto Patch. The coast between Khawr Amiq and Khawr Nuhud, about 12 miles S, is fringed in places by reefs. About 4 miles N of Khawr Nuhud, the sandy coast is broken by a conspicuous dark flat-topped rocky point, 9.1m high.

7.34 Umm Kerkan Shoal (18°22'N., 41°24'E.), lying about 2 miles offshore, extends about 5 miles S from a position about 4 miles S of Khawr Amiq. Its N part is awash and clearly visible, while its E edge is steep-to and also clearly visible.

Khawr Nuhud (18°17'N., 41°28'E.) is divided into two small bights by a projection extending S. Both of these parts are almost filled with the coastal reef, which extends about 1 mile SSE from the N entrance point.

The coast between Khawr Nuhud and Khisa, about 22 miles SSE, is fringed by reefs extending as much as 3 miles offshore. The trend of this stretch of coast was reported, many years ago, to be inaccurately charted.

The coast in the vicinity of Jabal Qahm, about 5 miles NNW of Khisa, was reported to lie 2 miles farther E than charted.

Jazirat Marqa (18°13'N., 41°19'E.), about 10 miles WSW of Khawr Nuhud, is low, sandy, and bordered by a reef.

Khawr al Birk (18°14'N., 41°30'E.), fringed by reefs, is entered about 2 miles S of Khawr Nuhud, and is separated from it by a projection, off which the coastal reef extends about 2 miles SW. The entrance lies S of this reef and the reef extending about 3 miles SSW from the S entrance point. The passage into the inlet is reported to be tortuous and narrow.

7.35 Hasr (18°09'N., 41°29'E.), low and wooded, lies on the coastal reef. Abu-l-Mahlef Islet, small, conical, and about 15.2m high, lies on the coastal reef about 3 miles SE of Hasr.

North al Wasm (North al Qahm) and South al Wasm (South al Qahm), about 6 and 9 miles, respectively, SSE of Abu-l-Mahlef Islet, provide good sheltered anchorage.

Anchorage, in 20.1m, has been taken off the entrance of North al Wasm. There is a sand bar, with a least depth of 4.5m, across the entrance of North al Wasm and a depth of 11.0m, mud, within. South al Wasm has depths of 9.1 to 14.6m.

Two above-water rocks lie on the coastal reef about 2 miles WNW of the N entrance of North al Wasm. Khisa is a small village on the coast, about 3 miles S of South al Wasm.

Widan (17°52'N., 41°43'E.), about 7 miles SE of Khisa, is a village on the shore of a small bight formed by a narrow projection extending W and N from the coast. This projection has the appearance of an island from W. This bight provides anchorage, in 5.5 to 7.3m, sheltered from S winds.

Kutumbul (Qadimbal Islet) (17°54'N., 41°38'E.), about 3 miles S of Khisa, rises like a wedge to a small rugged peak.

A reef extends about 0.5 mile SSW from the island; a 2.7m patch, not visible, lies about 0.5 mile E of the island.

7.36 Khawr al Makra (17°48'N., 41°51'E.) is a small break in the coastal reef about 8 miles SE of Widan. Between Khawr al Makra and Khawr Itwad, about 22 miles SE, there are several villages along the coast, which is fringed in places

by reefs and shoals lying as far as 3 miles offshore.

The coast in the vicinity of a large village about 11 miles SE of Khawr al Makra was reported to lie 3 miles farther NE than charted.

In general, anchorage is available all along the coast from Widan to Khawr Itwad.

Sumayr (17°47'N., 41°23'E.) is low and composed of sand and coral. A bank, with depths of 5.5 to 35m and probably less, extends about 5 miles N from a position about 1 mile NE of Sumayr. A rocky patch lies about 1 mile W of the middle of the W side of this bank; a similar patch lies about 2 miles ESE of its NE extremity.

Anchorage can be taken on this bank or off the W side of Sumayr, but care should be taken to avoid the shoal patches.

Mamali Saguir, a narrow reef on which the sea breaks in places, extends about 10 miles SSE from a position about 21 miles SSW of Khawr al Makra.

Matbakhayn, a rock, stands on the N end of this reef, and is a good mark. A beacon, 5m high, stands on the rock.

Khawr Itwad (17°34'N., 42°08'E.) is narrow and 1.8 to 3.6m deep. A large village is located about 4 miles E of the inlet. A 7.3m shoal, the position of which is approximate, was reported to lie about 6 miles SSE of Khawr Itwad. Caution is necessary, as shoal water may extend some distance from this shoal.

In general, anchorage is available all along the coast from Khawr Itwad to a position about 26 miles SSE.

Jazan (17°17'N., 42°20'E.) is a new port under development in the N approaches to Jizan. The port will be accessed through an 11km-long buoyed channel which has a current width of 260m and has been dredged to a depth of 17.5m. The port area has been dredged to 16.5m. A temporary construction jetty has been completed to serve vessels transporting abnormal loads.

Pilotage is compulsory and is available during daylight hours. The pilot boards in position 17°12.5'N, 42°14.5'E.

The harbormaster can be contacted during daylight hours, as follows:

1. VHF: VHF channel 67
2. Telephone: 966-53-6448282 (mobile)
3. E-mail: jecp.portcontrol@nps.com.sa

Tugs can be contacted during daylight hours on VHF channel 67.

Commercial access to the port is not expected to occur prior to 2017.

Firan (17°11'N., 42°10'E.), on the W side of the Inner Channel about 29 miles SE of Matbakhayn, is covered with trees and bushes; its highest part forms a steep bluff W.

Shairah (17°04'N., 42°16'E.) is about 6.1m high and covered with bushes. Ghurab lies about 9 miles WSW of Firan near the W end of a bank. A small black rock lies about 0.3 mile NW of the N end of the island.

7.37 Ras at Tarfa (17°02'N., 42°20'E.) is the S extremity of a long bushy peninsula which forms the W side of Khawr Abu as Saba. The point is fringed by a reef, which extends about 0.2 mile S and 0.8 mile W. Farafir and two islets close W of its S extremity lie on a reef about 2 miles ESE of Ras at Tarfa.

From a distance, these three islets appear as one. An 11m shoal extends about 2 miles SE from the SE end of Farafir. Khawr Abu as Saba is encumbered with shoals on its E side for a distance of about 8 miles from its head.

Anchorage can be taken, in 7.3 to 14.6m, in the outer part of this inlet. The coast between the E entrance of Khawr Abu as Saba and Jizan, about 11 miles SSE, is flat and sandy, and fringed by a reef.

Some hills, about 61m high, close behind Jizan are conspicuous, being the only high land in the vicinity.

Qarn al Wada (17°02'N., 42°30'E.), a bight in the coast about 3 miles SE of the E entrance of Khawr Abu as Saba, is almost filled with the coastal reef.

Jizan (Gizan) (16°54'N., 42°31'E.)

World Port Index No. 48142

7.38 Jizan (Gizan) is a developing port serving the S area of Saudi Arabia. The port deals mainly with breakbulk, container, ro-ro, and bulk cement cargo.

Saudi Ports Authority Home Page—The Ports

http://www.ports.gov.sa

Winds—Weather.—The prevailing winds here are from NW in the summer and from SE in the winter.

Tides—Currents.—The tidal rise is less than 1m.

Depths—Limitations.—Vessels up to 220m long, with a maximum draft of 10.5m, can be accommodated. The main harbor is comprised of a large basin, dredged (2005) to 10m in its N half and 12m in its S half. The basin contains 13 berths, 11 of which are used for general cargo and ro-ro vessels, while two are dedicated solely to ro-ro operations. The buoyed approach channel has been dredged to a depth of 13.5m; a turning basin just inside the breakwaters has been dredged (2005) to 13m.

Jizan—Berth Information

Berth	Length	Depth alongside	Maximum draft	Remarks
No. 1	199m	12.0m	10.5m	Bulk cement.
No. 2	176m	12.0m	10.5m	Bulk and general cargo.
No. 3	176m	12.0m	10.5m	Bulk and general cargo.
No. 4	171m	10.0m	8.5m	General cargo.
No. 5	171m	10.0m	8.5m	General cargo.

Jizan—Berth Information				
Berth	Length	Depth alongside	Maximum draft	Remarks
No. 6	183m	10.0m	8.5m	Livestock and general cargo.
No. 7	122m	10.0m	8.5m	
No. 8	174m	10.0m	8.5m	General cargo and ro-ro.
No. 9	174m	10.0m	8.5m	General cargo and ro-ro.
No. 10	143m	10.0m	8.5m	Containers and vehicle carriers.
No. 11	216m	12.0m	10.5m	Containers and ro-ro.
No. 12	216m	12.0m	10.5m	Containers and ro-ro.
No. 13	205m	8.0m	—	Coastal traffic.

Jizan Jetty, used by coastal tankers, extends 0.8 mile SW from the shore, 1.25 miles SE of the root of the South Breakwater; it has a T-head berth, with a dolphin at each end. The pier can accommodate two vessels up to 5,000 dwt, with a maximum draft of 5.7m.

Jizan Oil Terminal consists of two SPM buoys, SPM-1 and SPM-2, moored about 4 miles SW of the main harbor entrance. Both berths can handle vessels between 10,000 and 49,000 dwt, with a maximum length of 220m, a maximum beam of 35m, and a maximum draft of 16.3m.

Aspect.—A conspicuous fort stands on a ridge about 0.5 mile E of the port area. Two radio masts stand close by the fort, while a third radio mast, with a small dish aerial, stands at the N end of town.

A conspicuous stranded wreck, probably one of two charted wrecks, stands about 1 mile NW of the harbor. A cement factory ship is reported to be permanently moored N of the main port area.

Pilotage.—Pilotage is compulsory and is available 24 hours. Pilots board about 5 miles WNW of the harbor entrance. Pilots for the oil terminal board in position 16°51.7'N, 42°27.8'E or in the vicinity of Lighted Buoy N13. Pilots can be contacted on VHF channel 11.

Regulations.—Vessels should send their ETA, via the agent, 5 days, 48 hours, and 24 hours in advance. Vessels should contact Jizan Port Control (call sign: Jizan Port Control) 2 hours prior to arrival on VHF channel 16.

Vessels bound for the Bulk Plant Marine Terminal should send their initial ETA directly to the terminal as soon as it is known and confirmed 72 hours, 48 hours, and 24 hours in advance. All ETA and related messages should be sent via e-mail (g-jizan-telex@aramco.com).

Contact Information.—Jizan Port Authority can be contacted, as follows:

1. Telephone: 966-17-3171000
2. Facsimile: 966-17-3170777
3. Telex: 495-911018 PORTS SJ

Port Control can be contacted (call sign: Jizan Port Control) on VHF channels 9, 11, 16, 71, 72, and 73.

Tugs can be contacted on VHF channel 12.

Anchorage.—Anchorage Area A and Anchorage Area B are located, respectively, approximately 4 miles WNW and 3 miles WSW of the harbor entrance.

Anchorage Area A, which is for cargo vessels, shows charted depths of 12.7 to 16.2m, but a reef with a least depth of 5.3m encroaches on the E portion of the anchorage. Anchorage Area B, which is for tankers, has charted depths of 15.8 to 19.8m.

Directions.—The northern approach route is the only entrance to the Port of Jizan. The route leads for about 90 miles from a position 10 miles WSW of Jizan North Lighted Buoy (16°56.8'N., 41°17.5'E.). The approach channel is well marked by lighted buoys. Range lights, in line bearing 096.3°, lead through the breakwaters and into the port.

An IMO-adopted Deep-Water Route. with a controlling depth set at 27m, leads to the port; an IMO-adopted Traffic Separation Scheme is located at the seaward end of the Deep-Water Route. Caution is necessary as two circular IMO-adopted Areas to be Avoided, both marked by a lighted buoy at their center and best seen on the chart, are located within the limits of the Deep-Water Route.

Caution.—Vessels seeking passage to Jizan should exercise the appropriate caution, as the waters surrounding the port are not adequately charted. Less water or dangers in addition to those shown on the chart may exist.

The buoys marking the approach channel may be altered or missing. Two buoyed approach routes traverse the outer reefs to the port area, but the S fairway via **Pearly Gates** (16°23'N., 41°50'E.) was reported closed to shipping.

It has been reported (2004) that up to a 2.5° discrepancy between the charted alignment of the channel and the actual alignment may exist.

Vessels are urged to contact local authorities at Jizan for the latest information on recommended tracks, depths, aids to navigation, etc. before attempting to enter the N approach route, as it requires local knowledge; aids to navigation may be missing, unlit, or out of their charted positions.

7.39 Abu Shuqar Islet (16°56'N., 42°15'E.), on the SW side of the Inner Channel, is conspicuous and covered with trees. From a distance the islet appears as two islets, especially on NW bearings. The islet lies on the N part of Abu Shuqar Bank, which extends about 13 miles S and 5 miles W. The depths over this bank are irregular and there are probably shoal heads.

Zahrat Durakah (Abu Raji) (16°52'N., 42°16'E.), about 5 miles S of Abu Shukar Islet, shows as a sand cay during the

Jizan Marine Control Tower

summer, but at other times, the sea breaks over it. There are other islets between these two.

Hibar Island (16°54'N., 42°22'E.) lies about 7 miles ESE of Abu Shuqar Islet. A shoal, with depths of 5.5 to 10.9m and not easily distinguished, lies on the NE side of the Inner Channel, about 4 miles ENE of Hibar Island.

The coast SE of Jizan to Khawr al Wahlah, a distance of about 13 miles, is composed of rocky cliffs, backed by jungle. Qarn Ash Shurah, about 4 miles SSE of Jizan, is a bushy point.

Khawr Al Wahlah (16°44'N., 42°40'E.) has a narrow and shallow entrance between the fringing reefs.

The S end of a belt of mangroves at the entrance of this inlet and a sand patch on the coast about 0.4 mile SE of the mangroves are conspicuous marks. Harrier Reef, coral, lies about 2 miles SSW of the entrance of Khawr al Wahlah; Sandy Islet, 0.3m high, lies on its E side.

7.40 Kathriyah (16°43'N., 42°33'E.) lies on the SW side of the Inner Channel about 7 miles W of Khawr al Wahlah. It lies near the N end of a shoal extending about 5 miles S. Jafari and Dhahrat Jafari lie near the SW and SE ends, respectively, of this shoal.

The latter islet, which is visible only at LW, is a small sand cay. From S, Kathriyah is the first of this group to be seen. The coast SSE of Khawr al Wahlah is composed of rocky cliffs backed by jungle for a distance of 29 miles to Ras Musaghib.

Oreste Point (16°22'N., 42°46'E.) is located about 23 miles SSE of Khawr al Wahlah. Oreste Shoal, awash in places, extends about 2 miles W from Oreste Point. This shoal does not show well and its inner part consists of a reef that uncovers.

Marsa Baqlah (16°21'N., 42°47'E.) is a small dhow harbor fronted by a drying mud bank. On the N side of the entrance is a conspicuous tower; on the S side is a few huts. A ridge of white sand hills, about 6.1m high, extends from the N entrance of the inlet NW to Oreste Point.

It was reported that there were several rocky patches W of the mud bank, and less water than charted existed S of the mud bank.

Anchorage.—Good anchorage can be taken, in 7.3m, with the tower on the N side of the entrance of Marsa Baqlah bearing 050°, distant 1 mile.

Maydi (16°19'N., 42°49'E.), on top of a hill about 5 miles SE of Oreste Point, consists mainly of huts, but a square tower, surrounded by a few stone buildings, stands in the middle. A conspicuous white fort stands on the top of another hill, about 0.7 mile N of Maydi.

It was reported that the coastline in the vicinity of Maydi lies about 2 miles farther E than charted.

7.41 Ashiq Bank (16°25'N., 42°38'E.), with depths of 0.3 to 9.1m, lies on the E side of the Inner Channel. The Ashiq Islands, lying on the S part of this islet, is only a sand cay.

Anchorage.—Anchorage can be taken, in 18.3m, sand, with the N extremity of the N of the Ashiq Islands bearing 300°, distant 0.4 mile.

Jazirat Tawq (Atwaq) (16°19'N., 42°41'E.) has coasts of overhanging cliffs, 3m high. A sandspit, which covers only at HW in winter, extends about 0.5 mile E from the islet.

The coast between **Ras Musaghib** (16°15'N., 42°47'E.) and Al Luhayyah, about 34 miles SSW, is fringed by a reef, which extends as far as 3.5 miles offshore. From about 16 miles S of Ras Musaghib, the coast is bordered by mangroves and backed by sandy slopes covered with scrub.

Habl (16°10'N., 42°48'E.), a village about 6 miles S of Ras Musaghib, stands on a slight elevation. A conspicuous white house stands in the village. A vessel has anchored, in 8.2m, mud, about 2 miles off the coastal reef, with Habl bearing 097°. This anchorage should be approached with the village bearing 100°, which leads S of the reef off Habl and N of a shoal extending about 1 mile off the coastal reef.

Ghurab (16°10'N., 42°40'E.), on the W side of the Inner Channel, is 1.2m high. This islet, along with several others to the S, lies on the E edge of Farasan Bank; numerous rocky heads and shoals lie in this vicinity. Hoot Islet, a small sand

cay, lies about 3 miles SE of Ghurab.

Anchorage.—There is reported to be good anchorage, in 9.1m, with the NE extremity of Ghurab bearing 240°, distant about 1 mile, but the approach is difficult.

Abu Shajarah, sandy and awash, lies about 2 miles W of Hoot Islet, and Abu Shadd, covered with bushes, lies about 3 miles farther W.

Jazirat Buhays (Buhais), low and sandy, lies about 7 miles S of Hoot Islet; about midway between these two islets is Uwaf, a small sand cay. A shoal of undetermined depth has been reported to extend from Uwaf in a NE direction for about 1 mile.

7.42 Jazirat ar Rakl (15°58'N., 42°38'E.) is a low sand cay fringed by a reef extending about 0.5 mile NW from it. A large stone cairn is located on Jazirat ar Rakl and a tomb stands on the NE end of the islet. The cairn was reported missing.

Good anchorage, in 31m, can be taken about 0.3 mile SE of Jazirat ar Rakl. Nasib Shoal lies on the S side of the Inner Channel, and extends about 2 miles WSW from a position about 4 miles SSW of Jazirat Buhays.

Jurayb Island, about 1 mile SSE of Jazirat ar Rakl, is a sand cay at the NE end of a shoal extending SW. A large stone cairn, reported missing, stands on the island.

Az Zahair (Dahayir Islets) (15°53'N., 42°41'E.) are four small indefinite sand cays, which at times are submerged; each is fringed by a reef. Bryony Shoal, with a least depth of 6m, lies about 7 miles SSW of the N cay; this shoal is difficult to distinguish.

Jazirat Hamar (15°46'N., 42°37'E.) is sandy and has bushes near its center. A reef, the extremity of which is often very difficult to see, extends about 2 miles SW from the island. There is a low shifting sandspit at the NE end of the island.

Anchorage.—Good anchorage for vessels of moderate size can be taken off the SE side of this sandspit, or during strong S winds, off the reef extending from the NW side of the island, at a distance of 0.4 mile off the island.

7.43 Al Khawtamah (Kutamah) (15°40'N., 42°18'E.) has a ridge of hills, about 30m high, in its E part. The W side of the island is low and sandy.

Shoals, with depths less than 10.9m, extend as far as 2.5 miles from the W side of the island and about 1 mile from its NE end.

Al Uqban (15°30'N., 42°23'E.) lies about 8 miles SSE of Al Khawtamah. The N part of the island is flat, with a conspicuous peak, 18.3m high. The middle part is low, sandy, and narrow; the S part is a flat tableland, rising from 5.5 to 20.1m, with steep cliffs on its NE side.

Two rocky islets lie on reefs close off the E side of the N part of the island. A light is located at the SE end of the island.

Anchorage.—Vessels of moderate size can obtain sheltered anchorage, in 14 to 27m, with the 18.3m peak at the N end of Al Uqban bearing 240°, distant 0.4 mile; the bottom is coral and the depths very irregular.

7.44 Jazirat Antufish (15°43'N., 42°15'E.), about 5 miles ENE of Al Khawtamah, is flat and covered with low bushes and coarse grass, except at its SW end, where there is a hill, 36m high. The island is fringed by a reef on its N, E, and S sides.

Six Foot Rocks lie about 2 miles S of the SW end of Jazirat Antufish; some of these rocks are above-water and some are sunken. These rocks are black and conspicuous and may resemble the hull of a ship against the gray background of the island.

Anchorage.—There is good anchorage, in 21.9 to 25.6m, about 0.5 mile off the N coast of Jazirat Antufish, except in the vicinity of the shoal extending about 1 mile N from the middle of the island. This anchorage, however, is exposed to NW winds.

7.45 Kusi (Qusur) (15°44'N., 42°30'E.) is flat and bordered by reefs and shoals which extend as far as 0.5 mile offshore.

Another islet, about 0.5 mile SE of Kusi, is 2.1m high, with a few bushes near its center. It is fringed by reefs and shoals which extend as far as 0.5 mile S from the S end of the islet.

Anchorage.—During NW winds, the best anchorage in this vicinity is in 20.1m, about 0.2 mile off the middle of the N side of the above islet.

7.46 Jazirat al Bawarid (15°43'N., 42°33'E.), about 4 miles E of Jazirat Antufish, is bare and flat. Its W end is composed of conspicuous dark cliffs, 3m high; its summit, 6.7m high, is near its E end.

Al Murk (15°38'N., 42°36'E.), about 4 miles SSE of Jazirat al Bawarid, is low and sandy, rising to a height of 5m at its NW end. A conspicuous palm tree stands near the center of the island. In the middle of the NE side of the island is a ruined mosque with a wall resembling a tower; there is another ruined mosque on the SW side of the island.

Anchorage.—Anchorage can be taken anywhere off the NE side of Al Murk. A good berth is in 14.6 to 16.5m, with the conspicuous palm tree bearing 227° and the N extremity of the island bearing 304°. This anchorage is well protected from S, but open to NW winds, which sometimes cause a considerable swell.

7.47 Al Luhayyah (15°42'N., 42°42'E.), close to the coast on the W side of a ridge of hills, consists of some stone houses and a mosque with a white minaret.

Hill Fort, a conspicuous mass of ruins with a tower, 11.2m high, stands on the summit of the above ridge of hills. Jabal Qudmiya (Jabal Juda) and Jabal Kusha (Jabal al Milh) lie about 8 miles ESE and 8 miles SE, respectively, of Hill Fort.

These small peaks are conspicuous because they are the only hills near the coast in the vicinity; the high mountains inland are seldom visible. A shallow inlet, entered E of Al Murk, lies between the reefs S of Al Luhayyah. A sandy islet, 7.6m high, lies on the edge of a narrow mangrove swamp, about 2 miles SSW of Hill Fort.

A black rock, 1.2m high, stands on the reef forming the W side of the inlet about 0.5 mile SW of the 7.6m islet. This rock was reported not to be visible.

Anchorage.—In the summer months, when the prevailing wind is between W and NW, there is good anchorage, in 14.6m, with Hill Fort bearing 038°, distant 4.5 miles. The coast in the vicinity of Jahar, about 6 miles S of Al Luhayyah, is a low sandy plain and is probably a swamp in winter.

7.48 Ras Haram (Ras ad Dawabi) (15°34'N., 42°42'E.) is

low, sandy, and fronted by mangroves. Three conspicuous mangrove trees stand within 0.5 mile SE of this point; behind them is a ridge of sand hills, 6.1 to 9.1m high, on which a white tomb stands.

A fishing harbor, fronted by a breakwater which shows a light, lies about 3 miles SE of Ras Haram.

Khalij Kamaran (Kamaran Bay) (15°24'N., 42°41'E.) lies between the coast and the E side of the island of Kamaran. A promontory divides the S part of the bay into two arms.The E arm is the head of the bay; the W arm is known as Madiq Kamaran.

Kamaran (15°20'N., 42°35'E.), an island, is generally low and sandy in appearance, but rises a little on its S end, where there are a few hillocks. A conspicuous white tomb stands on the N end of the island. A light, with an elevation of 10m, is shown from a white round tower in a position about 0.1 mile SW of the white tomb.

Jabal al Yaman, the highest point on the island, rises to a height of 24m, about 2 miles NNW of the SE extremity of the island. This hill is conspicuous. A light is shown from Jabal al Yaman.

Clematis Shoal (15°20'N., 42°24'E.), with a least depth of 7.3m, lies about 8 miles W of Ras Furah, the SW extremity of Kamaran. This shoal is not easy to see.

Dahlia Shoal (15°23'N., 42°29'E.), with a least depth of 3.4m, lies about 5 miles NW of Ras Furah. During strong S winds, the sea breaks on this shoal, which then becomes visible at a considerable distance.

Al Bawdi (Al Badi) (15°30'N., 42°30'E.) is low, sandy, and bordered by reefs, which extend about 0.2 mile from its N side and 1 mile from its S side. A lagoon, with an islet in its entrance, lies on the S side of the island.

Lansdown Shoal (15°31'N., 42°36'E.), from which a light is shown, lies about 2 miles NE of Al Bawdi, and has a depth of 2.7m. Endeavour Shoal, with a depth of 2.1m, lies about 2 miles further NE.

North West Patches, with depths of 3 to 10.9m, extends about 3 miles S from a position about 1 mile E of the E end of Al Budi. A light, with an elevation of 6m, is shown from the SE end of North West Patches.

7.49 Uqban Saghir (15°25'N., 42°31'E.) is a sandy islet, fringed by a reef, about 5 miles SSE of the W end of Al Budi. A light, with an elevation of 7m, is shown from the summit of Uqban Saghir.

The E coast of Kamaran between Douglas Point, about 1 mile S of its NE extremity, and Ras Tuways, about 3 miles farther S, is indented by a shallow bay encumbered with reefs.

Three conspicuous dark-colored islets and a 3.6m rock lie on the reef extending S from Douglas Point. An island, 9.7m high, lies on the coastal reef about 0.5 mile NW of Ras Tuways.

Lazaretto Shoal (15°26'N., 42°42'E.), with a least depth of 9.8m, lies about 3 miles ESE of Douglas Point. Harrison Shoal, lying about 3 miles NE of Douglas Point, has a depth of 2.7m, and also shows a light.

7.50 Wickham Patches (15°27'N., 42°43'E.), with a least depth of 2.4m, lie on the E side of the N approach to Khalij Kamaran in a position about 4 miles E of Douglas Point. Barlow Patches, with a least depth of 3.9m, lie about 5 miles ESE of Douglas Point.

The S entrance to Madiq Kamaran is between Ras al Yaman and Ras al Bayad, about 1 miles SE; fringing reefs and shallow depths narrow the navigable channel considerably.

Rishah (15°10'N., 42°34'E.), lying about 5 miles SW of Ras al Bayad, is 3m high, sandy, and partially covered with scrub. The islet is fringed by a reef, except on its N side, which extends about 0.3 mile S.

Shoals, with depths of less than 18.3m, extend about 2 miles N and 1.5 miles SE from the islet. The sea breaks heavily on these shoals during strong winds. Near the S end of the islet is a tomb, visible only from N.

Anchorage.—Temporary anchorage can be taken N of Rishah. At night, it is better to anchor because of the uncertain currents and the difficulty of distinguishing the low land.

7.51 Ras al Bayad (15°15'N., 42°36'E.), fringed by a reef extending as far as 0.2 mile offshore, is low; a white square building stands about 0.5 mile S of the point. A second conspicuous white building stands on the coast about 3 miles S of the point.

A square stone pillar, 6.1m high and painted in black and white bands, stands on an 8m high mound about 0.5 mile SSE of Ras al Bayad. This beacon is obscured by palm trees until within 2 miles of it.

A beacon, 8.2m high, stands on Ras al Yaman, the SE extremity of Kamaran; a similar beacon stands on the opposite shore, about 0.3 mile WSW of Ras al Bayad. Both beacons are in ruins.

Ghubb Diqnah (15°16'N., 42°38'E.) is entered between Ras al Bayad and As Salif, about 5 miles NE. The shores of this bay are low and sandy.

Anchorage.—The best anchorage during strong S winds is in Ghubb Diqnah, in 31 to 37m, off the S shore of the bay, when the water is smooth. The holding ground is reported to be good.

7.52 Salif (As Salif) (Saleef) (15°18'N., 42°40'E.) (World Port Index No. 48152), located on the coast W of Jabal Mahasin, in a natural deep harbor, is rarely seen until inside Madiq Kamaran. There are large rock salt deposits in the vicinity.

Depths—Limitations.—An offshore berth, 93m long and oriented in a NNW/SSE direction, is located about 0.8 mile S of Ras as Salif. The berthing length of the facility is extended by dolphins and mooring buoys. The depth alongside is about 18m. Vessels of up to 50,000 dwt can be accommodated along the outer face.

Deep Water Berth extends about 450m ENE of Ras as Salif. Vessels up to 55,000 dwt, with a maximum length of 220m and a maximum draft of 13m, can be accommodated.

A berth for discharging cement, consisting of two flat-topped barges, is located about 0.3 mile E of Deep Water Berth. Two mooring buoys are moored off the berth. It has been reported that vessels up to 30,000 dwt have used this berth. A cement works, with six conspicuous silos, is located close S of the berth.

Aspect.—Jabal Mahasin (15°18'N., 42°41'E.), 47m high, close E of Salif, consists of two round peaks and is conspicuous on a moderately clear day.

A blockhouse, 8m high, stands on the SW slope of Jabal Ma-

hasin, at an elevation of 39m.

Pilotage.—Pilotage is available during the daylight hours only. Pilots board in the anchorage area.

Regulations.—The vessel's ETA should be sent 72 hours, 48 hours, and 24 hours in advance through their agent. The message should contain the vessel's dwt, gross tons, nrt, length overall, draft, and cargo tonnage.

Vessels should maintain a listening watch on VHF channel 16 from 0800 to 1000 and from 1600 to 1800 after arriving at the port.

Contact Information.—The port can be contacted, as follows:

1. VHF: VHF channels 14 and 16
2. Telephone: 967-3-830261

Anchorage.—Good anchorage can be taken, in 14.6 to 25.6m, between 0.5 and 1 mile offshore at Salif. This anchorage is sheltered from E and W winds and partially from S winds.

Directions.—Vessels coming from the NW should pass between the SW coast of Kamaran and Arab Shoal. then set course of 060° when the blockhouse bears 060°, over a least depth of 11m. Vessels coming from the S should pass E of Rashahah and set a course to the NNW, remaining a distance of 1 mile off the coast until the blockhouse bears 060° and then set course of 060°.

Caution.—Winds usually increase during the day and may delay berthing if greater than force 4.

7.53 Ibn Abbas (15°23'N., 42°48'E.), a village located on the E side of Khalij Kamaran, has a mosque with three or four domes. A light, with an elevation of 6m, is shown from a white round tower in a position about 0.5 mile N of the village.

Tides—Currents.—In Khalij Kamaran, the rise and fall of the tide is greatly influenced by the winds. During strong S winds, the level of the water remains unchanged for several hours.

At springs, the tidal currents setting NE in the S entrance of Madiq Kamaran attain a velocity of 1.5 knots; the currents setting SW attain a velocity of 0.5 knot. Both set almost straight through this entrance.

The discoloration of the water in the S entrance of Madiq Kamaran is very noticeable. It usually extends as far S as **Arab Shoal** (11°40'N., 43°40'E.) and Rishah, and as far N as the point about 4 miles NNE of Ras al Yaman.

When the current setting NE is strong, a light area is found right across the channel N of the entrance, and a dark area is found in Ghubbat Diqnah. Sometimes there is a dark area on the shallowest part of Arab Shoal.

7.54 Kamaran (15°20'N., 42°37'E.), on the E coast of Kamaran, is entered between Milton Point and North Point, about 0.3 mile NNE, and is about 0.5 mile in length. There are depths of 16.5m in the middle of the entrance, gradually shoaling to 5.5m.

The shores are fringed by reefs and shoals, with depths of 5.5m extending about 183m from shore; the head of the harbor dries. In the approach to the harbor, a 9.7m patch and an 8.5m patch lie about 0.3 mile SE and 0.3 mile ENE, respectively, of North Point.

Winds—Weather.—The climate of Kamaran is dry, never excessively hot, and healthy. Strong winds, often reaching gale force, prevail during the cool season from October to April.

During the hot season, cool N breezes usually blow in the afternoon. Sandstorms are experienced, mainly with W and NW winds, but occasionally occur with NE winds.

During August and September, electrical disturbances, accompanied by strong winds with a little rain from NE and ENE, take place. They occur without warning, but are usually of short duration. Cyclones are rare, but sandstorms are common during the hot season.

Aspect.—On the N shore of the harbor, there are several buildings, one of which has a conspicuous chimney. Two radio masts stand about 0.6 mile WNW of North Point; the positions of these masts are approximate.

A mosque with three domes stands about 1 mile NW of North Point; about l mile farther NE is a conspicuous tower.

Kamaran, on the SW shore of the harbor, has several large brick and stone buildings and a low mosque with a small white dome.

Anchorage.—Good anchorage can be taken, in 13.7m, mud, good holding ground, with the center of the bridge at the head of the harbor bearing 288° and the tall chimney on the N side of the harbor bearing 339°. At this berth 137m of swinging room is available in depths over 9.1m.

In 1959, a vessel anchored, in about 17m, sand and shell, about 0.2 mile ESE of North Point.

Ras Isa to Ras Bab al Mandeb

7.55 Between Ras Isa and Ras Bab al Mandeb, the 15 mile wide coastal plain is backed by a range which is higher than the range N. South of **Al Mukha** (13°19"N., 43°15'E.), there are a few hills and low hummocks on the coastal plain.

Jabal an Nar is table-topped and stands about 14 miles E of Al Mukha. Jabal ath Thobani, a long wedge-shaped hill, 297m high, stands about 1 mile SW of Jabal an Nar; its N end is a steep bluff. **Jabal Dubaah** (13°01'N., 43°29'E.) is sharp and stands about 6 miles inland.

Zi Hill, 71m high, stands near the coast about 6 miles SW of Jabal Dubaah. This conspicuous wedge-shaped and rocky hill is like no other in the vicinity, and shows up better from S than N. Between Zi Hill and Jabal Dubaah, there are several hills from 27 to 213m high.

Winds—Weather.—Severe sandstorms have been experienced off the coast in the vicinity of the N approach to Bab el Mandeb.

A haze, as a result of sand blown from the land, is frequently experienced during the months of June, July, and August.

From 1400 to 1600, this sandy haze is generally seen setting toward the coast from the sandy plain, even when the wind is NW. The haze extends toward Jazirat Mayyun (Perim) and Djeziret Seba, but it is usually clear about 2000.

Tides—Currents.—The currents in the vicinity of the N approach to Ras Bab al Mandeb are reported to be very variable. In June and July, during strong NW winds, the currents have been observed to generally set SE along the coast at velocities of 0.5 knot to 1.5 knots.

7.56 Ras Isa Marine Terminal (15°07'N., 42°36'E.) (World Port Index No. 48155) is situated 4.8 miles SSE of Ras Isa and operates 24 hours, weather permitting. The terminal

consists of the 409,000 dwt Floating Storage and Off-loading Vessel (FSO) "SAFER" moored permanently to a tanker mooring buoy. A submarine pipeline is laid from the mooring buoy NNE to the shore.

Winds—Weather.—In the summer between May and September, prevailing winds are between NE and NW. Winds speeds are generally less than 10 knots and only rarely exceed 20 knots. During the winter, winds are mainly between SE and SW at speeds of 10 to 20 knots, but they can be strong, reaching speeds of 30 to 35 knots and occasionally reaching 40 knots. Calm weather in winter, with wind speeds of less than 6 knots, rarely lasts longer than 2 or 3 days.

Depths—Limitations.—Vessels of 80,000 to 307,000 dwt, with a maximum length of 305.6m, a maximum beam of 56.4m, and a maximum freeboard of 18.3m, can be accommodated at the terminal.

Pilotage.—Pilotage is compulsory. Pilots board about 2 miles S of the terminal.

Regulations.—A restricted area, the limits of which are marked by lighted buoys and best seen on the chart, and into which vessels on passage are prohibited from entering, surrounds the tanker. The Holding Anchorage, the limits of which are marked by lighted buoys and best seen on the chart, is situated 6.5 miles S of Rishah. Vessels are prohibited from entering the restricted area surrounding the tanker or the Holding Anchorage without prior approval of the terminal authorities.

Vessels should send their ETA to Ras Isa Marine Terminal and the Maritime Affairs Authority upon departing the previous port and also 72 hours, 48 hours, and 24 hours in advance. Ras Isa Marine Terminal will send an e-mail or facsimile to the vessel requesting pertinent information required to be supplied prior to the vessel being granted permission to enter the terminal area.

Before proceeding to the Holding Anchorage or the terminal, vessels must contact the terminal on VHF channel 74 for permission, anchoring, pilotage, and boarding instructions.

Contact Information.—The terminal can be contacted, as follows:

1. Call sign: FSO Safer/Ras Isa Marine Terminal
2. VHF: VHF channel 74
3. Telephone: 967-1-416080 (extension 2380)
4. Facsimile: 967-1-416080 (extension 2264)
5. E-mail: fsosafermaster@satellite-email.com
   fsomaster@sepocye.com

7.57 Khalij Isa (Isa Bay) (15°05'N., 42°43'E.) is entered between the low and sandy Ras Isa and Ras Katanib, about 17 miles SE. The sandy coast of the bay is backed by sand hills, 6.1 to 18.3m high.

Isa, a village with a conspicuous three-domed mosque, stands about 0.5 mile NE of Ras Isa.

Anchorage.—Good anchorage can be taken, in 14.6m, sand, with the mosque in Isa bearing 270°, distant 1.5 miles. This anchorage is sheltered from N and W winds.

Owing to the frequent discoloration of the water due to the large amount of sand in suspension, the usual indications of shoal water may be misleading and no reliance should be placed on seeing any shoals in this locality.

7.58 Ras Kekenib (Ras Marsa) (15°00'N., 42°53'E.), on the low and sandy coast, has a tall conspicuous tree about 2 miles NW of it. A disused lighthouse, consisting of a black and white framework tower, 22.9m high, stands on the point.

For a distance of about 6 miles SSE from Ras Kekenib, the coast consists of low sand hills sparsely covered with vegetation. A power station with conspicuous chimneys stands about 2 miles SE of the point.

Caution.—Caution should be exercised when passing close off the power station, as cooling water intakes extend up to 0.5 mile off it. A disused lighthouse, consisting of a black and white framework tower, 15m high and not easily seen, stands on Ras ash Shamm, a low point about 5 miles SSE of Ras Kekenib.

7.59 Khawr Kathib (Khawr Katib) (14°54'N., 42°55'E.), entered between Ras ash Shamm and Ras al Kathib, a low and sandy peninsula subject to inundation lying about 3 miles SW, is a shallow lagoon encumbered with numerous islets, reefs, and sand banks.

Breakwaters, best seen on the chart, create a basin, with general depths of 5 to 7m in it, lying S of Ras al Kathib.

The port of Al Ahmadi (Al Hudaydah) (Hodeidah) lies at the S end of this lagoon and is approached through a dredged channel.

Lily Shoal (14°51'N., 42°45'E.), with a least depth of 6.4m, lies about 10 miles WSW of Ras al Kathib, and is generally distinguishable. In Khawr Kathib, the numerous islets, reefs, and sand banks divide this lagoon into several basins.

Hajara, about 3 miles E of Ras al Kathib, is a low sand cay. Woody Islet, thickly wooded, lies about 3 miles SSE of Hajara.

Al Ahmadi (Al Hudaydah) (Port of Hodeidah) (14°50'N., 42°56'E.)

World Port Index No. 48165

7.60 Al Ahmadi, at the S end of Khawr Kathib, is the principal port of entry for Yemen.

The port, managed by a government authority, consists of a basin with an area of about 44 acres. There is a concrete quay on its SE side and a tanker berth on its NW side. A large warehouse and a few other buildings stand on the quay.

There is occasional communication by sea with Aden. The town is connected to the general telegraph system, and a radio station is available. Fresh provisions can be obtained.

Winds—Weather.—The coast has a hot desert climate year round. The average temperature is 33°C in winter with a relative humidity of 58 to 65 per cent year-round. Maximum temperatures may go up to 46°C and minimum may go down to 15°C. Strong SW winds, often reaching gale force, prevailing all during the cool season, October through April.

During the hot season, cool N breezes prevail in the afternoon, but sand storms and occasional violent squalls blowing off the land are common, occurring most frequently during August and September.

Rainfall is scarce and sporadic from July to September and December to January. During the monsoon period, December through February, wind speeds can exceed 45 knots.

Depths—Limitations.—The approach channel to the harbor was dredged to a depth of 9.4m over a width of 200m. Normal-

ly, the maximum acceptable vessel length in the harbor is 200m, with drafts up to 9.75m.

The dredged channel, which is entered in the vicinity of the Fairway Lighted Buoy, located about 5 miles NW of Ras al Kathib, may best be seen on the chart

The L-shaped main quay is 700m in length and can accommodate up to five vessels. The berth locations are best seen on the chart. Berth information is given in the accompanying table titled **Al Ahmadi—Berth Information**.

An oil berth, consisting of dolphins and with dredged depths of 8.9 to 9.4m alongside, is located in the inner harbor and can accommodate tankers up to 15,000 dwt, with a maximum length of 150m, a maximum beam of 23m, and a maximum draft of 9.1m. The oil terminal close SW of the berth is connected to the shore by a submarine pipeline extending along the SW side of the basin.

A pontoon jetty extending S from Ras al Kethib is 290m long and can accommodate vessels up to 5,000 dwt, with a maximum draft of 5.2m.

Aspect.—A conspicuous cement silo stands at the NE corner of the port area. A vessel reported that the charted wrecks, the power station showing three red lights, and a tall building showing three amber lights located in Al Ahmadi were all conspicuous.

Al Ahmadi appears as a compact mass of buildings from seaward. The houses are high, usually of stone or brick; on their flat roofs are reed huts.

The old town, close to the coast, has a wall on its land side; outside this wall are many houses and sheds. Two forts, one N of the town and one S of the town, are falling into ruins.

The S fort is conspicuous. A blockhouse, 11m high, stands on a 6m high summit about 0.5 mile N of the town. A tomb, about 0.5 mile S of the S fort, is a good landmark in the afternoon and evening, when it appears white. The position is marked by three palm trees.

The stranded wreck lying 0.7 mile WSW of Ras ash Shamm has the appearance of a vessel at anchor. The dredged channel is marked by buoys and ranges, although they may be obscured by dust in the summer.

Pilotage.—Pilotage in the dredged channel is compulsory. Pilots embark in the vicinity of Lighted Buoy No. 11. No vessel should cross this point towards the port without a pilot on board. Violation of this requirement will lead to heavy fines by the port authority. Pilotage is available only during daylight hours.

Regulations.—The vessel's ETA should be sent 72 hours, 48 hours, and 24 hours in advance.

The 24-hour message should contain a request for a pilot, the vessel's ETA, draft forward and aft, loa, gross tons, nrt, dwt, and the quantity of cargo and its distribution.

Vessels drawing more than 9.45m are forbidden to enter the outer approach channel without a pilot.

Vessels arriving at night should anchor W of Fairway Lighted Buoy and await instructions.

Vessels arriving by day may have to anchor and wait for HW, when a pilot will take them through the channel.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 967-3-211603
   967-3-211620
2. Facsimile: 967-3-211561

Anchorage.—Vessels awaiting the pilot can take anchorage in the designated anchorage area, best seen on the chart, on the NE side of the dredged channel extending SE from Lighted Buoy No. 8 to the pilot boarding position, in charted depths of 8.2 to 9.8m. It has been reported (2013) that a vessel has sunk within the limits of this anchorage area; the exact location of the wreck is unknown and vessels should contact the Port Authority for further information prior to using the anchorage.

Good anchorage may be obtained, in 10.4m, sand, approximately 1 mile NNW of Ras al Kathib.

The roadstead off Al Hudaydah affords good shelter from winds between NE and SE. An island and its surrounding shoals about 10 miles to the S protect this anchorage somewhat from the S and, if proper precautions are taken, a vessel can ride out a S gale here. This anchorage is reported to be unsafe if the wind is strong from W or SW.

Caution.—It has been reported (2006) that the aids to navigation in this area are unreliable and may be missing, unlit, or out of position.

It has also been reported (2006) that depths in the approaches to and within the port are less than charted. Mariners should navigate with caution and seek further information from local authorities.

Al Ahmadi—Berth Information

Berth	Length	Maximum draft	Remarks
No. 1	76m	6.1m	General cargo and bulk grain.
No. 2	165m	9.75m	General cargo and bulk grain.
No. 3	165m	9.75m	General cargo and bulk grain.
No. 4	156m	9.75m	General cargo and bulk grain.
No. 5	160m	10.0m	General cargo and bulk grain.
No. 6	195m	10.0m	Containers. Can accommodate ro-ro vessels.
No. 7	300m	10.0m	Containers. Can accommodate ro-ro vessels.
No. 8	150m	9.75m	General cargo. Extends NE from the NW end of Berth No. 7.

7.61 A fishing harbor fronts the town 2 miles SE of **Kitf al Manhalah** (14°49'N., 42°55'E.) and is formed by two breakwaters, leaving an entrance open N. There is a fish landing quay and a boatyard on the SE side of the harbor. Mooring pontoons for small craft extend on the S side of the N breakwater.

Winds—Weather.—Northeast winds prevail from April to September; strong SW winds prevail during the remainder of the year.

In August and September, violent squalls blow off the land and veer quickly to the S; these are frequently experienced and occur usually during the evenings.

These squalls were reported to occur occasionally from May to September.

Anchorage.—A good berth is in 7.3m, coarse black sand, good holding ground, with the light on the W breakwater head of the fishing harbor bearing 074°, distant 2 miles. In good weather, small vessels can anchor closer in.

7.62 **Khawr al Ghalafiqah** (14°32'N., 43°00'E.) affords good shelter for a small craft with local knowledge. Its W side is formed by a narrow peninsula, extending about 7 miles NNW from the head of this inlet. Katif al Makhayish, about 12m high, is a sand hill shaped like a haycock standing on the SW end of this peninsula.

A sandy island, 0.9 to 3m high, fronts the entrance of this inlet; Ras Mujamilah is the N extremity of this island. Between Katif al Makhayish and Ras Mutaynah, about 27 miles SSE, the coast consists of low hills backed by mountains. Depths of less than 10.9m lie from 2 to 6 miles offshore along this part of the coast.

Katif Quraysh (14°14'N., 43°04'E.) lies about 13 miles SSE of Katif al Makhayish and about 1 mile inland. It has a conical summit and a wedge-shaped piece of land close to its N side. It is lower and darker than the other coastal hills in the vicinity, and from S, and even abreast of it, it appears as an island.

A small rocky patch, on which the sea breaks, lies about 0.5 mile W of **Ras Zabid** (14°07'N., 43°05'E.). **Ras Mutaynah** (13°59'N., 43°08'E.), about 9 miles S of Ras Zabid, is low and rounded. It is reported to lie 2 miles farther E than charted.

Within 3 miles NW of Ras Mutaynah, there are several rocky patches, on which the sea breaks.

7.63 **Zahari** (13°51'N., 43°14'E.), about 10 miles SE of Ras Mutaynah, consists of a few inconspicuous brown huts and a mosque with three domes.

Open anchorage can be taken off Zahari, but it is exposed to S winds. Between Zahari and Al Mukha, there are numerous villages on the coast. They each have one or two mosques and are usually surrounded by trees.

Al Khawkhah (13°38'N., 43°15'E.), about 3 miles SE of Zahari, has numerous white buildings and a high tower, which are conspicuous against the dark background of palm trees. Two white factories and some huts stand about 3 miles SE of the village.

Mawshij (13°43'N., 43°16'E.) has some conspicuous buildings, one of which is a mosque with a cupola and several minarets.

Jabal Musa (13°40'N., 43°25'E.), about 8 miles ESE of Mawshij, consists of three small black hills, which must not be confused with the distant high land. On a SE bearing, Jabal Musa appears as two peaks.

Marsa Fajrah (13°36'N., 43°17'E.), about 6 miles S of Mawshij, is a small bay that affords sheltered anchorage to small craft with local knowledge, in a depth of about 5m.

Between Marsa Fajrah and Yakhtul, about 9 miles S, there are numerous sand and coral patches found near the coast; these patches give the sea a dark gray color.

Yakhtul, at the head of a small shoal inlet, consists of a few white houses, some huts, and a mosque.

7.64 **Al Mukha** (13°19'N., 43°15'E.) (World Port Index No. 48175) has an open roadstead exposed to all but E winds. There are depths of 5.5 to 10.9m in the road lying from offshore. Caution is necessary, however, as there are many dangers in the approach.

Winds—Weather.—From May to September, winds are light with occasional violent squalls and sandstorms off the land. The latter, occurring usually in the evening, are more frequent during August and September.

From October to April, S winds predominate, with strong SW winds causing rough seas. The heat and humidity are, at times, excessive.

Tides—Currents.—At springs, there is often only one HW and LW every 24 hours. At neaps, two tides are experienced every 24 hours, but their times are irregular.

The tidal currents set N with a rising tide and S with a falling tide; they attain a velocity of 1 to 2 knots. A current of about 2 to 3 knots has been experienced in the vicinity. The duration of the current is much affected by the winds.

Close inshore, during strong S winds, the S current often runs for 16 hours and the N current runs for 6 to 8 hours. In the deep water seaward of the shoals off Al Mukha, a current sets N during winter and spring.

Depths—Limitations.—There are several shoals in the approaches and care is necessary when proceeding to the anchorage.

Stranded wrecks, best seen on the chart, lie SW of the approach channel. The entrance channel has been dredged to a depth of 7.9m over a width of 110m but it has been reported more recently that there are depths of 9 to 9.2m in the channel.

A jetty projects NNW from the coast about 1 mile SSW of North Fort; the jetty is protected on its W side by the breakwater. The jetty is 150m long, 45m wide, and has depths of 8.5m on each side. Vessels up to 15,000 dwt, with a maximum length of 175m, can be accommodated.

Ro-ro vessels can be accepted at the head of the jetty. The E side of the breakwater was dredged to 3.5m and was used to berth coastal vessels.

It was reported that tankers up to 12,000 dwt could secure to buoyed anchors laid E of the breakwater and discharge to a pipeline on the breakwater.

It has been reported that there is a tanker berth, with depths of about 9m, which serves the power station situated 2 miles NNE of North Fort.

Aspect.—The town stands on the E shore of a small bay and is entered between two low points; the conspicuous ruins of a small fort, known as North Fort, stand on the N point.

A 36m high minaret, standing 0.7 mile SE of North Fort, is conspicuous.

Four tanks stand on Jazirat Ziadi, close S of the S entrance point. Four floodlight towers, each 30m high, lie on the jetty and are reported to be visible up to 20 miles at night.

A large power station, with four tall chimneys and power cables clearly visible extending E, stands on the coast about 2 miles NNE of North Fort.

The power station and the power cables are radar conspicuous.

Pilotage.—Pilotage is compulsory. The pilot boards at Fairway Lighted Buoy and can be contacted on VHF channel 12.

Regulations.—Vessels should send their ETA 72 hours, 48 hours, and 24 hours in advance through their agent. The message should contain the vessel's ETA, loa, draft, dwt, gross tonnage, nrt, quantity of cargo, and cargo distribution.

Contact Information.—The port authority can be contacted, as follows:

1. VHF: VHF channels 14 and 16
2. Telephone: 967-3-462118

Anchorage.—Vessels can anchor, in 6 to 7m, SW of the entrance channel, or further out according to draft.

From October to April, cargo operations may be limited to the early morning, because of strong winds and rough seas later in the day. Vessels are advised to moor because of the tidal currents in the roads.

7.65 Dhubab (12°56'N., 43°25'E.), a village located about 26 miles SE of Al Mukha, lies on a small rocky projection. A white sand hill, 20.1m high, stands on the inner part of the N side of the projection.

Conspicuous white forts, the positions of which are approximate, stand on Zi Hill and the white sand hill about 1 mile S of Zi Hill.

The white fort on Zi Hill is reported to give a good radar return up to a distance of 12 miles.

7.66 Jazirat Mayyun (Perim) (Berim) (12°40'N., 43°25'E.), lying in Bab al Mandeb, is bare, rocky, and rather flat in appearance; the surface is broken into a dense layer of boulders and stones, and covered in places with windblown coral sand. It is devoid of vegetation and is grooved with watercourses.

This island is even and unbroken and should not be mistaken for the high and irregular land of Ras Bab al Mandeb. Mayyun High Light is shown from a gray stone tower, 25m high, on the E part of the island. Jazirat Mayyun (Perim) is reported to give a good radar return up to a distance of 18 miles.

Jazirat Mayyun (Perim) is surrounded by a prohibited entry area, best seen on the chart.

7.67 Mayyun Harbor (Perim Harbor) (12°39'N., 43°25'E.), on the S side of Jazirat Mayyun (Perim), is easily entered between Lee Point and Pirie Point. The harbor is now completely disused.

It is divided into two branches by a peninsula terminating in Murray Point. The E branch is encumbered with shoals; the W branch forms the port.

Winds—Weather.—The prevailing NW winds in summer bring a fine dust. In September, the weather is unpleasant and damp, especially at night, when low clouds form overhead and render the atmosphere oppressive.

A cold current from the Gulf of Aden lowers the water temperature below the temperature found N of Jazirat Mayyun (Perim).

Tides—Currents.—The tidal current during the rising tide sets N into the harbor, the main part of this current turning NW into the W branch. A small part sets into James Bay, then turns W and rounds Murray Point at a close distance, and then sets into Murray Bay. It then turns in this bay and runs SE along the peninsula. The tidal currents are weak and are greatly affected by the wind.

Depths—Limitations.—The entrance channel between Lee Point and Pirie Point has a width of about 0.3 mile, with a least charted depth of 14m on the range and general depths of 16 to 23m. Inside the entrance the depths gradually shoal to 9.1m and less farther in.

A dangerous wreck, with a depth of 4.3m, lies sunk about 0.1 mile ESE of Pirie Point. A 5.5m shoal lies about 183m E of the same point. There are several small piers here capable of accommodating boats.

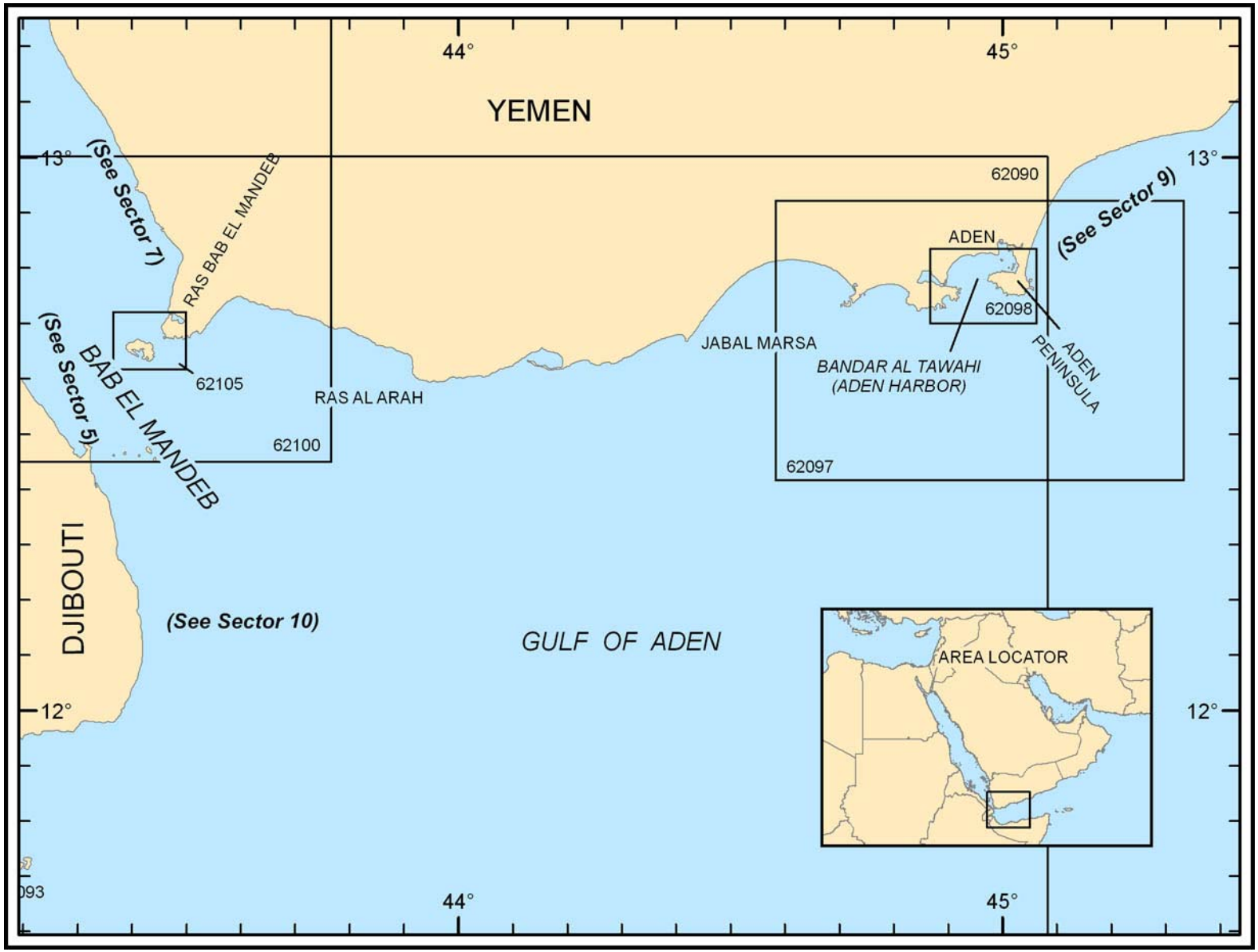
Aspect.—Two cairns NE of Lee Point, the E entrance point of the harbor, and a barracks with a flagstaff about 0.5 mile N of Murray Point, at the head of the harbor, are good marks. Two fuel tanks stand about 0.6 mile NW of Pirie Point. Two white stone cone-shaped beacons, in range 343.5°, stand on Murray Point.

Anchorage.—Anchorage can be taken, in 10m, about 0.2 mile SSW of Murray Point, with about 183m of swinging room.

Anchorage can also be taken farther NW in lesser depths, but the holding ground is poor.

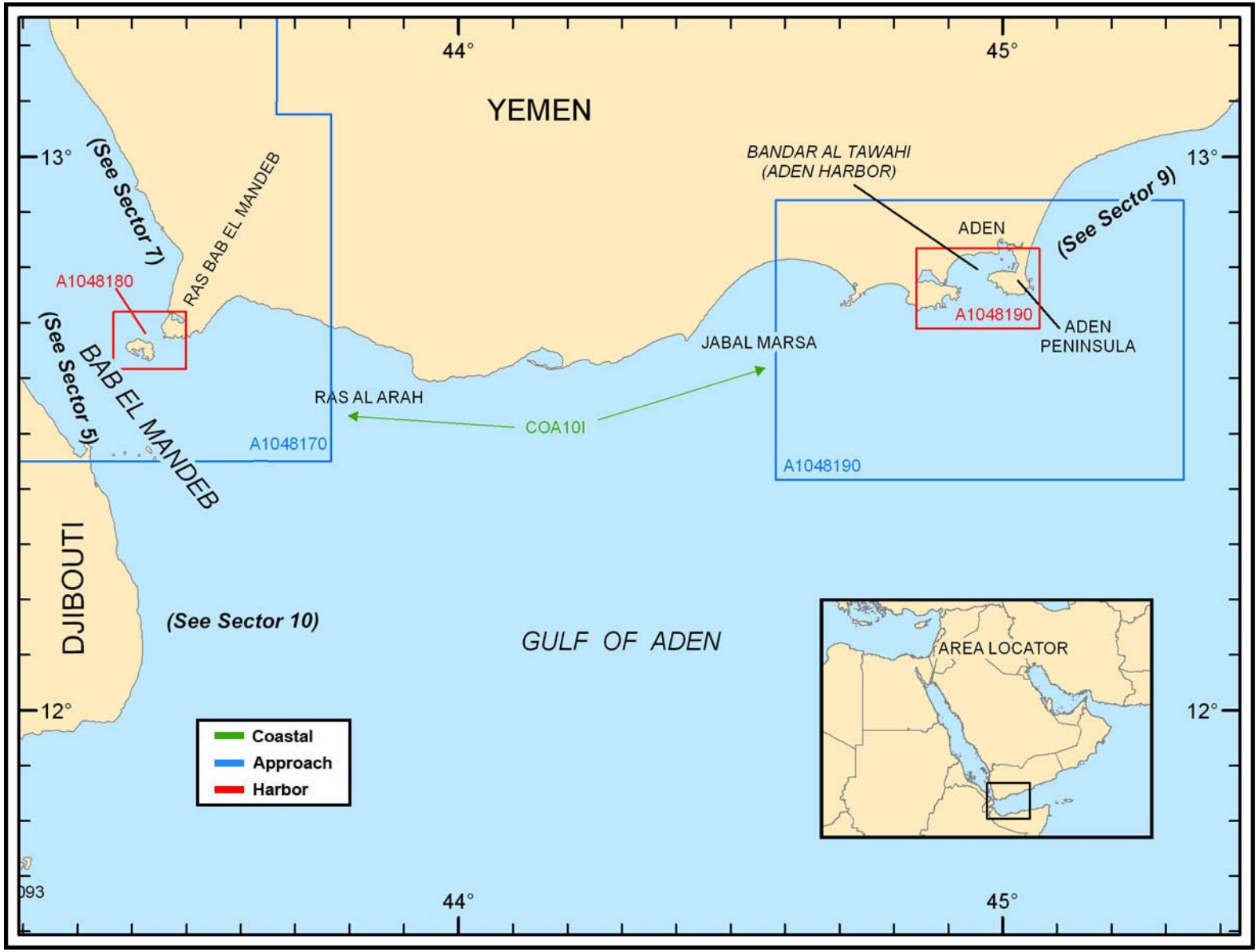
Caution.—Caution is necessary when entering Mayyun Harbor (Perim Harbor) as the current occasionally sets across the entrance according to the wind.

Off **Liverpool Point** (12°38'N., 43°25'E.), about 0.2 mile NNE of Lee Point, during strong S or SW winds, there is often a considerable swirl, which tends to turn a vessel to starboard when entering. A vessel with poor maneuverability should enter at a fair speed, and if this tendency is still not checked, it would probably be well for a vessel to go full ahead and avoid going full astern until as late as possible. This swirl occurs with a rising tide and during strong winds with a falling tide.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **8** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 8

YEMEN—RAS BAB AL MANDEB TO ADEN HARBOR

Plan.—This sector describes the coast of Yemen along the N side of the Gulf of Aden from Ras Bab al Mandeb, up to and including Aden Harbor (Bandar at Tawahi). The sequence of description is from W to E.

General Remarks

8.1 The general characteristic of the W part of the Arabian coast between Ras Bab al Mandeb and Ras al Hadd is a low and narrow coastal plain backed by a rocky and precipitous range of mountains.

These mountains, rising between 1,219 and 2,438m, attain their greatest height in the SW, then they decrease in elevation and complexity of structure toward the E.

These mountains are succeeded E by lower table-topped and scarp-bounded uplands decreasing to about 610m. Numerous wadies drain from the highlands and cultivation is carried on near their channels.

Farther E the foothills of the coastal ranges form bold headlands and small rocky islets.

Along the eastern third of this coast steep-to cliffs form the seaward edge of extensive tablelands, which average about 183m in elevation. The remaining coast to the S entrance of the Gulf of Oman is generally low.

Jabal Haikah is a small range of irregular outline, rising to 163m, about 3 miles NE of Ras Bab al Mandeb.

Jabal Arar, a range of mountains, extends about 14 miles S from a position about 35 miles NNE of Ras Bab al Mandeb, then about 21 miles SE. Jabal am Wusid (Barn Hill), the SE peak of this range, is square-shaped and conspicuous, with a peak in the middle.

Jabal Hajar, dark and irregular in outline, extends about 15 miles ESE from a position about 17 miles NE of Ras Bab al Mandeb. This range rises to heights of 335m but actually appears low, as the sandy plain rises gradually to between 122m and 152m at its base.

Jabal Kharaz (12°44'N., 44°09'E.) is a mountainous range of limestone and granite formations extending to within 1 mile of the coast. The summit, 850m high, rises about 15 miles NE of Ras al Arah (12°36'N., 43°55'E.). A ruin of roughly hewn stone stands on the W side of the summit.

Depths in the approach to this part of the Arabian coast are deep and clear. The 20m curve generally parallels the coast at distances of from 90m to 4 miles offshore.

Rambler Knoll (12°32'N., 44°10'E.), with a least depth of 18.3m, lies about 5 miles offshore and is the only known danger lying outside the 20m curve.

Caution.—Numerous oil and gas exploration rigs, with associated pipelines and structures, may be encountered in the waters described in this sector.

Incidents of armed robbery have been reported against ships proceeding in the W and SE parts of the Gulf of Aden. Vessels of any size should be aware of the risks involved when navigating in these waters at speeds of less than 12 knots.

Further information on piracy can be found under Red Sea and the Persian Gulf—Cautions in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Middle East Merchant Vessel Voluntary Reporting System.—A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Red Sea and the Persian Gulf—Ship Reporting System.

Maritime Security Patrol Area.—The Commander, U.S. Navy Central Command has directed the establishment of a Maritime Security Patrol Area (MSPA) in the Gulf of Aden. A force of Coalition Navy warships will patrol the area and aircraft will fly in the air space above.

The MSPA is being established in support of the International Maritime Organization's (IMO) ongoing efforts. Coalition actions will give the IMO time to work international preventive efforts that will ultimately lead to a long-term solution.

Coalition ships are in the area as part of its continual presence in this region. While they have conducted routine operations in the area in the past, the establishment of the MPSA will focus the efforts to counter destabilizing activities in the region and improve security while long-term initiatives mature.

An Internationally Recommended Transit Corridor (IRTC) has been established in the Gulf of Aden by the CMF, in cooperation with the European Union Naval Force (EURNAVFOR) Atalanta and the United Kingdom Maritime Trade Organization (UKMTO). It is recommended that vessels desiring to avoid contact with armed pirates use the IRTC, which is best seen on the chart.

For further information on the IRTC, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Red Sea and the Persian Gulf—Cautions.

Ras Bab al Mandeb to Adan as Sughra (Little Aden Peninsula)

8.2 **Ras Bab al Mandeb** (12°41'N., 43°28'E.) is a prominent wedge-shaped headland. Shaykh Malu (Oyster Island), 23m high, lies on the coastal reef close WSW of the headland. It is connected to the mainland by a rocky ledge.

A shoal, with depths of less than 10m, fronts the SSW side of Shaykh Malu.

The coast between Ras Bab al Mandeb and Jabal Hasis, 4miles E, is indented with small bays.

Ghubbat al Haykah (12°39'N., 43°45'E.) is entered between Jabal Hasis and Ras al Arah, 24 miles ESE. The coast of this bay is low and sandy. The shore is fringed by a reef, and depths of less than 5.5m extend up to 1.5 miles seaward.

Caution.—Vessels in this vicinity should stay outside the 20m curve by day and proceed in depths of not less than 25m at night.

8.3 Ras al Arah (12°36'N., 43°55'E.), low and sandy, is rounded and difficult to distinguish. A large house stands near the coast about 2 miles N of this point. An isolated shoal patch, with a depth of 32m, was reported to lie about 10 miles SW of Ras al Arah.

Between Ras al Arah and Jabal Marsa (Ras Qawah), 30 miles E, the coast is low and sandy with a few shrubs, but in places there are some rocky points and cliffs of sand, 6 to 9m high.

A shoal bank of hard sand, with depths of 3.9 to 10.9m at its outer edge, extends up to 3 miles offshore between Ras al Arah and Khawr al Umayrah, 12 miles E. This bank is steep-to at its outer edge and the sea breaks in places during heavy weather.

A conical hill stands near the coast, about 2 miles NW of the entrance to Khawr al Umayrah. This hill, reported to be conspicuous from SE, is black on its summit and E side.

Several vessels have been wrecked between Ras al Arah and Khawr al Umayrah. Vessels should stay in depths of not less than 30m by day and proceed in depths of not less than 40m at night. Discolored water has often been seen in this locality.

8.4 Khawr al Umayrah (12°38'N., 44°09'E.) is almost landlocked by a long and narrow spit. This sandy spit, which nearly covers at HW, extends WNW from the SE end of the inlet. The narrow entrance to the inlet has a least depth of 0.9m and is only used by local small craft and boats. Foul rocky ground extends up to 2 miles W of the entrance.

Anchorage.—Good anchorage can be taken, in a depth of 11m, mud and sand, within the bight lying NW of Ras al Arah. The coast here is rather steep and the anchorage is sheltered from the strong winds of the Northeast Monsoon. Jabal am Wusid (Barn Hill) bearing between 003° and 007° leads to this roadstead.

8.5 Jabal Marsa (Ras Qawah) (12°40'N., 44°25'E.) is a small projection, 44m high, which appears as a black well-defined bluff.

Jabal am Birkah and Jabal Sumarah are two conspicuous sand hills, with dark summits, standing about 4 miles NW and 5 miles WNW, respectively, of Jabal Marsa. Jabal am Birkah, a double-peaked saddle hill, rises to heights of 190 to 208m. Jabal Sumarah is 168m high.

Bandar Imran (12°45'N., 44°35'E.) is entered between Jabal Marsa and Ras Imran, 19 miles ENE. Ras Imran is a rocky promontory, 224m high. A sandy plain covered with bushes backs the low shore of this bay for a distance of about 10 miles.

The bay is free from dangers, with the exception of a 4.3m patch lying about 6 miles NW of Ras Imran and 1 mile offshore.

Anchorage, sheltered from E winds, can be taken, in depths of 4 to 9m, sand and shells, NW of Ras Imran, between 0.5 mile and 2 miles offshore.

Jazirat Aziz (12°44'N., 44°43'E.), a small rocky island, lies close SW of Ras Imran and is separated from the latter by a narrow channel encumbered with rocks. This island is 107m high and radar prominent.

Bandar Fuqum (12°45'N., 44°46'E.) is entered between Ras Imran and Ras Fuqum, the W extremity of Adan as Sughra, about 6 miles E. The shores of this bay are low and swampy. A tomb with a few fishermen's huts nearby stands on the W side of the bay. A small dark islet lies close offshore in the vicinity of the tomb and forms two boat anchorages at its W side.

Jazirat al Juhub (12°44'N., 44°46'E.), lying about 2 miles E of Ras Imran, is a round islet. A drying rock lies about 0.3 mile ESE of this islet.

Adan as Sughra (Little Aden Peninsula) to Aden Harbor (Bandar at Tawahi)

8.6 Adan as Sughra (Little Aden Peninsula) (12°45'N., 44°52'E.) is a mountainous mass that resembles the Aden Peninsula to the E. From a distance, both these two peninsulas appear as islands.

Jabal al Muzalqam (12°45'N., 44°52'E.), the summit of Adan as Sughra, 349m high, stands in the center of the peninsula and is conspicuous. Jabal Ihsan is a conspicuous granite double peak, 215m high, rising on the E end of the peninsula, 2 miles E of the summit. A deep ravine winds for 3.5 miles through the center of Adan as Sughra from Ra's Fuqum (12°44'N., 44°49'E.), the W end of the peninsula.

Bandar Shaykh (12°44'N., 44°53'E.), a bay, is entered between Ra's Mukallab Hadi and the S extremity of a small peninsula, 0.6 mile ENE. The bay provides anchorage, in depths of 5.5 to 10m, during offshore winds.

Ras Abu Qiyamah (12°44'N., 44°54'E.) is located 1 mile ENE of Ra's Mukallab Hadi. This point can easily be recognized by the conspicuous fort standing on a hill, about 0.3 mile NNW of its S end.

The tomb of Sheikh Ghadir, with a white temple, stands about 0.5 mile NNW of Ras Abu Qiyamah.

Khawr Ghadir (12°44'N., 44°54'E.) is entered between Ras Abu Qiyamah and a promontory, 1 mile NE. An islet, 22m high, lies 0.3 mile S of the promontory and is connected to it by a shallow spit. The bay affords anchorage, in depths of 5.5 to 16m, sand.

Four conspicuous chimneys stand near the NW shore of Khawr Ghadir; a prominent flare is situated about 0.4 mile W of them.

8.7 Jazirat Salil (12°44'N., 44°55'E.), an islet, 18m high, lies 0.3 mile offshore and is fronted by a shallow bank, with rocks, awash, on its E side. A light is shown from a framework tower, 4m high, standing on the summit. The light structure is reported to be very difficult to distinguish because its dark color blends with the brown background of the surrounding mountains on the mainland.

Square Island (12°45.4'N., 44°55.1'E.), 43m high, lies 1 mile N of Jazirat Salil and close off the E side of Adan as Sughra, to which it is connected by a shallow bank. A beacon stands on the E part of this island.

Pinnacle Rock lies on a shallow rocky bank, 0.4 mile NE of Square Island, and is prominent. It is 21m high and marked by a beacon.

Peaked Rock, 7 m high, lies close S of Pinnacle Rock, on the S part of the bank.

The **Aden Peninsula** (12°46'N., 45°01'E.), connected to the mainland by a low isthmus, is high, rocky, and volcanic. It is also radar conspicuous.

Several precipitous peaks stand near the center of this peninsula. Jabal Shamsan (12°46.6'N., 45°00.5'E.), 531m high and

Aden Outer Harbor—Adan as Sughra (Little Aden Peninsula)

Aden Outer Harbor—Power plant chimney

Aden Outer Harbor—Stranded wreck 1 mile NE of Ras Marbut (Steamer Point) Breakwater

Aden Outer Harbor—Gold Mohur Bay

surmounted by a disused signal station, is conspicuous. Shamsan South, 553m high, stands 0.5 mile SSE of Jabal Shamsan and is also conspicuous.

The Aden Peninsula is connected to the mainland by a low isthmus, on which stands the town of Khormaksar and an airport. Several radio masts, 41 to 183m high, stand on the isthmus and display warning lights when night flying is taking place.

8.8 **Sirah** (12°47'N., 45°03'E.), with a round tower on its summit, is a small rocky island, 80m high, lying off the E side of the Aden Peninsula. A narrow causeway connects the SW side of this island to the peninsula.

Front Bay, encumbered by a sand bank, lies W of Sirah and is backed by the town of Aden. The town, a main business center, consists of a large number of whitewashed houses built on a plain, with steep hills on all except the seaward side.

Ras Marshaq (12°45'N., 45°03'E.), lying 1.3 miles S of Sirah, is the S extremity of a narrow radar-conspicuous promontory. A light is shown from a tower, 26m high, standing 0.2 mile N of the point.

Jazirat Denafa (Round Island) (12°45'N., 45°00'E.), 34m high, lies close off the S side of the peninsula and is connected to the shore by a reef and a shallow bank.

Elephant's Back (12°46'N., 44°59'E.), a small promontory, extends from the SW side of the peninsula. A light is shown from a round building, 4m high, standing on the summit of this promontory.

Tides—Currents.—Between the Aden Peninsula and the 200m curve, the current appears to set WNW at a velocity of about 2 knots during the Northeast Monsoon. The current sets N off the E side of the Aden Peninsula during both monsoons.

Anchorage.—Anchorage can be taken off the E side of the Aden Peninsula, in regular depths of 9 to 33m, NE of Sirah and the town of Aden.

During the Northeast Monsoon, a heavy swell sets in, but from June to August, during W winds, there is good anchorage and smooth water under the lee of Sirah.

Caution.—Several submarine cables, which may best be seen on the chart, extend seaward from a point located at the W end of the Aden Peninsula, about 0.3 mile N of Elephant's Back Light.

A wreck, with a depth of 15.3m, lies in the approach to Aden Harbor in the vicinity of the pilot boarding position, about 1.9 miles ESE of Jazirat Salil Light.

A spoil ground area, the limits of which may best be seen on the chart, lies centered 5 miles S of Elephant's Back Light.

An ammunition dumping ground area, the limits of which may best be seen on the chart, lies centered 11 miles SE of Ras Marshaq Light.

Incidents of armed robbery have been reported against ships proceeding in the W and SE parts of the Gulf of Aden. Vessels of any size should be aware of the risks involved when navigating in these waters at speeds of less than 12 knots.

Aden Harbor (12°47'N., 44°57'E.)

World Port Index No. 48190

8.9 Aden Harbor (Bandar at Tawahi) is a fine natural harbor and a port of entry located between Adan as Sughra (Little Aden Peninsula) on the W and the Aden Peninsula on the E.

The port, consisting of an Outer Harbor and an Inner Harbor, is essentially a transshipment port and an important fueling station. It affords shelter from all directions except from the S.

Port of Aden Home Page

http://www.portofaden.net

Winds—Weather.—Sandstorms occur from May to August. They come at sunset from a N or NNW direction and at times blow hard until about 2200. The air is then so thick with sand that it is impossible to see more than a short distance.

Except for a dense cloud of sand banking up from the N and NW 1 or 2 hours before sunset, little forewarning is given.

About 2 hours after the beginning of the storm, there is a calm, and after a short interval, the wind blows hard from the S for another 2 hours; the sand then clears and the wind lessens.

During August, dense mists occur at times; the high land is only visible then for a short distance.

During the Southwest Monsoon, hot sandy winds prevail, but on the W side of the peninsula, cool breezes are from seaward.

During the Northeast Monsoon, the climate of Aden is cool and pleasant, especially from November to January. During the Southwest Monsoon, it is very hot, damp, and oppressive. The settlement is exceptionally free from infectious diseases and epidemics.

Tides—Currents.—Within the Gulf of Aden, the tides are generally diurnal and rise to a maximum height during springs of about 2.2m at Aden. The tidal range is about 1.3m. However, at times, the tides may be subject to a large diurnal inequality, which may increase or diminish the rise.

About the time of the moon's quarter, there is frequently only one HW and one LW in the 24 hours.

The tidal current on the flood tide, during both monsoons, sets strongly NE past Ras Marbut until it is checked by the drying bank on the NE side of the harbor. It is then deflected E and NE into the upper reaches of the harbor. At about half flood, a distinct E set is experienced between Aliya Island and the mainland NW.

On the ebb tide, the current curves W by Jerama Beacon (12°48'N., 45°00'E.) and then flows along the S side of the harbor. It has a more S set when past Ras Marbut.

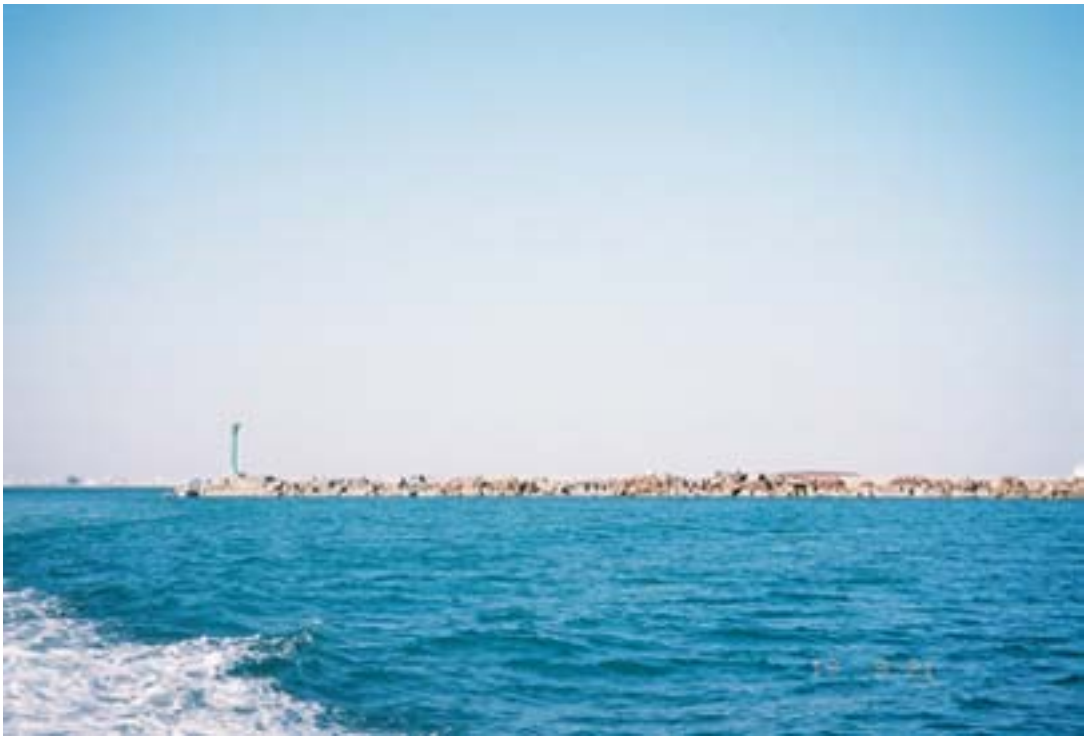
The estimated average maximum velocity at springs is 1.5 knots, but it depends on the strength and direction of the monsoon.

Depths—Limitations.—The port limit, which may best be seen on the chart, is represented by a line extending SSE from Ras Abu Qiyamah (12°44'N., 44°54'E.), then extending E along the latitude of 12°42'N, and finally extending NNE to Jazirat Denafa (Round Island) (12°45'N., 45°00'E.).

The facilities of Aden Harbor are initially approached through an entrance channel, 200m wide and dredged (1998) to a depth of 15m, beginning about 2 miles E of Jazirat Salil Light. It has been reported (2008) that the entrance channel may be widened to a width of 265m.

Outer Harbor.—The Outer Harbor includes all waters lying between the port limit and a line extending 308°40' from the head of the breakwater at Ras Marbut.

Aden Outer Harbor—Ras Tarshayn



Aden—Ras Marbut (Steamer Point) Breakwater from SW

Aden—Stranded wreck close NE of Ras Marbut (Steamer Point) Breakwater

Aden Inner Harbor—Pilot office (right) and signal tower

Aden Inner Harbor—Flint Island

Aden Inner Harbor—Aden Container Terminal

Aden—Ras Marbut (Steamer Point) Breakwater Light

The port facilities initially are approached through the above-described entrance channel. A channel, dredged to a depth of 14.7m (1987), branches NW from the entrance channel and leads to Little Aden Oil Harbor.

Little Aden Oil Harbor has four oil berths situated on its SW side. A dry cargo berth and an LPG berth are located W of the oil berths. Information on these facilities is given in the accompanying table titled **Aden—Little Aden Oil Harbor Berthing Facilities**.

Inner Harbor.—The Inner Harbor includes all waters NE of a line extending 308°40' from the head of the breakwater at Ras Marbut.

The port facilities in the Inner Harbor are initially approached through the above-described entrance channel. The channel continues NE past the Little Aden Oil Harbor channel until reaching the Inner Harbor facilities.

Ma'allah Wharf, Home Trade Quay, and Aden Container Terminal are the main facilities located in the Inner Harbor. Information on these facilities is given in the accompanying table titled **Aden—Inner Harbor Berthing Facilities**.

In the Inner Harbor E of the Home Trade Quay are 800m of lighter and dhow moorings, with depths of 1.8 to 2.7m alongside.

Aden Gulf Terminal, a new finger pier designed to handle bulk wheat vessels, extends WNW from the W side of Maalla Terminal. Berth 1, the N berth, can accommodate vessels up to 80,000 dwt, with a maximum length of 260m and a maximum draft of 13.5m. Berth 2, the S berth, can accommodate vessels up to 35,000 dwt, with a maximum length of 190m and a maximum draft of 11.5m.

Aden Inner Harbor—Silos and tanks W of Aden Container Terminal

Aden Inner Harbor—Bunker pier close W of Aden Container Terminal

Aden Inner Harbor—Clock Tower and radio mast on Aman Kal

Aden Inner Harbor—Bunker pier close W of Aden Container Terminal

Aden Inner Harbor—Ship Repair Yard (foreground) and Aden Gulf Terminal (background)

There are also several mooring buoy berths, for bunkering or working cargo, within the Inner Harbor. A few of these can accommodate vessels up to 50,000 dwt, with maximum lengths ranging from 180 to 274m and a maximum draft of 10.7m, depending on the height of the tide.

Aspect.—Adan as Sughra and the Aden Peninsula are very prominent; there is little difficulty in identifying the approach to the port.

Ras Marbut (Steamer Point) (12°47.2'N., 45°58.4'E.), from which a breakwater extends, is located 1.6 miles NW of Elephant's Back Light. A stranded wreck, 7m high, lies close NE of the breakwater head.

Aden—Outer Harbor Berthing Facilities

Berth	Length	Depth	Remarks
Oil Berth No. 1	270m	13.5m	Loading refined products. Vessels up to 85,000 dwt, with a maximum length of 260m and a maximum draft of 12.25m at HW, can be accommodated alongside.
Oil Berth No. 2	220m	11.5m	Loading refined products. Vessels up to 65,000 dwt, with a maximum length of 180m and a maximum draft of 11.0m at HW, can be accommodated alongside.
Oil Berth No. 3	250m	11.5m	Loading refined products. Vessels up to 65,000 dwt, with a maximum length of 235m and a maximum draft of 11.0m at HW, can be accommodated alongside.
Oil Berth No. 4	300m	15.8m	Discharging crude oil and loading refined products. Vessels up to 110,000 dwt, with a maximum length of 286m, can be accommodated alongside. Vessels over 85,000 dwt may only maneuver during daylight hours, except with prior permission from the harbormaster.
Berth No. 5	175m	11.0m	LPG and dry cargo. Located W of Oil Berth No. 4. Vessels up to 25,000 dwt, with a maximum length of 150m, can be accommodated alongside.
Berth No. 6	175m	11.0m	LPG berth. Located close W of Berth No. 5. Vessels up to 25,000 dwt, with a maximum length of 150m, can be accommodated alongside.

Aden—Outer Harbor Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Ro-ro berth	120m	11.0m	Located E of Berth No. 5. Vessels up to 3,500 dwt, with a maximum length of 100m, can be accommodated alongside.

Aden—Inner Harbor Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Ma'allah Wharf			
Berth No. 1	187.5m	11.0m	Container berths. Vessels up to 40,000 dwt, with a maximum length of 190m and a maximum draft of 10.4m, can be accommodated alongside.
Berth No. 2	187.5m	11.0m	
Berth No. 3	187.5m	11.0m	General cargo and bulk cargo berths. Vessels up to 40,000 dwt, with a maximum length of 190m and a maximum draft of 10.4m, can be accommodated alongside.
Berth No. 4	187.5m	11.0m	
Ro-ro berth	150m	7.6m	Located at the W end of Ma'allah Wharf. Vessels up to 14,000 dwt, with a maximum length of 135m and a maximum draft of 7.0m, can be accommodated alongside.
Home Trade Quay			
Berth No. 5	125m	6.7m	Located E of Ma'allah Wharf. Vessels up to 10,000 dwt, with a maximum length of 150m and a maximum draft of 6.1m, can be accommodated alongside.
Berth No. 6	125m	6.7m	
Aden Container Terminal			
Berth No. 1 Berth No. 2	350m 350m	16.0m 16.0m	Located on the N side of the Inner Harbor. Vessels up to 100,000 dwt, with a maximum length of 350m and a maximum draft of 14.0m, can be accommodated alongside. It has been reported (2009) that terminal expansion plans include the initial construction of 400m of new berthing space, followed by the construction of an additional 900m of berthing space.

A conspicuous signal station tower, 46m high, stands close E of Ras Marbut. A prominent clock tower is situated on a hill, 43m high, about 0.5 mile ENE of the signal station tower.

The entrance channels are marked by lighted buoys and beacons, and are indicated by lighted ranges.

Pilotage.—Pilotage is compulsory for vessels over 200 gross tons and is available 24 hours. Pilots, who can be contacted on VHF channels 6 and 8, board all vessels 0.4 mile S of the seaward entrance to the dredged channel, about 2 miles ESE of Jazirat Salil Light.

In normal circumstances, pilotage presents no special difficulties, but during the Southwest Monsoon, sand storms may occur suddenly and violently.

Regulations.—Vessels should send their ETA at least 48 hours prior to arrival. The ETA message should include the following information:

1. ETA.
2. Master's name.
3. Vessel's nationality.
4. Vessel's name and call sign.
5. Gross tonnage and dwt.
6. Maximum draft.
7. Type of cargo.
8. Reason for call.
9. Security level on board (if not at Level 1).
10. Declaration of any cargo on board.

Vessels departing from ports less than 48 hours sailing time from Aden shall send the ETA message upon departure from that port.

Aden Pilot Boat

Vessels carrying dangerous cargo, whether for discharge or only in transit, must contact the Port Authority 24 hours prior to arrival, giving the following information:

Aden Inner Harbor—Container Terminal/Home Trade Quay

1. Category of dangerous cargo.
2. Quantity.
3. Location on board.

All vessels underway in the Inner Harbor or entrance channel are not to pass each other.

If more than one vessel is entering or leaving the Inner Harbor or Oil Harbor, or navigating in the dredged channels leading into those harbors, every following vessel shall keep at least 0.4 mile astern of the ship ahead.

No vessel shall, except with the permission of the port officer, be navigated in the Inner Harbor, Oil Harbor, or the dredged channels leading to those harbors without a depth of 0.6m or more below the keel, or, in the case of a vessel with a draft over 11.3m, without a depth of 1.2m or under keel.

Vessels with a draft of 3.7m or more must not remain at single anchor in the Inner Harbor without permission.

Generally, tankers with drafts over 9.1m are not allowed to enter the harbor at night.

The following vessels may enter or leave the Inner Harbor during daylight hours only:

1. Tankers carrying petroleum products with a flashpoint below 23°C.
2. Tankers in ballast but not gas-free, meaning the oxygen content in its cargo tanks is greater than 8 per cent.
3. LPG vessels which are not gas-free.
4. Vessels carrying over 3,000 kg of Class I dangerous cargo.

Signals.—Signals controlling traffic in the dredged channel leading through Outer Harbor are shown from the top mast of the signal station at Ras Marbut. Signals controlling traffic entering or leaving the Inner Harbor are shown at the yardarm or triatic stay.

The signals are given in the accompanying table titled **Aden Harbor—Traffic Signals**.

Contact Information.—Contact information can be found in the table titled **Aden Harbor—Contact Information**.

Anchorage.—The Outer Harbor provides anchorage for a number of vessels, in depths 6 to 20m, clear of the dredged entrance channels and the prohibited area.

Vessels are cautioned that disused submarine cables may exist SE of a line extending NE from Jazirat Salil Light to **Ras Tarshayn** (12°46.6'N., 44°58.3'E.) and passing through position 12°45'N, 44°57'E.

An anchorage designated for deep-draft vessels, which may best be seen on the chart, has been established, in depths of 13 to 15m, about 0.8 mile ENE of Jazirat Salil Light.

Directions.—When approaching from W, vessels should pass 1 mile S of Adan as Sughra and then steer for the entrance of the dredged channel. At night, vessels can approach the dredged channel in the white sector of Elephant's Back Light.

When approaching from E, vessels should pass 1 mile S of the Aden Peninsula and then steer for the entrance of the dredged channel. At night, vessels should pass 1.5 miles S of Ras Marshaq Light and then head W for the entrance channel.

A forked channel lies 1 mile inside the outer entrance. The channel continues WNW towards Little Aden Oil Terminal or NNE towards the Inner Harbor and the Aden Peninsula. Range lights, in line bearing 300°, lead towards Aden Oil Terminal.

Caution.—A prohibited anchorage area, with a radius of 0.5 mile, lies centered about 0.5 mile SSE of the seaward entrance

Aden Inner Harbor—Approach to Container Terminal/Home Trade Quay (left) and silos (center)

Aden Inner Harbor—Stranded wreck close ESE of Aden Container Terminal

Aden Inner Harbor—Marzuk Kabir (Twin Rocks)

to the dredged channel, about 1.9 miles ESE of Jazirat Salil Light.

A wreck, with a depth of 4.5m, lies about 1 mile W of Ras Marbut (Steamer Point) and is marked by a lighted buoy.

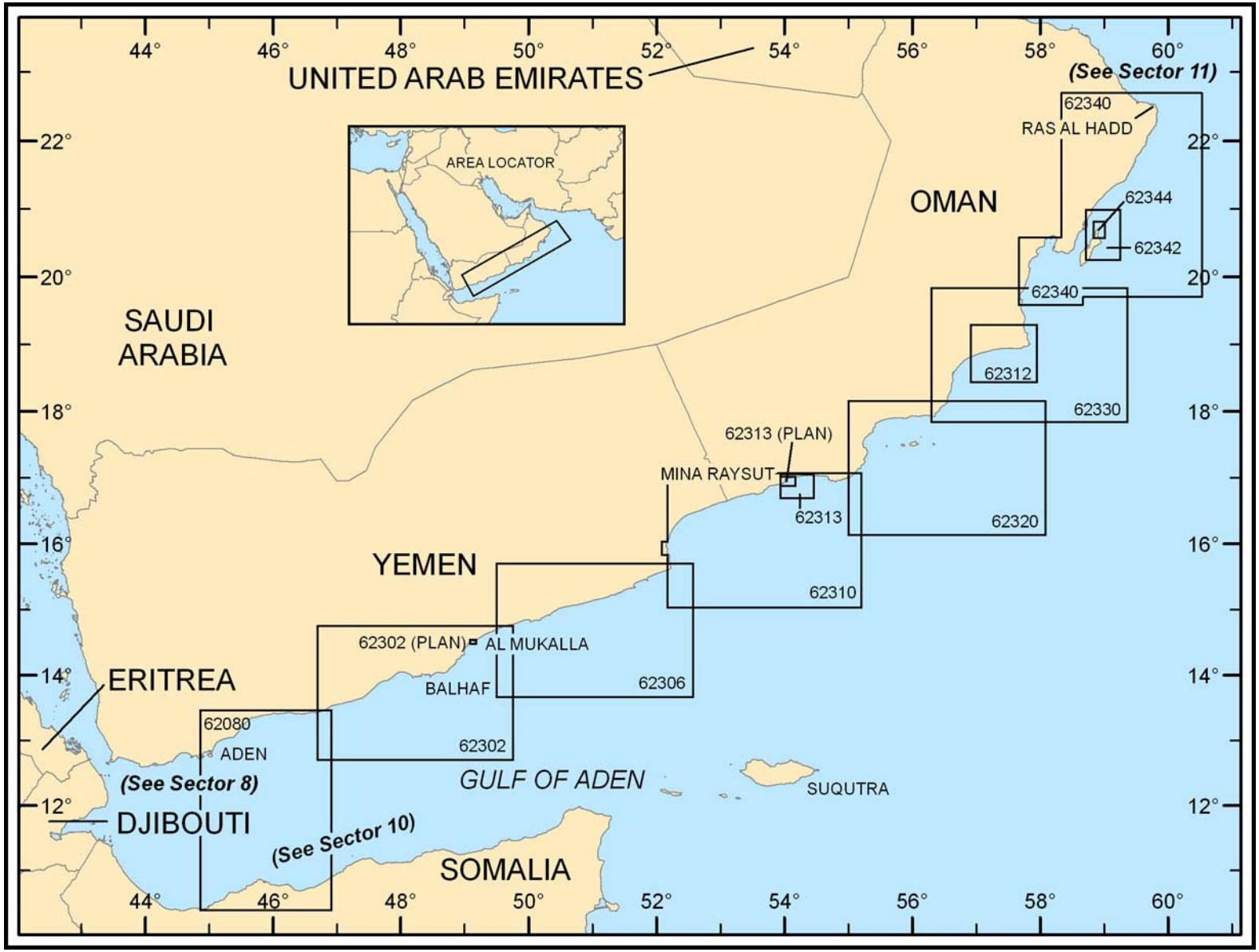
Aden Harbor—Traffic Signals		
Day	**Night**	**Meaning**
Outer Harbor		
Two black balls, vertically disposed	Two red lights, vertically disposed	The channel is clear to enter.
Cone, point up	One green light	The channel is clear to leave.
Inner Harbor		
3rd Substitute	One white light over one red light	A vessel is entering.
2nd Substitute	One red light over one white light	A vessel is leaving.

Aden Harbor—Contact Information				
	Port Authority	**Port Control**	**Control Tower**	**Harbormaster**
Call sign	—	Aden Port Control	—	—
VHF	—	VHF channels 13 and 16	—	—
Telephone	967-2-202666 967-2-202668	—	967-2-202262	967-2-202850
Facsimile	967-2-205805 967-2-203521	—	967-2-202238	967-2-206241
E-mail	info@portofaden.net	—	—	—

Another wreck, with a least depth of 8m, lies about 0.8 mile SSW of Ras Tarshayn.

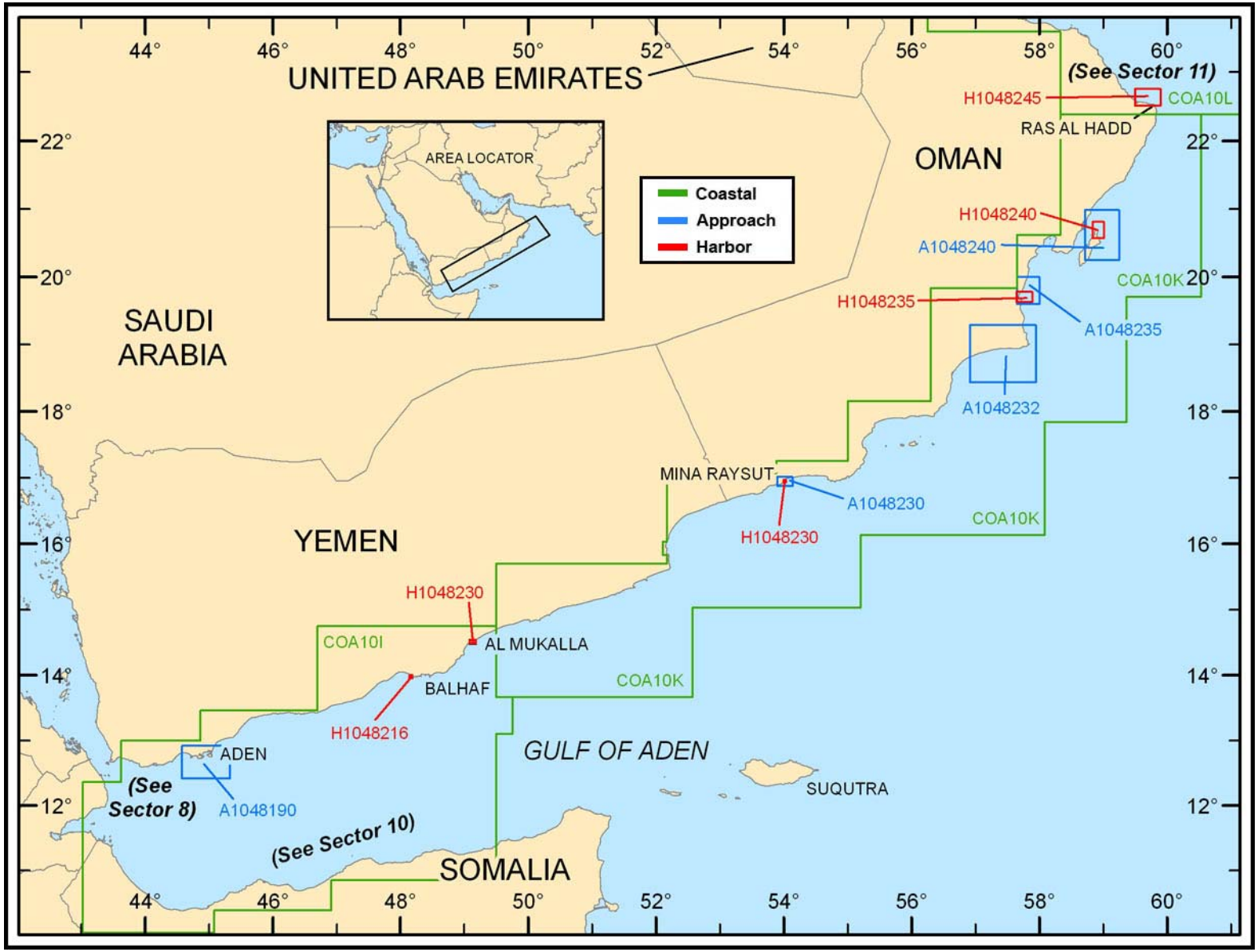
Magnetic anomalies have been reported top exist in the vicinity of Aden.

Vessels are advised that numerous uncharted stranded and dangerous wrecks are located in the inner harbor.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **9** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 9

YEMEN AND OMAN—ADEN HARBOR TO RAS AL HADD

Plan.—This sector describes the coasts of Yemen and Oman along the N side of the Gulf of Aden from Aden Harbor (Bandar at Tawahi) to Ras al Hadd, the S entrance point of the Gulf of Oman. The descriptive sequence is from W to NE.

General Remarks

9.1 Winds—Weather.—In the Gulf of Aden, the Northeast Monsoon begins early in November; the steadiness of wind and weather offers a great contrast to the Southwest Monsoon. Winds from the ENE, and E prevail, turning SE near the entrance of the Red Sea.

In late December and early January, it frequently attains moderate gale force and may be accompanied by heavy rain.

During the remainder of January, February and March, E and ENE winds prevail. These are the 3 months of heaviest trade in this region and the weather is generally clear and cool with occasional rain.

The Southwest Monsoon begins about the middle of April, somewhat earlier in the W than in the E part of the Arabian Sea. From its inception and through the whole of May, the monsoon is feeble and variable with calm periods, but on the whole SW winds predominate during June; these winds increase progressively and prevail with great regularity through the months of June, July, and August.

During September, the winds remain predominately SW, but with some variable winds and periods of calm interspersed.

In the intervals between monsoons, which are known here as tangambili, the light and variable winds are often interrupted by atmospheric disturbances and squalls.

During the beginnings and ending of the transition periods, there is frequently a brief but violent resumption of the monsoon, often accompanied by rain and lightening.

The Southwest Monsoon is very strong and is accompanied by thick hazy weather over the area between Ras Air and Suqutra, while the Northeast Monsoon brings much lighter winds and fair weather.

Along the N coast of the Gulf of Aden, the winds in summer are often light and variable, and are somewhat fresher by day than by night. On the Arabian coast, to the E of Ras Qusay'ir, the winds of the Southwest Monsoon are much stronger than they are in the Gulf of Aden.

They are strongest between Mirbat and Al Misirah and reach their greatest force in Kuria Muria Bay during the month of July.

The Khamsin of Egypt is a dry wind, although the name is also applied to a dry N wind which occasionally blows in the Gulf of Aden during the Southwest Monsoon.

As the monsoon fails, this wind, without warning, sets in from the N with great violence and usually continues for 3 or 4 hours. It is accompanied by clouds of sand and lighting. The barometer rises quickly about 4 millibars.

Near the end of the Southwest Monsoon, squalls occur near Aden which, though accompanied by thick weather, differ from the Khamsin in that they carry no sand and the barometer doesn't rise.

The Shamel, which occurs in the Gulf of Aden, is a wind primarily of the Southwest Monsoon period. It is usually N, but may come from the E or W, and prevails periodically during successive days. In the Gulf of Aden, the wind rarely last more than 3 days.

The E coast of Arabia, near the Gulf of Oman, is reached by the Great Shamal of the Persian Gulf. This very hot and dry wind is from the NW and blows almost without cessation during June and the first half of July. Skies are in general cloudless, but the air is hazy and filled with very fine dust which, at times, reaches far out to sea.

A strong land wind, known locally as the Belat, occasionally affects the Arabian coast between Ras Sajir and Al Masirah, usually occurring between the middle of December and the middle of March. This wind is N or NNW. It blows for 1 to 3 days, occasionally longer, and is accompanied at first by the dark red clouds of a heavy sandstorm, and throughout its course by hazy atmosphere.

The Belat nearly always begins between midnight and 0400 with a light breeze, which increases to a moderate gale in about an hour. It blows hardest on succeeding nights between 2100 and 2200, and usually dies out suddenly about the middle of the day.

In some years, this wind is rare, while in other years it occurs frequently. A faint hazy arch over the land in the evening, or the wind shifting toward the land, sometimes in sudden gusts, early in the night, generally indicates the Belat's approach.

Thunderstorms are infrequent in these waters. Vessels observe them occasionally in all months during infrequent rains.

Over the Gulf of Aden and the S part of the Red Sea occur the highest air temperatures known on any water surface, except the Persian Gulf. On the open water of the two S areas, air temperatures rarely exceed 38°C.

There is little fog observed within the area described in this sector. what little fog that does occur is rarely dense and usually disappears rapidly during the morning.

In the Gulf of Aden, haze is infrequent, except in the summer, when it occurs in 12 to 15 per cent of the observations.

Exceptional visibility is recorded in 1 out of 4 to 6 of the observations except in July, when it occurs in 1 out of 10 observations.

Dust storms may reduce the visibility to 1 mile. Refraction phenomena in all forms are comparatively common in the Gulf of Aden.

The mirage may be of a simple type or may be any of the complicated types of looming, sinking, distortions, and multiple images common to hot coasts and their adjacent waters.

Tides—Currents.—Surface current speeds and directions throughout the area of this sector are mainly influenced by the Northeast Monsoon and the Southwest Monsoon.

In the Gulf of Aden, during October through April, the currents set SW at speeds ranging from 0.2 to 1 knot, depending

on the strength of the wind.

During June, July, and August, the currents set ENE at speeds of about 1 knot near the middle of the Gulf, and up to 2 knots close to the Arabian coasts. Maximum speeds of about 3 knots have been observed along the coast in July and August.

Depths—Limitations.—The depths in the approach to this part of the coast are deep and clear. The 200m curve lies between l.5 miles and 10 miles offshore, except in the vicinity of Aden, where it extends up to 17 miles seaward, and S and SW of Ras Fartak, where it extends about 23 miles seaward.

Aspect.—Jabal Maufaja (13°40'N., 45°18'E.), 2,240m high, rises about 36 miles N of **Ras Saylan** (13°03'N., 45°24'E.) and is the W extremity of a range that extends about 60 miles E. This range then continues with an irregular outline for 80 miles to the NE.

Jabal al Fadhli, a lofty range broken into peaks and bluffy points, stands 5 miles inland and extends 35 miles E from a location about 30 miles ESE of Jabal Maufaja. Jabal al Urus, 1,730m high, is the highest part of this range. From the S, this peak is easily identified as a fairly sharp top, but from the E it appears as a concave summit standing well to the left of the apparent highest part of the range.

Knob (13°36'N., 46°07'E.), a conspicuous peak, rises about 14 miles W of the E end of Jabal al Urus to a height of 1,219m. It has steep sides and is separated from the main range by a deep cleft. A barn-shaped peak, 1,204m high, stands 6 miles E of Knob and is more conspicuous from the E.

The valleys in this vicinity are thickly covered with vegetation.

Black Hill (13°46'N., 46°59'E.) has two well-marked peaks, with the E peak being the highest. Jabal Humairi, rising about 24 miles ENE of Black Hill, is a rugged range extending about 16 miles to the E. Its 1,611m high summit can be easily identified when viewed from the SE or SW.

A peak, 914m high, stands about 58 miles E of Jabal Humairi, near the seaward end of a mountain range, and is a good landmark when seen from the WSW. From the S, this peak appears to be the W summit of the range.

From a position N of **Al Mukalla** (14°13'N., 49°07'E.), a high range of mountains extends to the E, paralleling the coast about 10 to 15 miles inland.

Jabal Dhuba is isolated, oblong, and table-topped. It stands 20 miles ENE of Al Mukalla and 1 mile inland. This mountain is a good mark.

Jabal Yucalif, rising about 13 miles ENE of Jabal Dhuba and 3 miles inland, is a conspicuous isolated hill. The ruins of a wall and terrace stand on this hill.

Jabal al Hamum, a sand hill topped by a few trees, stands 7 miles NNW of Ras Ba Ghashwah, about 60 miles ENE of Al Mukalla.

One of the most noticeable features of the S coast of Arabia is a series of three horizontal outcroppings of black basalt on the plains between **Raydat Ibn Abd al Wadud** (15°26'N., 50°26'E.) and Wadi Masila, 36 miles E. Each outcropping has one or more cones about 30m above the level of the ground. Around each cone is a low field of basalt, which contrasts markedly with the light color of the plains. Some of the basalt has made its way to the coast through the watercourses and appears as black rocks. These show up well against the white limestone on either side.

The second cone stands 9 miles E of the first and 3 miles inland. The E cone stands near Wadi Masila. The discharge from these two connect and the discharge from the latter nearby extends almost to the Wadi Masila. Jabal Asad, 1,219m high, stands about 22 miles NE of Raydat Ibn Abd al Wadud.

There is a remarkable gap in the mountains SW of Jabal Asad and 10 miles inland. Jabal Jaihun, 914m high and detached, stands 50 miles ENE of Jabal Asad. This peak is conspicuous from the E and SE. A conspicuous conical peak, 579m high, stands near the coast about 17 miles SSE of Jabal Jaihun.

The Asses Ears, two conspicuous sugarloaf peaks, 561m high, stand on the W shoulder of this peak. These peaks appear as ears when bearing less than 022° but are obscured when bearing less than 295°. Behind the above peaks, the land rises gradually until it reaches the coastal range.

The Fartak Range, 609 to 914m high, extends W from **Ras Fartak** (15°38'N., 52°16'E.). Vertical cliffs rising to heights of about 580m extend 8 miles N from Ras Fartak and form the greatest escarpment on the SE coast of Arabia. The cliffs are barren except near the summits, where the vegetation is mainly on the W side. Jabal al Fatk, 609m high, extends W from a position about 55 miles NNE of Ras Fartak and joins the Fartak Range.

To the E of Jabal al Fatk, the Athub Range and Jabal Qamar, 914 to 1,219m high, extend irregularly E and approach the coast. Jabal Qamar, although apparently seen to be barren from a distance, is tree-covered.

Caution.—For details of Firing Practice Areas lying off the coast of Oman, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Numerous oil and gas exploration rigs, with associated pipelines and structures, may be encountered in the waters described in this sector.

Incidents of armed robbery have been reported against ships proceeding in the W and SE parts of the Gulf of Aden. Vessels of any size should be aware of the risks involved when navigating in these waters at speeds of less than 12 knots.

Further information on piracy, including information on the Internationally Recommended Transit Corridor (IRTC) established in the Gulf of Aden can be found under Indian Ocean—Cautions in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Middle East Merchant Vessel Voluntary Reporting System.—A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Red Sea and the Persian Gulf—Ship Reporting System.

Maritime Security Patrol Area.—The Commander, U.S. Navy Central Command has directed the establishment of a Maritime Security Patrol Area (MSPA) in the Gulf of Aden. For further information, see paragraph 8.1.

Ghubbat Saylan to Ras Sajir

9.2 Ghubbat Saylan (Ghubbat Sailan) (12°55'N., 45°13'E.), entered between the Aden Peninsula and Ras Saylan about 26 miles NE, is bordered by a flat sandy coast which

gradually rises toward the latter point.

A low plain, with numerous hummocks, backs this section of coast for some distance inland. This plain is partially covered by stunted bushes with a few low trees in places but has no prominent features.

Ras Saylan (13°03'N., 45°24'E.), low, round, and sandy, is marked by some palm trees. Several villages stand in the vicinity. Wadi Bana, dry during most of the year, flows into the sea at this point. A detached patch, with a depth of 6.5m, lies about 12 miles WSW of Ras Saylan and 2 miles offshore.

During both monsoons, a current sometimes rounds Ras Marshaq and sets N into Ghubbat Saylan at a rate of 2 to 4 knots. Care should be observed by vessels, especially those bound W, because in the past several vessels have been wrecked because of this set.

Between Ras Saylan and Shuqrah, 25 miles NE, the coast is sandy. Saddle Hill, rising 5 miles W of Shuqrah and 0.5 mile inland, is a good landmark.

Barrow Rocks (13°17'N., 45°38'E.), two rocky patches located about 5 miles apart and with depths of less than 2m, lie 4.5 to 7 miles SW of Shuqra and l.5 miles offshore.

9.3 Shuqrah (13°21'N., 45°42'E.), a district capital and port for the area, is divided into three sections by a strip of sand and scrub. The principal buildings stand in the middle part. These include the Shaikh's house and the largest mosque. A white mosque with a conspicuous minaret, 20m high, stands close W of the Shaikh's house. A small minaret stands at the E end of the town, near the foreshore. A large brown building, known as the Sultan's House, is situated midway between the E minaret and the Shaikh's house. A saltworks, well lighted at night, stands about 1 mile E of the town.

Good anchorage can be taken, in depths of 12 to 16m, about 1 mile offshore, with the Sheikh's house bearing about 010°. The current off the anchorage sets W on a rising tide. A break in the coastal reef, which is clearly visible from seaward, forms a boat harbor at Shuqrah and has depths of 1.8 to 4.6m. The current off Shuqrah sets to the W on a rising tide.

The coast between Shuqrah and **Maqatin al Kabir** (13°25'N., 46°26'E.), 43 miles E, is backed by a plain extending inland to the mountain ranges.

Maqatin al Saghin, a small boat anchorage, lies about 6 miles W of Maqatin al Kabiris and is formed by a projecting point. A spit, with a sunken rock, extends about 0.5 mile SSW from the point.

Maqatin al Kabir provides anchorage for small vessels with local knowledge on the W side of a rocky spit extending 0.4 mile S from the coast. This anchorage is sheltered from NE winds. Four above-water rocks stand on this spit and appear white from bird droppings. A black ruin, which appears as stones, lies about 0.2 mile N of the inner end of this rocky spit. The ruin is all that remains of the former settlement.

Maqatin al Kabir can be easily identified by two black hills standing close E and near the coast. A group of hills stands about 5 miles ENE of Maqatin al Kabir and forms a good mark, especially in hazy weather. The group appears as one hill when viewed from the E.

A vessel of 1,300 tons approached the anchorage by steering for the S extremity of the innermost above-water rock on a course of 045°. This vessel then anchored on this bearing, in a depth of 11m, at a distance of about 0.4 mile from the rock. The current off the anchorage sets W on a rising tide.

An obstruction was reported (1991) to lie about 23 miles SSW of Maqatin al Kabir.

Between Maqatin al Kabir and Ras al Qusaym, 84 miles ENE, the coastal plain is low and sandy and extends about 35 miles inland to the mountains, which are very irregular in outline.

9.4 Sambahiyah (13°23'N., 46°32'E.), located 6 miles E of Maqatin al Kabir, is a rocky point.

Ahwar, a town standing 10 miles NE of Sambahiyah, consists of a series of villages situated on a broad plain with high mountains rising to the N. Only the tops of the houses are visible from seaward.

Ras Aulaqi (13°24'N., 46°44'E.), located 13 miles E of Sambahiyah, is low and sandy. A conspicuous white rectangular guard house was reported (1964) to stand near the shore, about 4 miles W of Ras Aulaqi.

Al Hauta is situated on the coast close E of Ras Aulaqi; about 3 miles farther E is a large square tower, with a few houses near it.

Shaykh Hurba Tomb (13°36'N., 47°06'E.) stands on the bare shore about 23 miles ENE of Ras Aulaqi. It appears dark brown and is conspicuous from up to 12 miles offshore. Wadi Sanam, 12 miles E of the above tomb, cannot be seen beyond a distance of 3 to 4 miles.

Dives Shoal (13°26'N., 47°04'E.), lying about 5 miles SW of the tomb and about 3 miles offshore, has a least depth of 4.5m, sand. A shoal depth of 33m was reported to lie about 4.5 miles SE of Dives Shoal.

9.5 Al Irqah (13°39'N., 47°21'E.), which consists of a village and a small mosque, stands 15 miles E of Sheikh Hurba Tomb. A fairly small square tower, situated about 2 miles E of the village, is conspicuous. The village, the mosque, and the tower all stand on a low, round projection.

Ras Safwan (13°49'N., 47°36'E.), a slightly projecting point, is located about 15 miles NE of the tower at Al Irqah. It is thinly covered with bushes at the outer edge.

Al Hawarh, a small village situated about 2 miles NE of the point, has two square towers standing on a mound, each about 15m high. Small vessels with local knowledge can anchor in the slight coastal indentations between Ras Safwan and Jabal Makanati, about 6 miles NE.

Jabal Makanati (13°53'N., 47°40'E.), 61m high, is a projecting whitish-colored bluff, veined by dark strata and terminating in sand hills. A sunken rock lies close SW.

Ras Safwan, Al Hawrah, and Jabal Makanati are all reported to be good landmarks, especially in hazy weather. However, they are somewhat difficult to identify, particularly if the sun is shining from their direction.

Caution.—Fish traps lie from 3.5 to 10 miles offshore between Al Irqah and Ras al Usayday, the E entrance point of Ghubbat al Ayn.

9.6 Ghubbat al Ayn (13°59'N., 48°00'E.) is entered between Ras al Qusaym, located about 8 miles ENE of Jabal Makanati, and Ras al Usaydah, 22 miles E. Ras al Qusaym is a low, round, and sandy point.

Courtesy of Yemen LNG Company

Balhaf LNG Terminal

Ayn Ba Mabad, with a mosque, and Ayn al Juwayri are two villages standing close inland on the N side of the bight. These villages are difficult to identify from a distance because other villages are located in the vicinity. Jilah is a village standing on the NE side of the bight.

The bight is clear, except for some rocky patches, which extend up to 0.6 mile offshore near Jilah, and a shoal bank, which extends up to 0.5 mile offshore in the NE side. In places within the bight, depths of less than 20m extend up to 3 miles seaward. Ras al Usaydah, the E entrance point, rises 0.3 mile inland to a conspicuous dark, conical hill, 50m high. Three small rocky points project from this headland.

Black Barn, a prominent hill, stands 2 miles N of Ras al Usaydah. A conspicuous radio mast stands about 3 miles NE of the headland.

Caution.—Fish aggregating devices, each marked by a lighted buoy, are located in the approaches to Ghubbat al Ayn.

9.7 Rudum Terminal (13°58.7'N., 47°54.6'E.) (World Port Index No. 48214), located at the W side of Ghubbat al Ayn, consists of an SPM buoy, which can handle tankers up to 20,000 dwt. A submarine pipeline extends N from the berth to the mainland.

Yemen LNG Company (Balhaf) Home Page

http://www.yemenlng.com

Balhaf (13°58'N., 48°11'E.) (World Port Index No. 48216), a small town, stands at the head of a small bay on the W side of Ras al Usaydah.

Winds—Weather.—The LNG jetty is fully exposed to sea and swell during the Southwest Monsoon, from June to December. Wave heights may increase at a rate of 0.5m per hour, with the maximum wave height experienced during the afternoon.

Tides—Currents.—The mean maximum tidal range is about 1.5m; the mean minimum tidal range is about 0.4m.

Currents in the area are influenced by the monsoons but are generally weak, with rates of less than 0.5 knot. Currents normally parallel the coast but can be affected by the wind during prolonged periods of wind from the same direction.

Depths—Limitations.—An LNG terminal accommodates LNG vessels of 70,000 to 205,000m^3. The LNG Jetty is a T-head, on a SW-NE orientation, connected to the shore by a 600m-long trestle. Mooring dolphins are located on either side of the berthing face.

The complex also contains a Materials Offloading Facility Wharf (MOF Wharf), with a berthing length of 140m and a charted alongside depth of 8.5m. The facility is used by vessels up to 5,000 dwt to offload supplies for the terminal.

Aspect.—The town is conspicuous from the W, but not visible when bearing less than 040°. A prominent tower stands in the town, with a smaller one situated close S of it. Another tower stands near the coast, about 0.4 mile N of the town.

Courtesy of Yemen LNG Company

Balhaf LNG Terminal—Materials Offloading Facility

Balhaf LNG Terminal

A light, with a racon, stands E about 0.6 mile ENE of the root of the LNG Jetty.

Range lights lead to a turning circle, with a diameter of 180m, close W of the MOF Wharf breakwater.

A turning circle, with a radius of about 350m, and marked on its E side by lighted buoys, lies close NW of the LNG Jetty.

Pilotage.—Pilotage is compulsory for all vessels. The pilot boards near Fairway Lighted Buoy in position 13°59'03.6"N, 48°08'45.0"E.

Vessels should establish contact with the pilot on VHF channel 16 at the earliest opportunity to confirm the ETA and obtain berthing information. The pilot can also be contacted on VHF channel 13.

Regulations.—Vessels must send their ETA upon departure from the discharge terminal and then 48 hours, 24 hours, and 6 hours prior to arrival. All messages should be sent via facsimile or e-mail to both the LNG terminal and the agent, as follows:

1. Discharge terminal departure message—
   a. Vessel name and IMO number.
   b. Departure date and time upon Full Away On Passage (FAOP).
   c. ETA at the LNG terminal and arrival draft.
   d. Crew list.
   e. Total quantity to load.
   f. Estimated time for loading.
   g. Volume discharge and heel retain (m^3).
   h. Estimated remaining heel quantity (m^3).
   i. Targeting system spools pieces available on board (Y/N).
   j. Any known deficiencies affecting marine terminal performance.
   k. Any known special requests affecting marine terminal operations.
   l. Bunkers remaining on board (fuel oil/diesel oil) at FAOP.

   If the ETA changes by more than 6 hours after sending the terminal departure message, vessels shall promptly advise the terminal of the revised ETA.
2. Forty-eight (48) hour arrival message—
   a. Vessel name and IMO number.
   b. ETA at the LNG terminal and arrival draft.
   c. Vessel's Security Level.
   d. Yemen LNG Company (YLNG) Security Pre-arrival Form.
   e. Declaration of security.

   If the ETA changes by more than 3 hours after sending the 48-hour message, vessels shall promptly advise the terminal of the revised ETA.
3. Twenty-four (24) hour arrival message—
   a. Vessel name and IMO number.
   b. ETA at the LNG terminal.
   c. Confirm free pratique message via vessel's agent.
   d. Confirm ballast change has been carried out.
   e. Estimated cargo tank temperatures on arrival (bottom, middle, and top).
   f. Confirm the following have been tested and/or are fully operational:
      i. Navigation, mooring, anchoring, communications, safety, and engine systems.
      ii. Cargo systems and boil-off control systems.
      iii. Gas detector systems.
      iv. ESD systems, alarms, and interlocks.
      v. Cargo tanks high level alarms.
      vi. High pressure and low pressure alarms.
      vii. Remotely-operated cargo valves (highlight time closure of manifold valve).
      viii. Targeting system spools pieces fitted at manifold.

   If the ETA changes by more than 1 hour after sending the 24-hour message, vessels shall promptly advise the terminal of the revised ETA.
4. Six (6) hour arrival message—
   a. Vessel name and IMO number.
   b. ETA at the LNG terminal.

Vessels must not enter the Yemen LNG Marine Exclusion Zone without a pilot on board and tugs secured. The exclusion zone is marked by lighted buoys.

A restricted area extends seaward from the outer limit of the Marine Exclusion Zone. Vessels may transit the restricted area but stopping, anchoring, and fishing are prohibited in the restricted area.

All vessels will be provided a UHF portable radio by the terminal. The standby tug will maintain a continuous listening watch on VHF channels 8 and 16, as well as on UHF; the LNG vessels will also continuously monitor these frequencies.

When departing the LNG terminal, vessels shall report the following information when passing Fairway Lighted Buoy:

1. Vessel's name and IMO number.
2. Loading port name and cargo number.
3. All let go—pilot disembark.
4. Departure date and time FAOP.
5. Name and ETA of discharge port.

Vessels using the LNG Jetty generally berth port side-to, with their bows pointed SW, during daylight hours only. Vessels using the MOF Wharf generally berth from 1 hour before to 1 hour after low water.

Contact Information.—The terminal can be contacted, as follows:

1. Terminal Shift Superintendent—
   a. Telephone: 967-5-376211
      967-7-34300099 (mobile)
   b. Facsimile: 967-5-329939
   c. E-mail: bh.prod-supt@yemenlng.com
2. Radio Room—
   a. VHF: VHF channels 13 and 16
   b. Telephone: 967-5-376122
   c. Facsimile: 967-5-376119
   d. E-mail: bh.ist-radio-op@yemenlng.com
3. Marine Operations/Harbormaster can be contacted, as follows:
   a. Telephone: 967-5-376003
      967-7-37523343 (mobile)
   b. Facsimile: 967-5-376121
   c. E-mail: bh.marine-head@yemenlng.com

Anchorage.—Anchoring is not allowed within the exclusion zone except in an emergency; an emergency anchorage, charted as the DW Emergency anchorage and with a radius of 500m, lies about 1.5 miles NW of the LNG Jetty.

Caution.—Extensive fishing occurs in the vicinity of the terminal. This activity takes place from poorly-lit wooden vessels which are difficult to detect on radar. Vessels using the terminal

are recommended to keep a sharp lookout and give these fishing craft a wide berth.

During the Southwest Monsoon, the winds tend to push vessels moored at the MOF Wharf off the pier. Due to the presence of sensitive coral reefs in this area, vessels must ensure they remain moored safely alongside.

9.8 The coast extending E of Ras al Usaydah is very irregular, with many small projecting points.

Ras ar Ratl, located about 3 miles E of Ras al Usaydah, is a conspicuous round volcanic promontory of considerable height with an apparently extinct crater in the middle. Small boats with local knowledge can anchor in the bays lying on either side of the point.

Bandar Husn al Ghurab (14°01'N., 48°21'E.) is entered E of Jabal Husn al Ghurab, a 139m high, steep-sided, square, and black hill standing about 6 miles ENE of Ras ar Ratl. Some ruins stand on the summit of this hill. The W side of the bay is clear of dangers but the E side is fouled by a shallow shoals. Bir Ali, a village with a square tower, is situated at the head of the bay.

Hillaniyah (13°59'N., 48°19'E.), an islet with several rocky points, lies about 1 mile S of Jabal Husn al Ghurab. A shoal bank, with a least depth of 3.7m, extends about 0.4 mile E from the E side of the islet. Small vessels with local knowledge can find moderate shelter from E winds off the W side of the islet.

Small vessels with local knowledge can also anchor, in a depth of 7m, about 0.5 mile off the W side of Bandar Hisn al Ghurab. During the Southwest Monsoon, anchorage should be taken farther W with Jabal Husn al Ghurab, 139m high, bearing 180°.

Directions.—Vessels from the W should pass S of Hillaniyah in depths of not less 37m. They should then pass about 1 mile E of the islet in order to avoid the shallow water in the E part of the bay. Vessels from the E should not approach the E entrance point of the inlet in depths of less than 31m. They should also avoid the shoal water in the E part of the inlet prior to changing course for the anchorage.

9.9 **Ghadarayn** (14°00'N., 48°23'E.), consisting of two small islets lying about 0.5 mile apart, is situated 3.5 miles ENE of Hillaniyah. The passage leading between these islets and the coast is clear but the channel lying between the islets almost dries.

Sharan is a circular table-topped hill standing close NW of Ghadarayn. This hill has a crater full of salt water, which is fringed by prominent overhanging mangroves.

Sikha (13°55'N., 48°23'E.), lying 4 miles S of Ghadarayn, is 111m high, hump-backed, and covered with white guano on its summit. This island has been reported to be radar prominent.

A detached bank, with a depth of 26m, was reported (1964) to lie about 7 miles SE of Sikha. A detached bank, with a depth of 16m, was reported (1979) to lie about 7.5 miles SE of Sikha.

Maqdaha Bay is entered between Ghadarayn and Ras Mijdahah, 3 miles E, and provides good anchorage to small vessels with local knowledge. Except for a shallow rock lying in the middle of the head, about 0.5 mile offshore, the bay is free from dangers.

The horns of a crescent-shaped half crater extend 0.3 mile from the head of the bay. Ras Mijdahah, dark and fairly high, is the extremity of a broken range, which extends about 10 miles inland.

A square white tower, conspicuous from NW, stands on the W side of Ras Mijdahah. Good anchorage can be taken by small vessels with local knowledge, in a depth of 14.7m, sand, with the tower bearing 055°, distant 0.3 mile.

Caution.—Fish traps lie from 2 to 4 miles offshore between Ras al Usayday, the E entrance point of Ghubbat al Ayn, and Ras Mijdahah.

9.10 **Barraqah** (13°59'N., 48°28'E.), a small islet, lies 0.4 mile S of Ras Mijdahah and is reported to be radar prominent. It is 180m high and steep. The summit, a crater, is covered by white guano. From the S, this islet appears square, with a flat top, and steep. From E or W, it appears to slope from the S cliff to the summit at the N end.

The coast between Ras Mijdahah and Ras al Kalb, 13 miles ENE, is low and sandy. Ras al Kalb is low, round, and sandy. This point is not easily identified, but a radar conspicuous stranded wreck, position approximate, was reported (1985) to lie close off it. The superstructure and one mast were visible.

The first part of the coast lying between Ras al Kalb and Al Mukalla, 38 miles NE, is barren, with sand hills extending some distance inland. The irregular peaks and bluffs of the interior mountains are sometimes covered with snow during the winter. The heights of these peaks range from 609 to 1,219m.

The current off this part of the coast sets to some extent toward the shore.

Kalb, a village, stands 3 miles NE of Ras al Kalb and behind some sand hills in a large break in the coastal range. A large fort is situated at its W end and four conspicuous white two-story buildings stand near the coast at its E end. A gray stone tomb stands on a small hill ENE of village. Although inconspicuous, the tomb is useful in identifying Ras ar Rujaymah, close E of it.

9.11 **Ras ar Rujaymah** (14°08'N., 48°48'E.), located 8 miles NE of Ras al Kalb, is 91m high and has a dark-peaked outline. Conspicuous from seaward, this point is the W end of the bold, dark, and precipitous land extending to within 15 miles of Al Mukalla.

Al Ghaidha, a town, stands 2 miles inland among luxuriant date groves in a valley between Ras ar Rujaymah and Ras Husaysah.

Ras Husaysah (14°12'N., 48°52'E.), located 6 miles NE of Ras ar Rujaymah, is the outer end of a rugged range of hills extending some distance inland. A village stands in a grove of trees midway between these two points.

Ras al Himar, a low bluff, is located 4 miles NE of Ras Husaysah. A village stands on the shore of the small bay formed between these two points.

Ras Barum (Ras Burum) (14°19'N., 49°00'E.), located 5 miles NE of Ras al Himar, is the E end of a bold, dark, and craggy promontory, which rises to a height of 335m. A rocky steep-to spit, with an above-water rock at its inner end, extends about 0.3 mile E from this point.

Small vessels with local knowledge can anchor, in depths of 5.5 to 12m, within a small bay on the SW side of Ras Barum.

9.12 **Bandar Barum** (Bandar Burum) (14°20'N., 48°57'E.)

lies between the NE side of Ras Barum and Radham Bluff, about 2 miles NNW. This bay provides safe anchorage during the Southwest Monsoon, but it is exposed to E and NE winds.

The small town of Barum (Burum) stands in a grove of trees on the NW side of the bay. A tomb stands about 1 mile W of the S end of the town, but is obscured by hills when near the anchorage.

During the Southwest Monsoon, vessels can anchor, in depths of 9 to 12.8m, good holding ground, SE of the town. However, a ground swell sometimes rolls into this anchorage.

During the Northeast Monsoon, a vessel anchored close inshore, in a depth of 12.8m, with the S side of the town bearing 280° and the E end of Radham Bluff bearing 008°. Vessels roll heavily at times in this anchorage but strong dangerous winds are rare.

A vessel also anchored, in a depth of 20m, with the SE extremity of Radham Bluff bearing 329° at a distance of about 0.5 mile.

The coast between Radham Bluff and Al Mukalla, 14 miles NE, continues low and sandy, with high mountains rising in the interior. The shore is fringed by a shallow bank which extends up to 1 mile seaward.

Ras Marbat (14°30.5'N., 49°09.6'E.) is the SW extremity of Mukalla Promontory. A conspicuous white house, in ruins, stands on this point. The sea in the vicinity of this point is very clear, when smooth and calm, and the bottom is plainly visible in depths of 22 to 27m.

Mukalla Promontory, which forms the E side of the bay, is hilly. The hills extend inland, attain heights of over 1,000m, and slope to within 0.2 mile of the coast, which is low.

Rocky Bank, a shoal area with a least depth of 4.5m, lies about 0.6 mile S of the S end of Mukalla Promontory and may best be seen on the chart.

Jabal al Qara (14°32'N., 49°08'E.), a conspicuous hill, rises 2 miles NW of Ras Marbat. It is 390m high and has a radio mast situated near the summit.

A conspicuous minaret stands about 0.7 mile WSW of Jabal al Qara, near the foreshore.

Al Mukalla (14°30'N., 49°09'E.)

World Port Index No. 48210

9.13 Al Mukalla (Khalf Harbor) is second only to Aden as the principal port on the S coast of Yemen. A considerable amount of cargo is lightered to and from the anchorage. During the Southwest Monsoon, a considerable part of this cargo is diverted to the secure anchorage off Bandar Barum.

Al Mukalla Home Page

http://www.portofmukalla.com

Winds—Weather.—The Southwest Monsoon blows fresh, but when the sun declines, the wind and sea abate; in the morning at this season strong NW winds often blow. It is exceedingly hot in the middle of the day, but from October to April, and often in June and July, the land and sea breezes, accompanied by occasional showers, bring relief.

Tides—Currents.—The diurnal rise of the tide is 0.7m, while the spring rise is 1.2m. Currents in Mukalla Bay usually set SW on rising tide, but caution should be exercised when lying at the anchorage. A vessel reported that after experiencing a weak W current, an E current set in suddenly, with considerable strength, causing it to drag and ground.

Depths—Limitations.—Khalf Harbor, entered 0.9 mile NW of Ras Marbat, is protected by breakwaters. It has a depth of 11m in the entrance.

There are two main commercial berths. Berth No. 1, on the NE side of the S breakwater, is 177m long and has a depth of 9.1m alongside. Berth No. 2, on the SE side of the harbor, is 184m long and has a depth of 9.1m alongside. Vessels up to 17,000 dwt, with a maximum length of 145m and a maximum draft of 8.5m, can be accommodated. It is reported that vessels are limited to a length of 75m during the Southwest Monsoon.

There is also a fishing quay, 160m long, with a depth of 4.5m alongside.

An oil terminal lies SE of the harbor. It consists of a submarine pipeline extending about 0.2 mile SW from a point on the shore 0.5 mile NNW of Ras Marbat. Tankers moor heading SW, with two anchors down and their stern secured to two mooring buoys situated near the seaward end of the pipeline. The depth in the anchorage position is about 37m.

Wind and current conditions are most favorable for berthing early in the morning. The oil terminal is used only from the beginning of October to the middle of May.

Aspect.—The town is situated at the head of the bay, partly on a rocky projection and partly on the mainland close N of it. The part on the mainland stands on a series of terraces on a slope, at the base of a range of reddish limestone cliffs. These cliffs are about 90m high and rise immediately at the back of the town.

Several high towers of ruined forts stand NE and NW of the town. The N part of the town is enclosed on the W side by a wall, which extends from the cliffs to the coast. The houses in the town are mostly built of stone and are four or five stories high. The land close to the town is barren but 1 mile inland and W of it are large date groves and gardens.

Several prominent structures stand in the vicinity of the harbor, including a small village, a minaret, a mosque, a small fish cannery, and some oil tanks.

Two conspicuous stranded wrecks lie close apart, about 0.3 mile W of the rocky projection on which the town stands. The S wreck was reported to resemble a vessel at anchor working cargo.

Pilotage.—Pilotage is compulsory for all vessels over 200 gross tons and is available 24 hours.

The pilots, who can be contacted on VHF channels 6 and 8, board off the breakwater.

Regulations.—Vessels should send an ETA 24 hours in advance and include the following information:

1. ETA.
2. Master's name.
3. Vessel's nationality.
4. Vessel's name and call sign.
5. Gross tonnage and dwt.
6. Maximum draft
7. Type of cargo.
8. Reason for call.
9. Security level on board (if not at Level 1).

10. Declaration of any cargo on board.

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Port Control
2. VHF: VHF channels 13 and 16
3. Telephone: 967-5-305561

The Port Authority can be contacted, as follows:

1. Telephone: 967-5-305560
2. Facsimile: 967-5-303508
3. E-mail: info@portofmukalla.com

Anchorage.—The best anchorage, in a depth of 31m, is about 0.8 mile WSW of the head of the S breakwater and 0.4 mile S of the rocky projection on which the town stands. This anchorage is used by vessels up to 10,000 dwt to discharge cargo into lighters.

The anchorage is exposed to the Southwest Monsoon and may be closed from May to October.

Directions.—The oil terminal berth should be approached on a course of 117°, with Ras Marbat just open on the port bow. The anchors are dropped on the alignment of two sets of beacons. The starboard anchor is dropped when a rear beacon, situated near the shore about 0.5 mile NNW of Ras Marbat, is in line with the NW of two front beacons, bearing 042°. The port anchor is dropped with the same rear beacon in line with the SW front beacon bearing 025° and with two beacons, situated near the shore about 0.2 mile NNW of Ras Marbat, in line, bearing 085°. Better positioning in the berth may be achieved by overrunning slightly the transit as seen from the forecastle before letting go the anchors.

Caution.—Anchorage is prohibited within 350m of a submarine pipeline, which extends 0.4 mile SSW from a point on the shore at the W side of the town. Diffusers, which protrude above the seabed, are located at the extremity of this pipeline.

In the vicinity of the oil terminal berth, vessels have experienced difficulty with jellyfish choking the main engine intakes, though this normally only occurs at the beginning of the Northeast Monsoon.

A dangerous wreck is reported (1998) to lie, position approximate, about 0.6 mile SW of the S breakwater head.

9.14 Between Mukalla Promontory and Sharma Bay, 49 miles ENE, the coast is mainly formed by an almost unbroken line of low sand.

Bandar Ruwayni (14°32'N., 49°10'E.), extending NE of Mukalla Promontory, provides anchorage, sheltered from the Southwest Monsoon, to vessels with local knowledge, in depths of 7 to 11m. The depths increase rapidly to seaward of this bay.

A large mosque stands in the village of Ar Rukayb, about 3.5 miles NE of the E side of Mukalla Promontory. Buwaysh, another village, stands in a valley surrounded by date groves, about 3 miles farther NE.

Ash Shuhayr (Shuhair) (14°39'N., 49°22'E.), standing near the coast 12 miles NE of Ar Rukaib, is in ruins but a conspicuous fort is situated in this vicinity.

Suq al Basir, a town standing 4 miles N of Ash Shuhayr, has some mosques, which are visible from seaward.

Ash Shihr (14°45'N., 49°34'E.), a small town, is situated 13 miles ENE of Ash Shuhayr and has a conspicuous castle standing in it. Two customs houses and a mosque, with white domes, are also prominent from seaward.

A shoal patch, with a depth of 10m, was reported to lie (position approximate) about 1.5 miles S of the town.

Anchorage can be taken, in depths of 12 to 21m, sand and shells, between 0.7 mile and 1 mile off the town.

9.15 Ash Shihr Oil Terminal (14°42'N., 49°29'E.) (World Port Index No. 48202), located about 5 miles SW of the town, consists of two SPMs, each moored about 2 miles offshore and connected to the coast by a submarine pipeline. The facilities on the shore are fronted by a boat harbor, which is protected by an L-shaped breakwater.

During the Northeast Monsoon, it has been reported (2007) that the current in the vicinity of the terminal sets WSW at 3 knots.

There is a least depth of 36m in the vicinity of the SPMs Buoys are moored between the SPMs and the shore in order to mark the 30m depth contour. The terminal can handle tankers in the 80,000 to 400,000 dwt range; tankers greater than 265,000 dwt can only be partially loaded.

Pilotage is compulsory. The terminal will advise the vessel of the pilot boarding position.

During the Southwest Monsoon, berthing may be restricted to daylight hours only.

Vessels must send an ETA 10 days, 72 hours, 48 hours, 24 hours, and 12 hours in advance. Any change to the ETA of over 3 hours must also be reported. The information can be sent, as follows:

1. Facsimile: 1-403-6995850
2. E-mail: manager_yemterm@nexeninc.com

The terminal (call sign: Operations Control) can be contacted on VHF channel 9 or 16. Vessels should maintain a listening watch on VHF channels 9 and 16.

Caution.—The terminal is surrounded by a restricted area. Only vessels using the terminal are permitted to enter the restricted area. Anchoring is not permitted in this area.

Vessels that are 20 years of age or older will not be allowed to load at the terminal.

9.16 Hami (14°47'N., 49°49'E.), a village with a date grove and cultivated ground in the vicinity, stands at the base of a dark double hill about 14 miles ENE of Ash Shihr.

Anchorage can be taken by small vessels with local knowledge, in depths of 12 to 14m, about 1 mile off this village.

Sharmah Bay (14°48'N., 49°56'E.) is entered between a point near the E end of the cliffs, about 2 miles ENE of Hami, and Ras Sharmah, 7 miles E. Husn al Musaina'a, an old fort in ruins, stands on a rocky hill on the N shore of the bay, about 5 miles WNW of Ras Sharmah.

Dis, a walled town, stands 2 miles NNE of the fort. Al Qarn is a small village situated on the NE side of the bay, about 2 miles NNW of Ras Sharmah.

Northwest Bluff, 52m high, stands 1.5 miles N of Ras Sharmah. It is the NW extremity of Moshar Sabir Hills, which extend from a position about 0.5 mile NE of Ras Sharmah.

Jazirat Sharmah, a 21m high islet, lies about 0.3 mile W of Ras Sharmah.

Good anchorage can be taken, in depths of 7 to 9m, with Ras Sharmah bearing 157°, distant 0.5 mile. Small vessels can anchor off the village of Al Qarn, in depths of 3 to 7m. The cur-

rent in the bay sets W with a rising tide.

The coast between Ras Sharmah and Ras Ba Ghaswah, 9 miles E, is formed by a succession of limestone and chalk cliffs, which rise almost vertically to heights of 90 to 120m. From there to Ras Qusayir, 13 miles ENE, the coast is low and sandy.

Ras Ba Ghaswah (14°50'N., 50°05'E.), with a village standing close E of it, is reported to be a radar-prominent point. It is surmounted by some conspicuous ruins. Another village, situated 4 miles W of the point, stands in a gap in the cliffs and is fronted by a sandy beach.

Ras Qusayir (14°54'N., 50°17'E.) is low and rocky. A rocky shoal, which partly dries, extends about 0.4 mile S from this point. Two rocky islets lie on this shoal about 0.2 mile WNW of the point.

9.17 Qusayir (14°56'N., 50°17'E.), a town walled on all except its seaward side, stands 1 mile NNE of Ras Qusayir. A square fort in ruins and a grove of trees stand close NNW of the town. A scattered village is situated 1.5 miles W of the fort.

Anchorage can be taken, in a depth of 12m, W of Ras Qusayir and the rocky shoal, but the depths rapidly decrease toward the coast. Unsheltered anchorage can be taken, in depths of 22 to 26m, S of the rocky shoal. Small craft with local knowledge can obtain shelter E of the two rocky islets lying on the shoal and in the lee of a reef, 0.7 mile NE of the point. A heavy surf rolls in even in fine weather, and landing is difficult.

The coast extending ENE of Ras Qusayir is low and sandy for a distance of 35 miles to Thamnun (Tanum). From there to Ras Aqaba (Ras Akyab), about 30 miles farther ENE, the coast is straight, with a low coastal ridge, which appears black against the sandy mountains inland. Black Peak, 76m high, and Cone, 152m high, are the tallest points on this ridge and stand 5 miles W and 6 miles NE, respectively, of Thiamine.

The depths off this stretch of coast, between Ras Quasar and a point 23 miles ENE, are irregular and the bottom is rocky with overfills. Harry and Soarer are two small villages standing about 5 miles and 7 miles NE, respectively, of Ras Quasar. A prominent round tower stands at Harry and numerous trees are located in the vicinity of Soarer.

Radiate al Bad al Waded (Raid) (15°01'N., 50°26'E.), located about 12 miles NE of Ras Quasar and about 1 mile inland, has a large white watch tower, marking the landing place, close W of it. Husn al Kithira, a ruined fort, stands 2 miles NW of the town. There is no safe anchorage in this vicinity.

Musayniah (15°03'N., 50°39'E.), the site of a town in ruins, is situated 12 miles E of Raydat al Abd al Wadud. The swampy land in the vicinity is marked by numerous mangrove trees. A conspicuous white fort stands in the village close inland.

Temporary anchorage can be taken, in a depth of 11m, mud and sand, about 2 miles offshore.

Palinurus Shoal (14°55'N., 50°41'E.), lying about 8 miles offshore, has a least depth of 4.5m, rock and coral. Depths in the vicinity of this shoal are irregular.

Vessels are advised to keep clear of this danger by staying well inshore or at a distance of at least 12 miles from the coast.

Wadi Masila, a large well-watered valley with numerous villages and palm trees, is located E of the Jabal Asad mountain range and is the continuation to the sea of another wadi. Wadi Masila appears to divide the mountains into distinctly separate tracts; their sides are high and the summits are usually obscured by clouds. A ruined fort stands on each side of the entrance.

9.18 Sayhut (15°13'N., 51°14'E.), located about 35 miles ENE of Musayniah, consists of some stone houses and mosques. Good anchorage can be taken off the village, in a depth of 10m, mud, with a large white house in the village bearing 315° and the S end of the promontory, of which Ras Sharwayn is the E extremity, bearing 070°, and a little open of Ras Uqab.

Ras Uqab (Ras Akab) (15°14'N., 51°19'E.), located about 7 miles ENE of Sayhut, is high, red, sloping, and rocky. Ras Rakhwayt and Ras al Kafir, two bluffs, stand between Ras Uqab and Ras Itab, about 7 miles ENE. During the Northeast Monsoon, small craft can shelter in the bays which indent this coast.

Ras Itab (15°17'N., 51°26'E.) is fairly high and terminates in a low point which forms the W entrance of Bandar Itab.

Bandar Itab (15°18'N., 51°33'E.), a slight indentation between Ras Itab and Ras Sharwayn, 14 miles ENE, provides some shelter from NE winds. With a fresh sea breeze, a considerable surf breaks on the beach along the shore.

Itab (15°20'N., 51°28'E.), standing about 3 miles NNE of Ras Itab, has three mosques, with a minaret on the W. A grove of trees stands W of this village.

Qishn Bay (15°25'N., 51°47'E.) is entered between Ras Sharwayn, the E end of a steep-to promontory, and Ras Darjah, 14 miles ENE. These two similar points have a quantity of sand blown up on their W sides. Ras Darjah consists of steep cliffs, 60 to 120m high.

During the Southwest Monsoon, the breaking seas have formed coves at the bases of these cliffs. It has been reported that Ras Sharwayn and Ras Darjah are radar conspicuous.

The low, sandy shore of the bay is backed by barren sand hills and a high range of hills a few miles inland. A heavy ground swell and a high surf break on the shores of the bay, except in a small cove close W of Ras Darjah.

9.19 Qishn (15°26'N., 51°41'E.), a small village, stands on the bay shore about 5 miles N of Ras Sharwayn. A salt water lagoon and a few trees stand at Suq, about 2 miles NE of Qishn.

The best anchorage is located in Bandar Lask, in the SW part of Qishn Bay. A good berth is in depths of 7.3 to 9.1m, about 0.5 mile offshore, with Ras Sharwayn bearing 158°, and a tomb about 2 miles NW of Ras Sharwayn bearing 270°. During the Southwest Monsoon, vessels are sheltered here in comparatively-smooth water, while in other parts of the bay a heavy swell sets in.

Between Ras Darjah and Ras Fartak, about 25 miles ENE, the low sandy coast is barren except for some small bushes and cultivated areas near the villages. Some sand hills rise to the high range of hills inland.

Khar Maghshi, a small salt water lagoon, lies about 5 miles NE of Ras Darjah and close to the coast. A rock, with a depth of less than 1.8m, lies about 4 miles NNE of Ras Darjah.

During the Southwest Monsoon, small craft can anchor between Ras Darjah and this rock, completely sheltered.

Saqr (15°33'N., 51°58'E.), located about 8 miles NE of Ras Darjah, stands in a grove of trees close to the coast. A large

white mosque stands on a low cliff SSW of this village.

A fortified house stands at the W end of a village, about 3 miles ENE of Saqr; about 7 miles farther ENE is the village of Haswayn, near some palm trees.

Khaysayh (15°37'N., 52°15'E.) stands at the mouth of the valley at the base of the high land on the W side of Ras Fartak.

Coastal vessels can anchor off this village. A grove of trees stands about 2 miles inland and is flanked on both sides by villages.

Caution.—Because of the variable currents in the vicinity, care must be taken in thick weather not to mistake Ras Sharwayn for Ras Darjah.

9.20 Ghubbat al Qamar (16°20'N., 53°00'E.) lies between Ras Fartak and Ras Sajir, about 100 miles NE, and provides anchorage during offshore winds in convenient depths. No shelter is provided with onshore winds.

Tides—Currents.—The current, beginning to set ENE along the SE coast of Yemen early in April, is apparently deflected NNE near Ras Fartak toward the coast around Damgaut; its average velocity is 2 knots.

During the Northeast Monsoon, it sets in the opposite direction at 0.5 to 2.5 knots, but during this season, it often sets against the wind between Ras Fartak and Ras Naws, about 200 miles E.

In Ghubbat al Qamar, there are very weak tidal currents between Khawr Khalfut and Airub, which are accompanied by strong rips in places.

Ras Fartak (15°39'N., 52°16'E.), which is steep-to and rises to Jabal Fartak Range, appears as an island with a gap in the middle from a distance of 30 miles S. It is supposed to be the ancient Syagros because it resembles a boar's head when viewed from the SW or E at a distance of 20 to 30 miles. This promontory is radar conspicuous. It is reported that a radio mast stands near the S end of this promontory.

Ras Fintas (15°48'N., 52°14'E.), located 9 miles N of Ras Fartak, is a bluff cape, 61m high, surmounted by a conical hill. In the vicinity of this cape the high land recedes inland from the coast. A small village stands in a small bight close N of this cape.

Khawr Khalfut, a small bight where coastal craft are hauled up during the Southwest Monsoon, lies about 5 miles NNW of Ras Fintas.

Tabut and Hayrut are small villages standing about 5 miles and 7 miles N, respectively, of this bight and about 1 mile inland. A small saddle hill rises behind and between these villages.

9.21 Nishtun (15°49'N., 52°12'E.) (World Port Index No. 48198) is a small commercial and fishing port lying on the NE side of a bight, about 3 miles N of Ras Fintas.

Prevailing winds are from the NE from October to April and from the SW from May to September.

The harbor is protected by two breakwaters and has a pier, 220m long, which can accommodate vessels up to 3,000 dwt, with a maximum length of 90m and maximum draft of 5.0m, along its NW face.

A light is shown from the head of the SE breakwater; another light is shown from a structure standing close E of the breakwater root.

Pilotage is compulsory for vessels over 200 gt. Pilots, who can be contacted on VHF channels 13, 14, and 16, are available for berthing only by day.

The vessel's ETA should be sent 24 hours in advance.

Anchorage is available about 0.4 mile SE of the breakwater light and clear of the harbor entrance.

Caution.—The port is exposed to heavy sandstorms during the monsoon season (July to September).

During the Southwest Monsoon, seas may break over the breakwaters.

9.22 Al Ghaydah (16°12'N., 52°16'E.), the largest town on the shores of Ghubbat al Qamar, stands 14 miles NNE of the village of Hayrut and 2 miles inland.

From February to April, small craft with local knowledge anchor about 1 mile off this town, over a sandy bottom.

Qabr Qaylul (Abd Allah Gharib), a tomb with some date trees in its vicinity, stands close to the coast about 8 miles NNE of Al Ghaydah. The village of Airub (Jarub) stands 3 miles farther NNE.

An isolated shoal patch, with a depth of 32m, was reported (1999) to lie about 9.5 miles ENE of Qabr Qaylul.

Al Jawhari (16°29'N., 52°27'E.), a white tomb with a few huts nearby, stands 9 miles inland. The coast between Al Jawhari and Ras Sajr, 65 miles ENE, is backed by mountains. A wadi separates Jabal al Fatk from the Athub Range, which terminates in a dark bluff point. Overfalls are reported to occur in the vicinity of the 200m curve about 7 miles SE of the wadi's mouth.

Damqawt (Damghut) (16°34'N., 52°50'E.) is a small port lying on the N side of Ghubbat al Qamar. It stands on an irregular plain in a valley at the W end of Jabal Qamar Range. The town is surrounded by mountains, except on its seaward side. A ruined fort stands on a cliff behind the town and a lagoon, with a few trees around it, lies on the W side of the town. A reef, over which the sea breaks, extends about 0.1 mile from the shore fronting the town. When the SW swell is not heavy, there is good landing on the E side of this reef, but at the same time the W side may be unapproachable.

Jadib (Jadhib) (16°37'N., 52°58'E.), a village built under some projecting rocks, stands about 9 miles ENE of Damqawt. The village of Hawf, with a tower, stands about 2 miles farther ENE.

Ras Darbat Ali (16°38'N., 53°03'E.), a small rocky point, is about 61m high and lies 3.5 miles E of the village of Hawf. A very conspicuous bluff, 1,204m high, stands about 3 miles NNE of this point. The bluff appears most conspicuous when viewed from the SW.

The international boundary between Yemen and Oman lies in the vicinity of Ras Darbat Ali.

Palkut (Dhalqut), a grove of trees, stands about 14 miles ENE of the village of Hawf. Al Kharifut, a fertile valley, lies about 5 miles farther E. Rakhyut and Safqut, two separate villages, stand about 10 and 13 miles ENE, respectively, of Palkut. Ras Sajr is located 6 miles E of the village of Safqut.

Ras Sajr to Ras al Hadd

9.23 Winds—Weather.—Around the middle of June, the strong Southwest Monsoon raises a heavy sea, but early in

April, the advance swell of the monsoon begins to roll into Ghubbat al Qamar accompanied by a heavy surf. During this season, most of the inhabitants of the coastal plains retire to the mountains.

In April and May, there are frequent gusts of winds and occasional thunderstorms on Jabal Qamar and Jabal Samhan.

From June to September, it sometimes blows from the N for some days, and in July and August, this wind sometimes brings with it swarms of locusts.

The low-lying coastal plains, the majority of which consists of sandy desert and basaltic formations, are very hot. In the vicinity of the sea, the atmosphere is moist and steamy. In the lower valleys, the oppressive atmosphere is stifling by day and very damp at night.

During the Southwest Monsoon, the atmosphere on Zufar (Dhufar Plain) is oppressive, but the winter months are temperate.

During the Southwest Monsoon, Jabal Qamar and Jabal Samhan are often completely obscured by clouds for weeks, and the local inhabitants report that the sun is often not visible for days; this may account for the extremely fertile nature of these hills.

Depths—Limitations.—The depths in the approach to this part of the Arabian coast are deep and clear of all known dangers. The 200m curve lies at distances ranging from less than 1 mile E of Mirbat to about 48 miles off Khalij al Masirah. There are no known dangers lying outside the 200m curve, but several shoals and banks lie close within this curve. These dangers will be described together with the coastal features which they front.

9.24 Ras Sajr (16°45'N., 53°35'E.), steep and rounded, rises to a height of 844m. The summit of the range in this vicinity is formed a level tableland 1,106m high. The E side of Ras Sajr forms a vertical escarpment but is not as high as the SW side. The latter side descends in three or four large steps, the ledges of which are so narrow that the summit can be seen only when 0.5 mile from the base. The bluff fronting this cape rises vertically from the sea and is steep-to.

A stranded wreck was reported (1997) to lie on the SW side of Ras Sajr.

Caution.—Ras Hamar Firing Practice Area lies SE of Ras Sajr. For further information, see **Oman—Firing Areas** in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Jabal Samhan (17°04'N., 54°38'E.), 914 to 1,219m high, extends 73 miles E from a position about 33 miles NE of Ras Sajr to Jabal Naws. This range closely approaches the coast in the vicinity of Mirbat (16°59'N., 54°41'E.) and terminates abruptly in cliffs.

Ghubbat al Fadayih (Ghubbat al Fazayih) (16°49'N., 53°51'E.), entered between Ras Sajr and Ras Himar, 24 miles ENE, has a rocky irregular coast. A rocky islet stands close offshore about 9 miles NE of Ras Sajr. A sunken rock lies close off the N and S ends of this islet.

Ras Himar (16°54'N., 53°57'E.) is a rocky bluff of irregular hills projecting from the mountain range within the coast. A conspicuous needle-shaped peak, with a notch between it and a similar peak, stands on the summit of this bluff.

Zufar (Dhufar Plain) (17°02'N., 54°10'E.), the largest of the lowland tracts between the coast and mountains, and one of the most fertile districts on the S coast of Arabia, fronts the curve of the high land between Ras Himar and Khawr Taqah, about 27 miles E.

Ras Raysut (16°55'N., 54°00'E.), located 4.5 miles ENE of Ras Himar, is 30m high, much scarped, and very irregular near its summit. A small tower, in ruins, stands on the summit and an ancient cemetery is situated further inland on the ridge. A small rocky islet fronts the point on the E side.

Caution.—A disused (1996) explosives dumping ground area, the limits of which may be best seen on the chart, lies centered 20 miles SE of Ras Himar.

9.25 Mina Raysut (Port Raysut) (16°56'N., 54°02'E.) (World Port Index No. 48230), lying N of Ras Raysut, is the port for Salalah and is also known as Port Salalah. The port has facilities for container, reefer, general cargo, tanker, ro-ro, and fishing vessels.

Salalah Port Services Home Page

http://www.salalahport.com

Mina Raysut—Berth Information				
Berth	**Length**	**Depth alongside**	**Maximum berthing draft**	**Remarks**
Container Terminal				
No. 1	307m	16.0m	15.5m	Containers. Located on the S side of the N breakwater.
No. 2	307m	16.0m	15.5m	
No. 3	307m	16.0m	15.5m	
No. 4	307m	16.0m	15.5m	
No. 5	450m	16.0m	17.5m	
No. 6	450m	16.0m	17.5m	

Mina Raysut—Berth Information				
Berth	**Length**	**Depth alongside**	**Maximum berthing draft**	**Remarks**
General Cargo Terminal				
No. 21	173m	9.5m	9.0m	General cargo. Located on the NE side of the spur off the root of the S breakwater.
No. 22	173m	9.5m	9.0m	
No. 23	173m	9.5m	9.0m	
No. 24	200m	7.8m	6.8m	Located on the NW side of the spur off the root of the S breakwater.
No. 25	115m	4.0m	4.3m	Located on the SW side of the spur off the root of the S breakwater.
No. 26	115m	4.0m	4.1m	
No. 27	115m	4.0m	4.1m	
No. 28	115m	4.0m	4.1m	
No. 29	260m	3.0m	2.6m	Small craft and fishing vessels. Located SW of Berths No. 25-29. Ro-ro ramp at SE end of berth can accommodate a draft of 2.5m.
No. 30	300m	16.0m	15.0m	Located NW of Berth No. 29
No. 31	300m	16.0m	15.0m	
Oil Wharf	130m	11.0m	10.0m	Can accommodate vessels up to 35,000 dwt, with a maximum length of 130m.

Winds—Weather.—Local authorities have reported that a dense fog prevails in the outer port area during the Southwest Monsoon, which blows from June through October.

Tides—Currents.—The maximum tidal range here is generally about 2m. However, during the monsoon season (June to August), the range may be as much as 4m. During the onset of the Northeast Monsoon, a vessel experienced a SW set of about 3 knots at a position about 5 miles from the port. Closer to the port, the vessel reported negligible set and drift.

Depths—Limitations.—Deep water is found close inshore to the W of the port, but depths of less than 10m are found up to 1.5 miles off the coast at the E side.

The harbor, situated on the N side of Ras Raysut, is protected by two breakwaters. The entrance approach channel is dredged to a depth of 18.5m (2008). The outer part of the inner harbor has been dredged to a depth of 18m; the inner part of the harbor basin is dredged to a depth of 16m (1998).

An oil berth is located on the W side of a pier extending N from the E end of Berth No. 21.

The Container Terminal is located on the N side of the harbor basin. The General Cargo Terminal is located on the S and W sides of the harbor basin. Berth information is given in the accompanying table titled **Mina Raysut—Berth Information**.

The E breakwater is 2,800m long and is marked by a light at its outer end.

It has been reported (2008) that construction will begin on three additional containers berths, with a total length of 1,350m. The new berths will be located on the N side of the existing container terminal, will have an alongside depth of 18m, and will be approached through a new approach channel which will have a depth of 18.5m. The new berths will be designated Berth No. 7, Berth No. 8, and Berth No. 9. Berth No. 7 is scheduled to be operational in early 2011, with the other berths to be available the following year; however, it has been reported (2009) that this schedule will be delayed.

A new quay has been completed (2015) along the main breakwater.

Aspect.—Two cement silos and several prominent tanks stand in the vicinity of Ras Raysut.

Two conspicuous radio towers stand 3 miles NNE of the E breakwater head and about 0.4 mile N inland.

A light stands about 0.4 mile SW of the root of the breakwater.

It is reported (2000) that the gantry cranes standing on the container quay, on the S side of the N breakwater, are prominent from seaward. It has been reported (2010) that these container cranes may obscure landmarks and navigational aids.

An outer fairway lighted buoy is moored about 2 miles E of the harbor entrance.

Directional lights mark the Main Channel and the Inner Channel.

Pilotage.—Pilotage is compulsory for vessels over 200 nrt and is available 24 hours. Pilots board about 3.5 miles ESE of the breakwater head. Pilotage can be provided with 1 hour notice.

Regulations.—Vessels should send an ETA message 96 hours, 48 hours, 36 hours, and 24 hours in advance through the agent. An ETA message should also be sent on VHF channel 12, by facsimile or by e-mail, 4 hours in advance.

The 96-hour ETA message should include the vessel's length overall, draft, nrt, gross tons, cargo distribution details, last port of call, next port of call, vessel name, vessel flag, port of

registry, and the following information required by the ISPS Code:

1. International Ship Security Certificate (ISSC) Number.
2. Date of issue and date of expiration of the ISSC.
3. Name of organization issuing the ISSC.
4. Name of Ship Security Officer.
5. Ship Security Threat Level.

All inbound vessels should contact the port on VHF channel 16 when within range. All vessels in the port should maintain a continuous listening watch on VHF channels 12 and 16.

Vessels 70m long and over carrying bulk hazardous cargo are required to use two tugs when berthing and unberthing.

Ship-to-ship operations may only be conducted in Anchorage C. Berthing is allowed during daylight hours only. Unberthing may be done at any time. Pilotage and the use of a tug are required when the maneuvering vessel in a ship-to-ship berthing/unberthing operation is 170m long or greater and is without operational bow thrusters.

Operations are suspended during the monsoon season and when any of the following conditions exist:

1. Wind speed of 25 knots or more.
2. Swells of 1.8m or more.
3. Visibility of 500m or less.

Vessels unable to communicate by voice in clear English or Arabic will not be allowed to enter the port and will remain at anchorage until suitable voice communications arrangements are made by the owner or agent.

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Port Salalah Control
2. VHF: VHF channels 6, 10, 12, and 16
3. Telephone: 968-23219052
   968-23219500 (ext. 423/424)
4. Facsimile: 968-23219253
5. E-mail: salalahportcontrol@salalahport.com

The Port Authority can be contacted by e-mail (mktg@salalahport.com).

Anchorage.—Designated anchorage areas, best be seen on the chart, have been established SE of Mina Raysut. They are used, as follows:

1. Area A—Inbound small vessels waiting for a berth.
2. Area B—Vessels requiring offshore services.
3. Area C—Vessels carrying hazardous cargo and ship-to-ship operations.
4. Area D—Inbound large vessels waiting for a berth.

The bottom in these anchorages is sandy.

Caution.—It is reported (1997) that wave recorder buoys are often moored within 1.5 miles SE of the E breakwater head.

A prohibited area, into which entry is prohibited and which is best seen on the chart, lies NE of Mina Raysut, on the N side of Bandar Raysut.

Buoys in the vicinity of the port and its approaches may be moved or changed as breakwater construction progresses. Vessels are advised to navigate with caution and consult with local authorities for the latest information.

During the monsoon season (June to August), ship-to-ship and small boat operations may be suspended in the anchorages.

It has been reported (2010) that vessels may have to maneuver around the numerous fishing buoys which are located throughout the approach to the port.

It has been reported (2012) numerous dhows and other small craft are anchored N of the approach and the approach channel to the port.

It has been reported (2012) that depths of as little as 8m extend about 275 yards NW from the oil pier to Lighted Buoy No. 2.

9.26 The coast between Ras Raysut and Dahariz, 10 miles ENE, is marked by green fields, coconut trees, and buildings. From Dahariz to Khawr Taqah, 14 miles E, the land is swampy and covered with mangroves, but from there to Mirbat, about 18 miles farther E, the coast is fronted by a series of limestone cliffs, 30m high. The surf generally breaks along this coast even in calm weather.

Good anchorage can generally be taken off this section of coast, in depths of 9 to 13m, and about 0.5 mile offshore.

Awqad (17°00'N., 54°03'E.), a village with a lagoon in its vicinity, stands 4.5 miles NNE of Ras Raysut. A similar village stands about 1 mile farther NE.

Salalah (17°01'N., 54°06'E.), the principal trading center of this area, stands 3 miles E of Awqad. The town consists of stone houses surrounded by a grove of palm trees. The Governor's Palace and a white fort front the town.

Three radio masts stand, at an elevation of 25m, about 1 mile W of the palace. A stone tower, standing 0.9 mile W of the radio masts, is small but prominent. It is reported (1998) that a conspicuous mosque is situated 0.6 mile WNW of this tower.

An aeronautical radio beacon is situated in the vicinity of an airfield, about 2 miles N of the palace.

Caution.—A prohibited area, the limits of which may best be seen on the chart, fronts the town of Salalah and extends up to 2 miles seaward.

Dahariz (17°01'N., 54°11'E.) fronts the coast and is surrounded by watch towers A grove of coconut trees and some cotton fields are located on the W side of the village and a lagoon lies on the E side. A fort in ruins stands about 2 miles E of the village.

9.27 **Ras Marbat** (16°59'N., 54°41'E.), fronted by foul ground, is a low rocky point, which is reported to be radar conspicuous. The ruins of a tomb stand close ESE of the point, but are only visible from W.

Some inhabitants of the area dwell in large caves, which are situated on the precipices of the cliffs extending along parts of the coast to the W of the point. Lights from these caves may sometimes be distinguished along the coast at night.

Marbat (16°59'N., 54°41'E.), a town composed of stone houses and huts, stands on the E side of a bay lying N of Ras Marbat. A conspicuous fort, with a flagstaff, stands near the shore at the N end of the town. A white mosque, with a dome, stands close SE of the fort. The town is fronted by a small craft harbor, which is protected by a breakwater.

Vessels can anchor in the bay about 0.7 mile N of Ras Marbat, sheltered from winds except those from between S and W, in depths of 12 to 14m.

Jabal Ali, a conspicuous hill, is 116m high and rises about 1.4 miles NNE of Ras Marbat. A prominent radio mast stands close SSW of the summit.

Jabal Dawan, 1,136m high, rises 5.5 miles N of Ras Marbat and is the best landmark in this area.

A cone-shaped peak rises about 8 miles E of Jabal Dawan and near the E end of the same part of the range. This peak is conspicuous, but it is not as high as the rest of the range.

Caution.—It was reported that a current sets NNW toward the shore at a rate of 1.5 knots in the vicinity of Ras Marbat.

Mirbat Firing Practice Area lies S and SE of Ras Marbat. For further information, see **Oman—Firing Areas** in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

9.28 Between Ras Marbat and Ras Naws, 39 miles ENE, the low rocky coast is backed by a low barren plain with a few hills of moderate height.

Bandar Jinjari (17°00'N., 55°00'E.), 19 miles E of Ras Marbat, provides anchorage to small vessels with local knowledge, in depths of 14 to 29m, rock and sand. This bay provides shelter from NE and E winds.

Jabal Jinjari (17°02'N., 55°01'E.), rising on the N side of Bandar Jinjari and 1 mile inland, is a conspicuous conical hill, 522m high.

Jabal Musayrat (Jabal Musaira), 660m high and conspicuous, stands close to the coast about 14 miles NE of Jabal Jinjari.

Ras Nuss (Ras Naws) (17°15'N., 55°19'E.), located about 21 miles NE of Bandar Jinjari, is low, rocky, and prominent. A prominent radio mast is reported (1998) to stand about 2.5 miles WNW of this point.

Jabal Naws (Jabal Nuss) (17°14'N., 55°17'E.), rising about 6 miles NE of Jabal Musayrat, forms the E extremity of Jabal Samhan range. This hill is wedge-shaped and its tallest and most precipitous part, which appears like a bluff, stands closest to the sea and attains a height of 894m. This peak is higher and more conspicuous than Jabal Musayrat especially when viewed from E.

9.29 Juzur al Hallaniyat (Kuria Maria Islands) (Jazair Kuriya Muriya) (17°30'N., 56°00'E.), five in number, consists of Al Hasikiyah, As Sawda, Al Hallaniyah, Qarzawit, and Al Jubaylah (Al Qibliyah). These bold and rocky islands, which rise to regular conical peaks, lie parallel to the N shore of Khalij Khuriya Muriya and about 22 miles S.

The tidal current S of these islands sets E during the flood, while N of the islands the current sets W.

Al Hasikiyah (17°27'N., 55°37'E.), lying 21 miles NE of Ras Naws, is the W of the group. It is rocky, barren, and colored white by guano. Two conical peaks standing at its S end rise to heights of 155m. Two small bays indent the E side of the island. A rocky shoal, which dries, lies about 0.5 mile off the NW side.

As Sawda (17°29'N., 55°51'E.), lying about 13 miles E of Al Hasikiyah, slopes irregularly to the coasts from its summit, 399m high, near the middle of the island. This island is barren, except for some grass and moss near the summit. Many small reef-fringed points extend from the shore and form coves suitable for use by small craft with local knowledge. The island is fronted by foul ground and is radar conspicuous.

Al Hallaniyah (17°30'N., 56°02'E.), lying about 5 miles E of As Sawda, is generally rugged and barren, except for some tamarisk trees and a little grass on its E side. The middle part of the island rises to granite chimney peaks standing close together. The tallest peak rises to a height of about 495m. The island is radar conspicuous.

The E and W ends of the island terminate in comparatively low points. Ras al Hallaniyah, the summit and N end of the island, is a bold projecting bluff, 501m high. The coast up to 1 mile on either side of this bluff consists of an almost vertical cliff. The island is fringed by foul ground and shallow rocks lie within 2.5 miles W of its W end.

A shoal patch, with a depth of 18m, was reported (1958) to lie about 5 miles E of Ras Sayyir, the E extremity.

Shoal patches, with depths of 16.5m, 15.0m, 4.9m, and 14.9m, lie about 2 miles NNW, 3 miles NNE, 3.4 miles NE, and 3.5 miles NE, respectively, of Ras al Hallaniyah, the N extremity.

The best anchorage off Al Hallaniyah is in depths of 14.6 to 22m, about 4 miles WSW of the N extremity of the island and about 0.5 mile off a small sandy cove. This anchorage is open to winds from E through N to W. A vessel reported approaching this anchorage on a course of 150°, with the bottom shelving gradually.

A stranded wreck lies in the vicinity of a bay on the NE side of the island.

Caution.—Qarzawit Firing Practice Area extends NE from the NE side of Al Hallaniyah. For further information, see **Oman—Firing Areas** in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

9.30 Qarzawit (17°36'N., 56°09'E.), lying about 6 miles NE of Ras al Hallaniyah, is rocky and has a double peak, 70 m high. The base of this islet consists of four red granite rocks lying close together. The islet is fringed by foul ground and two above-water rocks lie close together off its E end.

Al Jubaylah (Al Qibliyah) (17°30'N., 56°20'E.), the E island of the group, lies 13 miles E of Al Hallaniyah and is radar conspicuous. This rocky, barren island is topped by several limestone peaks. A small sandy bay indents the NW side of the island. The tallest peak rises to a height of 171m and is visible from all directions.

Four Peaked Rock (17°29'N., 56°20'E.), about 30m high, lies 1 mile NNW of the NW extremity of Al Jubaylah; the intervening channel has depths of 3.7 to 5.5m. A rocky ledge, marked by some above-water rocks, extends about 0.5 mile NW from Four Peaked Rock.

Well Rock (17°29'N., 56°19'E.), a small above-water danger, lies about 0.5 mile SSW of the SW extremity of Al Jubaylah (Al Qibliyah).

Tilly Rock (17°30'N., 56°25'E.), with a depth of 5.5m, lies about 2 miles E of Al Jubaylah (Al Qibliyah). A small drying rock, over which the sea usually breaks, lies about 2 miles farther E. Four Peaked Rock, well open N of Al Jubaylah (Al Qibliyah). and bearing less than 280°, leads N of these rocks.

A wide berth should be given these rocks when a vessel is rounding the E side of the island at night, as they are steep-to and the depths around them are irregular.

Anchorage can be taken off the N side of Al Jubaylah (Al Qibliyah). As the holding ground of coral is indifferent, a long scope of chain is required.

Small vessels with local knowledge can anchor, in a depth of

22m, off the S side of Al Jubaylah (Al Qibliyah). with Well Rock bearing 248° and the W extremity of the island bearing 293°.

9.31 Khalij Khuriya Muriya (Kuria Muria Bay) (Khalij al Hallaniyat) (17°39'N., 55°53'E.), entered between Ras Nuss (Ras Naws) and Ras Sharbithat, 71 miles NE, is bordered by lines of limestone cliffs and sandy beaches. The depths in the central part of the bay range from 36 to 86m, shoaling gradually toward the coast and the five previously-described islands. The bottom is generally sand and coral, but occasionally rock is found.

Winds—Weather.—The winds and weather in the bay appear more violent and variable than anywhere along this coast. The N wind is strong. Changes of wind may be sudden and without any warning. In the vicinity of this bay, the Southwest Monsoon is reported to set in with heavy squalls, rain, and thunderstorms. During this period, many of the local vessels do not sail. The larger craft sail in early June, after the first burst of the monsoon, and at the end of August, when the monsoon is considered to be over.

Bandar Naws (Bandar Nuss) (17°15'N., 55°19'E.), entered between Ras Nuss (Ras Naws) and a low rocky point about 3 miles to the N, provides sheltered anchorage from S and W winds, in a depth of 16.5m, about 0.5 mile offshore. A village stands at the head of this bay. A tomb, in ruins, stands in a valley about 5 miles N of Ras Nuss (Ras Naws) and 1 mile inland.

Ras Hasik (17°23'N., 55°20'E.), about 10 miles NNE of Ras Nuss (Ras Naws), is small, low, and rocky. The coast in this vicinity is very striking. The unbroken limestone mountains with the sharp peaks of the granite ranges are very prominent. Though the coast appears barren from seaward, the valleys are well-wooded and watered.

Bandar Hasik (17°24'N., 55°20'E.), on the N side of Ras Hasik, provides sheltered anchorage from S winds to small vessels with local knowledge, in depths of 9 to 22m, close offshore. A village stands in a valley a short distance from the head of this bay.

9.32 Ghubbat ad Dawm (17°30'N., 55°20'E.) is entered between Ras Hasik and Ras Muntajib, about 18 miles NNE. The coast between Ras Hasik and Ras Tihrar, a low sandy point about 4 miles NNW, is irregular.

The remaining part of the coast is backed by a high, steep tableland with three conspicuous valleys. A sandy spot lies close N of Ras Attabarran, about 8 miles NNW of Ras Tihrar.

A valley, fronted by a sandy cove about 2 miles NNW of Ras Hasik, is reported to extend quite a distance W.

Ras Muntajib (17°39'N., 55°24'E.), a bluff headland with a rugged peak about 2 miles N of it, stands 8 miles NE of Ras Attabarran. The peak is difficult to identify.

The coast NE of Ras Muntajib consists of steep cliffs for a distance of 8 miles. The high land then recedes 2 to 3 miles inland and parallels the coast to the **Dark Point of Shuwaymiyah** (17°54'N., 55°45'E.), located 22 miles NE of Ras Muntajib, where it again approaches the coast. A white stone building stands about 4 miles WNW of the Dark Point of Shuwaymiyah.

Bandar Qanawt, an abandoned fishing village, stands 8.5 mile NNE of Ras Muntajib. A prominent white sand hill is piled up against the cliff at its W end.

The village of Shuwamiyah, with a prominent minaret at its W end, stands 12 miles ENE of Bandar Qanawt.

A conspicuous stranded wreck fronts the shore 5 miles ENE of Bandar Qanawt.

The coast from the Dark Point of Shuwaymiyah, a bluff headland which should not be confused with **Ras Mutaykaf** (Ras ash Shuwaymiyah) (17°54'N., 55°54'E.), about 10 miles E, is an unbroken line of cliffs which form the sea front of a tableland, 183 to 224m high. This line of cliffs extends about 26 miles E from the Dark Point of Shuwaymiyah.

There are overfalls between the latter point and Ras Mutaykaf. A vessel anchored, in a depth of 20m, about 0.5 mile offshore, with the Dark Point of Shuwaymiyah bearing 082°, distant 3 miles. Between this position and the shore, the depths decrease rapidly; overfalls are also located off this section of the coast.

9.33 Ras Minji (17°53'N., 56°05'E.), located about 13 miles E of Ras Mutaykaf, is a small projecting bluff, 213m high.

About 2 miles E of Ras Minji, the cliffs gradually decrease in height for about 2 miles and terminate about 1 mile inland. The cliffs begin to rise again about 7 miles to the E.

Ras Qarwaw (17°53'N., 56°21'E.), a steep bluff tableland about 244m high, stands 13 miles E of Ras Minji and 3 miles E of Ras Sharbithat. The cliffs W of this point are fronted by a strip of low land, with a small bright red lake at its W end.

A vessel anchored, in a depth of 12.8m, about 6 miles E of Ras Minji and 1 mile offshore. Small vessels with local knowledge can anchor, in depths of 9 to 18m, off the low sandy coast W of Ras Qarwaw.

Ras Sharbithat (17°53'N., 56°18'E.), the NE entrance point of Khalij Khuriya Muriya, is a steep bluff with a flat top, with a deep notch in its face. It has been reported to be radar conspicuous.

Between Ras Sharbithat and Ras Sawqirah, about 20 miles NE, the coast is bordered by steep limestone cliffs about 180m high. When the sun shines on these cliffs, they appear to be made of clay.

Funnel Hill (Tower Hill) (18°32'N., 56°29'E.), about 39 miles NNE of Ras Sharbithat and 10 miles inland, is the summit of a high tableland and, although it appears detached when seen from a distance, the tableland extends S to the coast and gradually E for a distance of about 50 miles. This hill has been reported to appear as a light brown sugarloaf against the light background and to be inconspicuous.

Ras Sawqirah (18°08'N., 56°36'E.), a prominent headland, appears as a perfect bluff when viewed from the NE. This headland has been reported to be radar conspicuous.

Ghubbat Sawqirah (Dawhat Sawqirah) (18°35'N., 57°16'E.), entered between Ras Sawqirah and Ras Khushayyim, about 88 miles NE, has a low, sandy coast sparsely covered with mangrove bushes.

During the Northeast Monsoon, a heavy swell and surf makes up in the bay and along the coast.

Ruqq al Jazir (18°34'N., 56°51'E.), a shoal with depths of less than 20m and over which there is usually a strong ripple, borders the coast of this bay from a position about 7 miles NNE of Ras Sawqirah to Ras Khushayyim, near the NE en-

trance point of the bay. The inner part of this shoal dries in places. Less water than charted was reported (1987) in this vicinity.

9.34 Ras Khushayyim (18°58'N., 57°48'E.), a dark slightly projecting vertical bluff, lies at the S end of a range of flat-topped hills which extends about 11 miles W from Ras al Madrakah. A prominent nipple-shaped feature, formed of eroded sandstone, stands at an elevation of 91m on the summit of a coastal hill near the point. This feature appears especially conspicuous with the sun on it.

Bandar Jazirah (18°57'N., 57°47'E.), bordered by a sandy beach, lies close E of Ras Khushayyim. Small vessels with local knowledge can anchor anywhere within this bay over a bottom of sand and mud.

If the wind shifts and blows hard from the SW, which frequently occurs during the Northeast Monsoon, it is advisable to shift to the anchorage on the N side of Ras al Madrakah.

Ras al Madrakah (19°00'N., 57°51'E.), about 3 miles NE of Ras Khushayyim and marked by a light, with a rocky islet lying close NE of it, is a dark cape which appears as an island when viewed from seaward. When viewed from a distance, the land in the vicinity of the cape appears to be small detached hummocks, but closer in it is seen to be connected with a remarkable circular hummock and the summit of the cape, about 0.2 mile W of its extremity.

Black volcanic peaks, with flat-topped hills about 122m high, stand in the background. Ras al Madrakah has been reported to be radar conspicuous.

During the Southwest Monsoon, good anchorage can be taken, in a depth of 9.4m, coral, with the NE extremity of the islet NE of Ras al Madrakah bearing 181°, distant about 0.5 mile; or in depths of 10 to 11m, about 0.5 mile SSE of this berth.

Smaller vessels with local knowledge can anchor closer in, but a long swell sets in.

Stranded wrecks front the coast about 1.5, 2.2, and 5.0 miles NNW of Ras al Madrakah.

9.35 Khalij al Masirah (Khalij Masirah) (Gulf of Misirah) (19°39'N., 58°17'E.), fouled by numerous shoals and banks, is entered between Ras al Madrakah and Ras abu Rasas, the S end of Al Masirah, about 83 miles NE.

Vessels should give this area a wide berth because of the numerous dangers and the strong onshore set sometimes experienced when passing. During strong winds, a heavy swell is experienced in the gulf and the sea breaks over many shoals.

Thick fog, which appears to come down rapidly with a sudden N wind, is prevalent in the vicinity of this gulf during the Northeast Monsoon.

Tides—Currents.—In Khalij al Masirah, the tidal currents set between NNE and NW at a rate of 1.5 knots during the flood and in the opposite direction on the ebb at the same rate.

Outside the 200m curve, the tidal current sets parallel with the coast, but is probably lost in the prevailing current.

Caution.—Lesser depths than charted have been reported (2015) in the N approach to Khalij al Masirah.

9.36 Off-lying islands and banks.—Jazirat Hamar an Nafur (19°48'N., 57°49'E.), lying about 47 miles N of Ras al Madrakah and 3 miles offshore, is 99m high, with vertical limestone cliffs. Its summit is flat and split in all directions. Some sunken rocks lie close off both its E and W sides. The passage between this small islet and the coast has depths of about 5 to 11m in the fairway and is free of known dangers.

Shib Kadun (San Carlos Banks) (19°29'N., 58°00'E.), which consists of several coral banks with sunken rocks on them, extends about 18 miles NE from a position about 21 miles N of Ras al Madrakah. A heavy swell breaks over these banks during foul weather. A depth of 16.5m was reported (1975) to lie about 15 miles SE of Shib Kadun. Another shoal depth of 24m was reported (2001) to lie 4 miles further E; less water than charted exists in this entire area.

Shib Bu Sayfah (19°56'N., 58°15'E.) extends about 11 miles N and NE from a position about 23 miles E of Jazirat Hamar an Nafur. Rocks, with depths of less than 1.8m, lie near the edge of this reef.

Shib al Ghubab (20°11'N., 58°00'E.), which breaks, lies about 26 miles NNE of Jazirat Hamar an Nafur and 6 miles offshore. Depths of less than 1.8m exist over this reef.

A reef, with depths of less than 1.8m, lies about midway between this reef and Shib Bu Sayfah. A similar reef lies about 18 miles NNE of Jazirat Hamar an Nafur and 7 miles offshore.

9.37 The coast between Ras al Madrakah and Ras ad Dil, about 3.5 miles to the NNW, is sandy and backed by hills.

Ras ad Dil (19°06'N., 57°50'E.), a small rocky projection 143m high, is the S limit of a uniform line of tableland which extends about 34 miles N to Ras ad Duqm (Ras Duqm). This tableland descends to the coast in vertical cliffs from 70 to 146m high.

A small bight is entered between Ras Markaz, about 5 miles N of Ras ad Dil, and Ras Khaysat ai Liyukh, about 3 miles farther NW. The latter point is a bluff which is difficult to make out until close to it.

Vessels with local knowledge can anchor in this bight, in depths of 11 to 12.8m, sand, sheltered from S and SW winds.

A dangerous wreck is reported to lie (position approximate) about miles 7 miles SE of Ras Duqm.

Ghubbat Quwayrat (19°41'N., 57°44'E.), entered between Ras Duqm and a low rocky point, with two rocky islets close off it, about 10 miles N, is clear of dangers. It provides anchorage to small craft with local knowledge close NW of Ras Duqm. Sheltered anchorage is provided from SW winds. A low peninsula, easily identified by a small mound at its N end, extends N from Ras Duqm.

9.38 Duqm (19°40'N., 57°42'E.), close W of Ras Duqm, is being developed as Oman's first major ship-repair facility. Two drydocks can accommodate vessels up to 600,000 dwt. A floating dock, for vessels up to 80,000 dwt, is also planned for the facility.

Oman Drydock Company Home Page

http://www.omandrydock.com

Tides—Currents.—Off Duqm the currents, which are strong and variable, are influenced by the prevailing wind. From April to November the current sets NE parallel to the coast at a rate of about 2 knots.

Depths—Limitations.—The charted Deep-Draft Route has a depth of 19m at the lowest astronomical tide.

The approach channel, marked by lighted buoys and dredged (2012) to a depth of 19m, leads generally W and SSW for about 6 miles to the harbor entrance. It has been reported (2014) the dredged depth is only 18m.

The area W of the Commercial Quays has been dredged (2012) to a depth of 18m. The area E of the Government Berths and extending SE to the dry docks has been dredged (2012) to a depth of 10m.

Pilotage.—Pilotage, which is available 24 hours, is compulsory for all vessels greater than 200 gross tons and can be provided with a 2-hour notice. The pilot boards, as follows:

1. Vessels with a draft greater than 8.4m—In the vicinity of Fairway Lighted Buoy.
2. All other vessels—1.5 miles ENE of the mole.

Only the vessel's agent can order pilots for departure. However, vessels are required to send an e-mail notification (pilot@portduqm.com), as follows:

1. Oman Dry Dock facilities—48 hours, 24 hours, 12 hours, 6 hours, and 3 hours prior to departure.
2. Commercial Quay—Upon arrival and 3 hours prior to departure. Vessels also notify Port Control 2 hours prior to departure on VHF channel 14.

Pilots can be contacted, as follows:

1. VHF: VHF channels 6 and 8
2. E-mail: pilot@portduqm.com

It has been reported (2014) the pilots can also be contacted on VHF channel 14.

Regulations.—Vessels should send their ETA 48 hours, 24 hours, 12 hours, and 6 hours in advance via e-mail (pilot@portduqm.com) and 2 hours in advance on VHF channel 16. The ETA should also be confirmed on VHF channel 14. The 48-hour ETA message should contain the following information:

1. Vessel name.
2. Call sign.
3. Flag.
4. IMO number.
5. MMSI number.
6. Length overall.
7. Arrival draft.
8. Gross tons and net tons.
9. Displacement.
10. Last port-of-call.
11. Next port-of-call.
12. IMDG class, UN number, and quantity.
13. ETA at pilot station.
14. Name of vessel's agent.

The 24-hour, 12-hour, and 6-hour notices should contain the following information:

1. Vessel name.
2. Call sign.
3. MMSI Number.
4. ETA at the pilot station.

The following VHF restrictions are in effect:

1. VHF channel 6 is used exclusively by the Commercial Quay Master or the mooring masters of the Commercial Port and the pilots and/or tugs.
2. VHF channel 8 is used exclusively by the Dry Dock Master or the mooring masters of the Oman Drydock Company and the pilots and/or tugs.

All deep-draft vessels bound to and from Duqm are recommended to use the charted Deep-Water Route and keep clear of all shoals with depths of less than 19m.

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Duqm Port Control
2. VHF: VHF channels 6, 8, 14, and 16
3. Telephone: 968-24342800
4. E-mail: marine@portduqm.com

Anchorage.—Anchorage areas have been established about 10.8 miles ENE and about 9.3 miles ESE, respectively, of the head of the East Breakwater.

Caution.—Khalij al Masirah is frequented by humpback whales. Mariners are requested to keep a sharp lookout to prevent collisions and take measures to reduce noise. Vessels bound to or from Duqm shall use the recommended Deep-Draft Route.

9.39 The coast between the N entrance of Ghubbat Quwayrat and Ras Sidarah, about 4 miles to the N is alternately sandy and cliffy. A village and a grove of trees stand on the latter point, which is low and inconspicuous.

Several groups of conical hills stand close inland of Ras Sidarah.

Ras Naqrair (Ras Nakhrayr) (Ras Nakharir) (19°58'N., 57°49'E.). about 5 miles N of Ras Sidarah, is a steep bluff rising to a height of 142m. The coast up to 2 miles S of this bluff is cliffy.

The coast between Ras Naqrair and Ras Sirab (Ras Sarab), about 12 miles N, consists of sandy beach backed by a range of high hills.

A village stands on Ras Sirab, which is low, sandy, and inconspicuous. Ghubbat Sirab (Ghubbat Sarab), a slight indentation, lies between Ras Sirab and Ras Bintawt (Ras Bintut), about 13 miles NE. A rock, with less than 1.8m, lies about 0.3 mile ENE of Ras Bintawt.

Jabal ash Shubatayn (Jabal ash Shabatayn) (20°18'N., 57°43'E.), a 123m high conspicuous peak, stands about 9 miles W of Ras Bintant.

Ghubbat Bintawt (Ghubbat Bintut) (20°22'N., 58°02'E.), entered between Ras Bintawt and Ras Abana, a low rocky point about 9 miles NE, is bordered by sandy beach and is free of known dangers. A low range of hills, which rises from Ras Abana, extends to the WSW.

9.40 **Ghubbat Hashish** (20°30'N., 58°10'E.) is entered between Ras Abana and Ras ash Shajarat, about 8 miles E. The low, sandy shores of the bay are backed by a low range of hills on the W side. A pyramidal hill, 37m high, stands about 2 miles N of Ras Abana.

The mud-fringed head of the bay is divided into two parts by a spit which extends about 7 miles to the S. Three small rocky islets stand on this spit. A small village stands on the middle islet. A small rocky patch, with a depth of less than 1.8m, lies about 2 miles ESE of Ras Abana.

During the flood within the bay, the tidal current sets NNW at a rate of 0.7 knot and in the opposite direction, during the ebb, at the same rate.

A vessel has anchored, in a depth of 12.8m, with Abb, a

rocky islet lying at the S end of the above spit, bearing 097° and Raqq, a rocky islet lying about 5 miles NNW, bearing 007°.

A vessel anchored, in a depth of 8.5m, with Abb bearing 137°. This anchorage was approached with the E extremity of Ras Abana bearing 336°, and when Raqq, the rocky islet about 5 miles NNW of Abb, bore 005°, course was altered for the anchorage. From this anchorage, the rocks SW of Mahawt were about 0.5 mile distant and clearly visible.

Barr al Hikman (20°30'N., 58°24'E.), the peninsula lying between Ghubbat Hashish and Al Masirah, the island located to the E, is very low, sandy, and brush-covered. A lagoon, reported to be non-existent, lies about 1 mile N of the S end of the peninsula.

Kinasat Hikman, a shoal with a least depth of 2.6m, extends up to 6 miles off the S end of Barr al Hikman. Several patches, with depths of less than 11m, lie within 11 miles S of the peninsula. There are occasional overfalls between Kinasat Hikman and Shib Bu Sayfah, to the S.

9.41 Al Masirah (20°26'N., 58°48'E.), lying centered about 12 miles off the E side of Barr al Hikman, is generally hilly, especially on its E side. The hills along the E side of the island are separated from the island coast by a narrow sandy plain; they run nearly its entire length. Al Masirah has been reported to be radar conspicuous.

A steep plateau stands in the middle of the range on the NE side of the island. Along the W side of the island, between its S end and a position about 7 miles from its N end, there are a few low hills separated from the E range by an extensive sandy plain marked by several hillocks.

The climate of the island is agreeable and healthy between November and March, but hot and unhealthy during the Southeast Monsoon.

Jabal Madrub (20°33'N., 58°53'E.), 256m high and conspicuous when viewed from the N or NE, stands about 8 miles S of the N end of the island.

Caution.—Abu Rasas Firing Practice Area extends about 30 miles SW of Ras Abus Rasas, the SW extremity of Al Masirah. For further information, see **Oman—Firing Areas** in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

9.42 Ras Abu Rasas (20°10'N., 58°39'E.), the S extremity of Al Masirah, is low and rocky. Jabal Suwayr (Jabal al Hilm), a conspicuous conical hill, rises to a height of 153m, about 2 miles NNE of Ras Abu Rasas. A light is shown from South Peak, about 0.5 mile S of Jabal Suwayr.

Ras Kaydah (20°17'N., 58°47'E.), small and rocky, has a conspicuous, conical hill about 20m high nearby. When viewed from the E, this hill shows two peaks. A shoal, with a least depth of 4.9m, lies about 2 miles E of Ras Kaydah. The sea breaks heavily on this shoal with the slightest swell but when the sea is smooth there is no indication of shoal water.

Islets, which dry, exist respectively, 0.4 mile E, and 0.2 mile offshore 2.5 miles N of Ras Kaydah.

The coast between Ras Kaydah and Ras Zafaranat, about 17 miles NE, is regular with a few small rounded projections and a low rocky beach. Haql (Hakkan), a small village in a grove of trees, lies close to the shore about 5 miles N of Ras Kaydah.

Ras Zafaranat (20°30'N., 58°58'E.) is rocky, with hills rising abruptly.

Caution.—Shoal water, which breaks in calm weather, extends up to 3 miles WSW and ESE of Ras Abu Rasas, and up to about 2 miles off the coast between it and Ras Kaydah.

Isolated pinnacle rocks, with depths of as little as 5.5m, have been reported to lie up to 10 miles WSW of Ras Abu Rasas. Uncharted coral heads lie within the 10m depth contour. Several wrecks are charted in the vicinity of Ras Abu Rasas.

Between Ras Abu Rasas and Ras Kaydah, about 11 miles NE, the coast is indented by small sandy bays fringed by rocks.

9.43 Ras al Ya (20°31'N., 58°59'E.), about 2 miles NE of Ras Zafaranat, is the E extremity of the island and consists of a prominent bluff rising to a ridge of hills which extend W to the middle of the island.

A conspicuous peak, 99m high, stands about 2 miles WNW of Ras al Ya. Jabal Madrub rises about 3 miles farther WNW. A rock, which dries, lies about 0.3 mile offshore about 0.5 mile SSW of Ras al Ya.

Ras al Jazirah (20°34'N., 58°57'E.), about 4 miles NNW of Ras al Ya, is rocky and well-marked by a black patch on its S side. A sharp peak, rising to a height of 95m, stands about 2 miles W of this point.

A 9.4m patch lies about 2 miles SE of Ras al Jazirah. Jazirat Thukhayr, a sandy islet close N of Ras al Jazirah, lies on a drying reef connected to the shore.

Drying rocks extend up to 0.2 mile off the E extremity of the islet. The coast between Ras al Jazirah and Ras Qudufah, the NE extremity of the island, about 7 miles NNW, is indented by a bay and is fringed by shoals, with depths of less than 10m, which extend up to 2 miles offshore in places.

A 4.6m rocky patch with a rock, awash, on its SW side, lies inside the 10m curve, about 3 miles NNW of Ras al Jazirah. The sea breaks on this patch and rock with a moderate swell.

A 3.7m patch, and a 10m patch, lie 0.8 mile NNW and 1.5 miles NE, respectively, of the rock.

Ras Qudufah (20°41'N., 58°55'E.), consisting of two rocky projections about 0.5 mile apart, rises to Jabal al Jidufa, about 64m high, a short distance inland. A small monument stands close SW of Ras Qudufah

The reef bordering this point extends about 0.5 mile offshore. Depths of less than 5.5m lie within about 0.5 mile of the point. A cairn stands on a hill close S of Jabal al Jidufa.

Khawr al Masirah (Masirah Channel)

9.44 Khawr al Masirah (20°30'N., 58°40'E.), lying between the W side of Al Masirah and the mainland coast, is used by small vessels with local knowledge. The channel is fouled by numerous dangers.

The tidal currents in the S entrance set N with the flood and S during the ebb, attaining rates at springs of up to 3 knots. Off the N entrance, the N current can reach 3 knots, while the S current can reach 2 knots.

At a position about 1.5 miles N of Ras Qudufah, the current sets predominantly WNW and ESE, at a rate which can exceed 2 knots at springs.

The S entrance of Khawr al Masirah is preferable at all times because it is much wider and deeper than the N entrance and

most of the dangers are charted.

The channel leads NNE for a distance of 11.5 miles from a position about 7 miles WSW of Ras Abu Rasas and then closely follows the coast of the islands about 2 miles offshore.

A least depth of 7m exists in the channel about 3 miles SSW of Ras Kalban.

On the E side of the channel, between Ras Abu Rasas and **Ras Kalban** (20°21'N., 58°38'E.), about 11 miles to the N, the coast is low and sandy. Several sandy bays, fringed by rocks, lie along this section of coast. Numerous shoals, with depths of 1.2 to 24m, lie within 4 miles WSW through W of Ras Abu Rasas.

Shib Matrah (20°09'N., 58°38'E.), with depths of less than 1.8m, lies about 2 miles WSW of Ras Abu Rasas. Shib Abu Rasas, over which the sea breaks, lies about 0.5 mile SW of Ras Abu Rasas and dries 0.9m. Shoals, with depths of less than 5.5m, fringe the coast N of Ras Abu Rasas and lie as far as 5 miles offshore about 3 miles N of Ras Abu Rasas.

Two above-water rocks lie on this shoal, about 2 miles N of Ras Abu Rasas and close offshore. Banat Murshid, an above-water rock with some sunken rocks close SW and W, lies close offshore about 2 miles farther NNW. The sea breaks over these sunken rocks, except in a flat calm. Good anchorage can be taken by small vessels with local knowledge, in depths of 8.2 to 11m, almost 0.5 mile SE of Banat Murshid.

Uncharted coral heads exist within the 5.5m depth contour on both sides of the channel in this vicinity. Shib Sanfar, with dries 0.3m and on which the sea usually breaks, lies about 4 miles NW of Ras Abu Rasas; a 4m patch lies 1 mile SW of Shib Sanfar. Detached 3.4 to 4m patches lie about 1 mile WSW of Ras Kalban.

On the W side of the channel a patch, with depths of 4.9 to 10.7m, lies about 6 miles NW of Ras Abu Rasas. The coast between Ras Kalban and the S entrance of a bight, about 7 miles NE, is rocky and irregular with some projecting points.

A rocky bank, with depths of 1.8 to 3.7m and some sunken rocks, extends up to 1 mile off this coast.

A dangerous wreck is reported (position doubtful) to lie about 16 miles SW of Ras Abu Rasis.

9.45 **Jabal Khiran** (20°22'N., 58°41'E.), a double-peaked hill 105m high, stands 3.5 miles NE of Ras Kalban; this hill is not easily identified from S.

On the W side of Khawr al Masirah, the coast between **Ras al Mishayu** (20°21'N., 58°27'E.) and Ras an Nugdah (Ras an Nuqdah), about 29 miles NE and marked by a light, is low and rocky, with intermediate sandy patches for the first 14 miles; the coast is then low and sandy, with scattered breaks along the remaining part.

Bayad Dimnah, the greater part of which dries, extends from the mainland between a position about 10 miles NE of Ras al Mishayu to Ras an Nugdah; this reef extends up to 5 miles offshore. Jazirat Maawil, low and wooded, stands close offshore. about 3 miles SSW of Ras an Nugdah.

A shoal, with depths of less than 5.5m, extends irregularly S from the S part of Bayad Dimnah and gradually narrows until it terminates about 3 miles NNW of Ras Kalban. Several islets and dangers lie S of the end of this shoal.

Jazirat Umm al Kids, the S of these islets, lies about 2 miles WNW of Ras Kalban. This islet appears like a patch of sand from the SW. A cairn, about 2.4m high and visible for about 8 miles, stands on Jazirat Umm al Kids.

Jazirat al Har and Jazirat Sinfah stand about 1 mile NW and 2.5 miles NNE of Jazirat Umm al Kids. Overfalls occasionally mark the numerous drying rocks in the vicinity.

A shoal, with a least depth of 2.1m, lies in the main channel about 2 miles NE of Jazirat Sifah.

9.46 The coast between a point about 7 miles NE of Ras Kalban and Ras Shaghaf, about 7 miles farther NE, forms a bight which is almost filled by a drying bank extending about 5 miles NNE from the S shore of the bight.

Jazirat Shaghaf, low and sandy and covered with scrub and low bushes, stands on this drying bank. An inlet, 1.8 to 5.5m deep and 0.2 to 0.4 mile wide, leads in between the bank and the E shore of this bight to Umm Rasas.

A shoal, with a depth of less than 0.9m, was reported to extend about 0.3 mile WNW from the shore at Umm Rasas, but a small sandy beach close S of this village provides good landing. Umm Rasas consists of a few stone houses and huts, and a ruined tower.

Jabal Safaiq (20°28'N., 58°48'E.), a flat-topped conical hill, 55m high, stands 1.5 miles S of Umm Rasas. This hill shows up well from W. Small vessels with local knowledge can anchor, in a depth of 5.5m, N of Jazirat Shaghaf, with the ruined tower bearing 142° and Jabal Khiran bearing 207°.

There are depths of about 7.3 to 8.2m a little bit farther offshore.

Anchorage can also be taken, in depths of 7.3 to 9.1m, from 1 to l.5 miles W of Ras Shaghaf.

The coast between Ras Shaghaf and Ras Hilf, about 11 miles NNE, is bordered by a narrow reef which extends up to 0.7 mile offshore.

Dawwah (20°33'N., 58°48'E.), the principal village on Al Masirah, stands in a grove of trees about 3 miles NNE of Ras Shaghaf and close inland.

Anchorage can be taken, in a depth of 5.5m, close offshore, with the trees close N of Dawwah bearing 112°. Two other villages stand between Dawwah and Ras Hilf.

9.47 **Bayad Bin Juwaysim** (20°37'N., 58°47'E.), a reef which almost completely dries, lies on the W side of the channel and extends about 5 miles NE from a position about 5 miles NW of Ras Shaghaf Jazirat. Bin Juwaysim stands on the SE side of this reef.

Small vessels with local knowledge can pass on either side of Bayad Bin Juwaysim, but there are several patches with depths of 3.7m in the vicinity of the reef **Kinasat Hilf** (20°41'N., 58°50'E.), partially drying, lies on a sandbank about 2 miles W of Ras Hilf. Foul rocky ground extends up to 2 miles offshore S of Ras Hilf.

Directions.—A vessel from S or SW should steer for a position about 7 miles 245° from Ras Abu Rasas; when Ras Kalban bears 024°, it should be steered for on that bearing. Maintain this course until the cairn on Jazirat Umm al Kids bears 008°, and then steer for the cairn on this bearing. This course passes over a 7m patch.

When Jabal Kairan bears 064.5°, steer for it on that bearing until Jazirat Sifah bears 008°. This course of 008° should be maintained until the cairn on Jazirat Umm al Kids bears

219.5°. Course then can be altered to 039.5° with the cairn on Jazirat Umm al Kids bearing 219.5° astern.

This course leads SE of the 2.1m patch NE of Jazirat Sifah. When this patch has been cleared, course should be altered to about 035°, when Jabal Kairan bears 146°, which leads to the anchorage off Dawwah.

The channel W of Ras Shaghaf divides, passing E and W of Bayadh Bin Juwaysim, and between Ras Hilf and Kinasat Hilf.

The N entrance of Khawr al Masirah is not recommended for vessels. This channel should not be attempted during the Northeast Monsoon, or in foul weather, because the sea breaks heavily on the foul ground off the entrance.

9.48 The coast between Ras Qudufah and Ras Hilf, about 3 miles W, is fringed by a reef; shoals, with depths of less than 5.5m, extend up to 0.5 mile offshore along this part of the coast.

Island Reef (20°42'N., 58°53'E.), which dries 2.2m, lies about 1 mile NE of Ras Hilf; the sea breaks over this reef with a moderate swell. A dangerous wreck, awash at HW, lies close NE of the reef. Several shoal patches, with depths ranging from 3.2 to 5m, lie NE and NW of Island Reef, and are best seen on the chart.

A tanker mooring buoy berth, connected to the shore by a submarine pipeline, lies about 2 miles NNW of Ras Qudufah. Tankers berth on a heading of 110° using both anchors and with the stern secured to two mooring buoys located close W of the outer end of the submarine pipeline.

Ras Hilf (20°41'N., 58°52'E.) is low and sandy. It has been reported that a bank, with depths of less than 1.8m fronts the W side of the point. Considerable shoaling occurs off this point, accompanied by rapid changes in the coastline.

A jetty extends about 0.1 mile W from a position about 0.1 mile S of Ras Hilf.

A conspicuous tank farm stands on Ras Hilf. Several radio masts stand about 2 miles ESE of Ras Hilf; a conspicuous building with an aluminum roof stands about 2 miles ESE of the same point.

An airfield hangar stands 1.5 miles SSE of Ras Hilf; close NE is an airfield and a wind sock.

No pilots are available but a marine officer from the air station will board vessels on request to advise on local conditions.

Anchorage can be taken, in a charted depth of 11m, about 0.5 mile WSW of Ras Hilf, and, in a depth of 7.3m, about 0.5 mile farther E; the bottom is sand over coral. Caution should be exercised in anchoring, as the holding ground at both anchorages is poor, and the tidal currents are strong. A submarine cable, marked by buoys, lies close E of the anchorage.

Directions.—Vessels bound for the inner anchorage WSW of Ras Hilf should not enter without local knowledge. The N approach, which is marked by lighted buoys with radar reflectors, is not recommended for vessels with a draft exceeding 4m.

9.49 **Hilf** (20°40'N., 58°52'E.) is a small modern commercial town and fishing port located about 2 miles S of Ras Hilf. The port is formed by a rubble breakwater which extends about 0.3 mile NW from the shore from a position close S of the town; the breakwater then curves N and then E to form a small harbor serving the fish factory located at the root of the breakwater. The fish factory is a low black building with a conspicuous black tower.

A T-head pier, used by fishing trawlers and small coastal vessels, extends NW from the outer knuckle of the breakwater. A charted depth of 3.5m lies close NW of the head of the pier. The pier and the outer end of the breakwater are marked by lights.

Jabal Hilf (20°39'N., 58°53'E.), about 65m high, stands about 0.5 mile SW of the hangar. Two conspicuous radar scanners stand close N of the summit.

9.50 **Ras ar Ruways** (Ras ar Ruays) (20°59'N., 58°50'E.) lies about 13 miles NNE of Ras an Nujdah. The intervening coast is low, sandy, and bush-covered.

An area of foul ground, on which the sea breaks heavily during the Northeast Monsoon and in bad weather, extends from Al Masirah to Ras ar Ruways.

The coast from Ras ar Ruways to **Ras Jibsh** (21°28'N., 59°22'E.), about 43 miles NE, is fronted by cliffs for the first 13 miles and then continues as low sand dunes.

A few villages stand along this section of coast; a 26m patch has been reported to lie about 10 miles ESE of Ras Jibsh.

The low sandy coast between Ras Jibsh and Ras al Khabbah, about 53 miles NNE, has a barren aspect. In the interior there are numerous date groves and areas of cultivation.

Jabal Jalan (22°11'N., 59°22'E.) is 1,234m high, wedge-shaped, and conspicuous. Jabal al Kharmis, 884m high, dark and rugged, stands about 14 miles N of Jabal Jalan. Jabal Kalhat, the SE extremity of a range over 1,372m high, stands about 7 miles NNW of Jabal al Kharmis.

Jabal Jifan (21°46'N., 59°24'E.), one of several isolated hills along this section of coast, stands 18 miles NNE of Ras Jibsh and has a rounded form.

Jabal Siyh (21°54'N., 59°24'E.), about 8 miles N of Jabal Jifan, is an oblong black hill about 305m high; on a WSW bearing this hill is saddle-shaped. Jabal Quarari (Haycock), a hill about 3 miles NE of Jabal Siyh, is conical.

A 30m high hill, close W of Ras Jibsh, is almost covered by white sand, but three small dark peaks are visible. A small village stands on the SW slope of this hill. Jabal Jalan, about 25 miles W of Ras al Khabbah, is visible from this vicinity and appears wedge-shaped.

9.51 **Al Ashkarah** (21°52'N., 59°35'E.), about 27 miles NNE of Ras Jibsh, is a small village composed of numerous stone houses, huts, and a fort. Jabal Siyah is a good mark for approaching this village.

Anchorage can be taken, in a depth of 12.8m, about 1 mile off the shore of a small sandy bay. The S entrance point of this bay lies E of Al Ashkarah and is low and rocky. The depths are regular but the color of the water is very changeable in this locality.

Ras Qumaylah (21°59'N., 59°40'E.), low, sandy, and backed by a ridge of low hills, stands about 9 miles NE of Al Ashkarah. Jabal Qumaylah, one of these hills about 5 miles SW of Ras Qumaylah, appears conical with a cleft peak when viewed from the S, but later it is seen as two hills close together; it is not easily made out from the NE. The entrance of Khawr Bani Bu Ali, about 6 miles N of Ras Qumaylah, is blocked by a large black rock.

Al Suwayh (22°06'N., 59°42'E.), a village of mud huts about 1 mile NNE of Khawr Bani Bu Ali, is only inhabited during the Northeast Monsoon.

Ras ar Ruays (22°11'N., 59°46'E.), about 7 miles NE of Al Suwayh, is low and rocky, with a few sandy hillocks. The coast from 2 to 4 miles S of this point is bordered by a coral bank, with a least depth of 5.5m, which extends up to 2 miles offshore. Overfalls occur over this bank.

Fairly well-sheltered anchorage form N winds can be taken, in a depth of 11m, about 1 mile NE of Ras ar Ruays. A conspicuous stranded wreck lies close S of the point.

Ras ar Khabbah (22°14'N., 59°48'E.), located about 3 miles NNE of Ras ar Ruays, is low, rocky, and radar conspicuous.

The coast between Ras al Khabbah and Ras al Hadd, about 18 miles to the N, is fronted by cliffs extending up to 3 miles from the latter point, where it becomes low and sandy.

There is a conspicuous break in the cliffs about 7 miles N of Ras al Khabbah. During the monsoons, when it is hazy, it is reported that these cliffs cannot be seen until about 2 miles off

The first thing to be seen is the white line of the surf breaking at their foot. This coast is fairly steep-to and no anchorage is available.

9.52 Ras al Junayz (22°27'N., 59°50'E.), the E extremity of the Arabian peninsula, is located about 12 miles N of Ras al Khabbah and formed by a low cliff.

A shoal patch, with a depth of 10m, was reported to lie about 1 mile ENE of Ras al Junayz.

A dangerous wreck, position approximate, was reported to lie about 2 miles NNE of Ras al Junayz and 0.8 mile offshore.

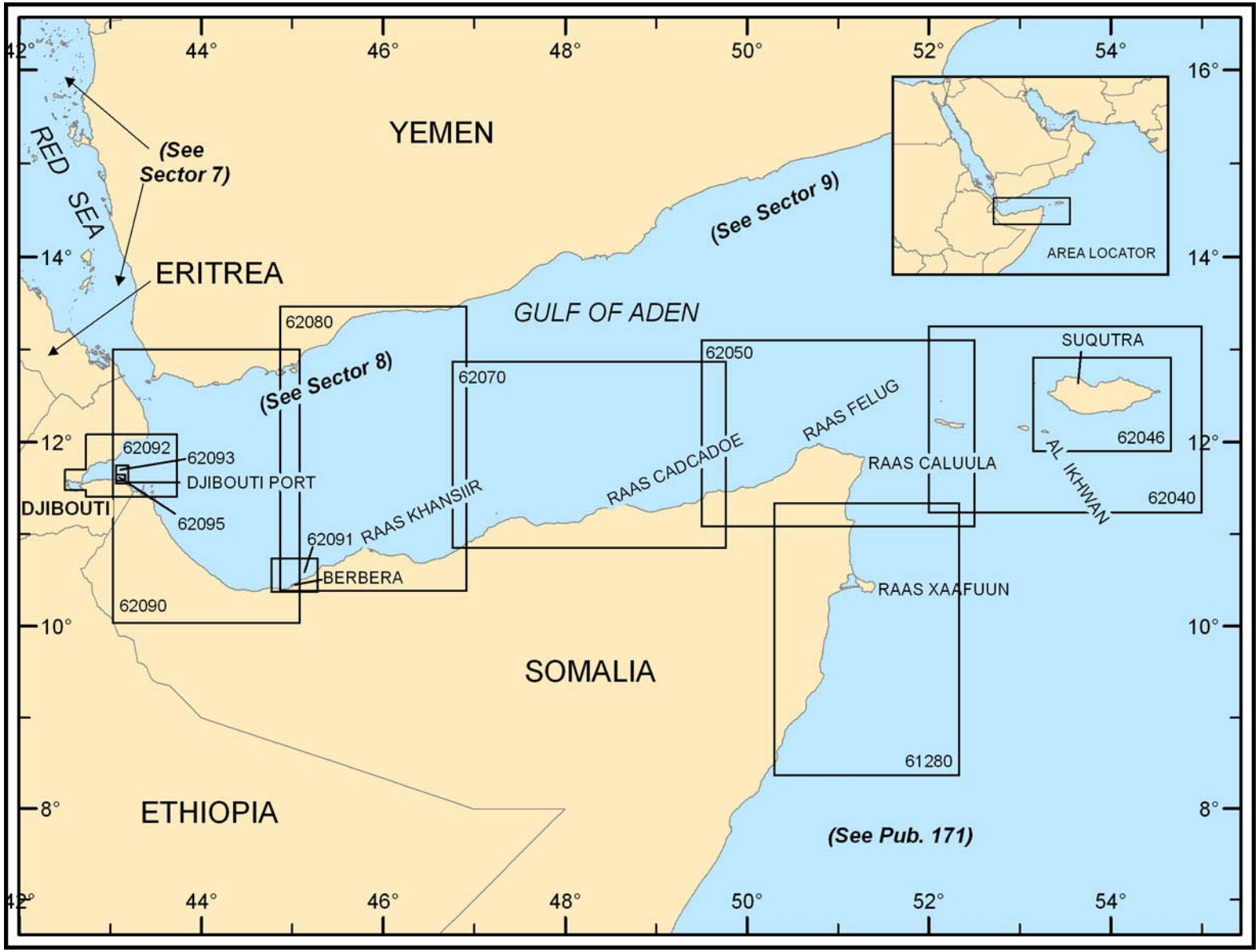
Jabal Saffan (22°24'N., 59°49'E.), which rises 250m to North Peak and 283m to South Peak, stands SW of Ras al Junayz. These two peaks stand about 2 miles apart and are good marks for identifying Ras al Hadd and Ras al Junayz.

A 222m peak stands close S of South Peak. A coastal range, 122 to 152m high, stands NW of Ras al Junayz and 1 mile inland. A gap, which is well-defined from seaward, stands between this range and Jabal Saffan. It has been reported that Jabal Saffan is radar conspicuous.

Ras al Hadd (22°33'N., 59°48'E.), the S entrance point of the Gulf of Oman, is described in paragraph 11.2.

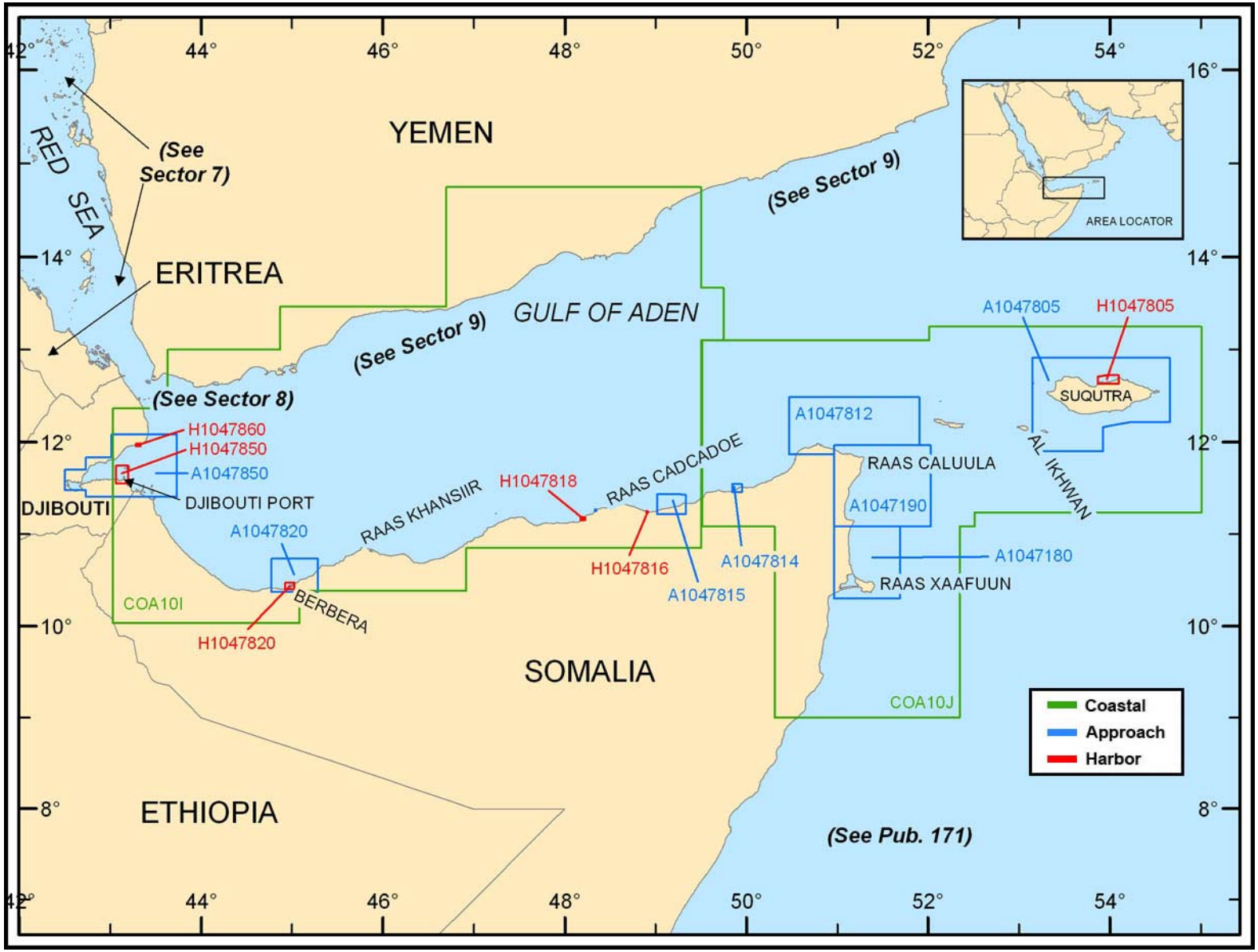
The currents off this point are strong and variable and are generally influenced by the prevailing winds.

From Ras al Madrakah (19°00'N., 57°51'E.) to Ras al Hadd, the current sets N parallel to the coast, usually from April to September, at a rate of about 2 knots.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **10** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 10

DJIBOUTI AND SOMALIA—RAS SIYAN TO RAAS XAAFUUN

Plan.—This sector describes the African coasts of Djibouti and Somalia from Ras Siyan, on the W side of Ras Bab al Mandeb, to Raas Khansiir, on the Gulf of Aden. The coast then continues E to Gwardafuy (Raas Caseyr), then S to Raas Xaafuun.

Both Golfe de Tadjoura and Port de Djibouti, the principal port of Djibouti, are described along this section of coast. The islands E of Gwardafuy are then described.

The descriptive sequence is generally from W to E.

General Remarks

10.1 Winds—Weather.—Winds in the Gulf of Aden, throughout the year are governed by the monsoon of the Arabian Sea and the Indian Ocean. During the Northeast Monsoon (October to May), these winds assume an E or ENE direction in the Gulf of Aden and following the gulf, blow in a NW direction through Bab el Mandeb into the Red Sea.

From June to September, steady SW winds prevail, blowing strongly at times out of the Red Sea, through the Gulf of Aden, E to Suqutra, and into the Southwest Monsoon in the Arabian Sea.

Toward the middle of June to August, between Bab el Mandeb and Mait Island, there are strong W or SW winds.

Near the coast of Africa at this season, there are occasional violent SSW land squalls. They generally occur between midnight and daybreak, lasting about 1 hour.

In September, W winds cease and land and sea breezes prevail and continue through October. The nights are calm and sultry.

At Berbera, on the S shore of the Gulf of Aden, 65 per cent of the observations show a SW wind in July, while in the winter months, NE observations show a prevalence of from 50 to 57 per cent.

Tides—Currents.—Surface current speed and direction in this area is mainly influenced by the Northeast Monsoon and the Southwest Monsoon.

Variation in speed, direction, and the duration of the surface flow can be expected in the Red Sea because of its enclosed nature, narrowness, and irregular shoreline. Strong eddies and countercurrent may occur near its shores, islands, and reefs.

During both monsoons, the current speed generally ranges from 0.2 to 0.7 knot, depending upon the strength of the wind.

Strong currents, up to 2.5 knots, often have been observed in the vicinity of Bab al Mandeb. In the Gulf of Aden, from October to April, the currents set SW at speeds ranging from 0.2 to 1 knot. During June to August, the currents set ENE at speeds of about 1 knot near the middle of the Gulf of Aden and up to 2 knots close to the Arabian coast.

Maximum speeds of about 3 knots have been observed along the coast in July and August.

During October, the currents in the Arabian Sea become weaker and begin to set SW into the Gulf of Aden. East of Suqutra, there is an unusual but clearly evident NE flow during December, which occurs between the prevailing W sets during November and January. The duration of this phenomenon, which probably occurs every December, has not been fully determined.

In February, the persistent W current begins to change. The current divides at about 17°N, 55°E, and both branches follow the coast, with speeds ranging from 0.3 to 0.8 knot. Changes in the current patterns continue through August and the early part of September, when the recurring seasonal cycle begins again in the Gulf of Aden.

Aspect.—The flat gently sloping coast of Djibouti, formerly known as the French Territory of Afars and Issas or French Somaliland, is backed by sandy plains which extend up to 30 miles inland. Rugged hills and a dissected plateau with isolated mountain peaks back this coastal plain.

Golfe de Tadjoura is flanked and backed by rugged partly wooded hills and a mountainous plateau.

The coast in its N and NE parts consists of a series of generally narrow plains, separated by hilly to mountainous spurs and ridges, which extend to the sea from the rugged hills and mountains in the interior.

The plains on the N and NE coasts are intersected by many streams. Suqutra and the islands E of Gwardafuy are generally hilly and mountainous, with only a few areas of coastal plains.

Steep cliffs, which rise directly from the sea, border the shores of these islands.

Caution.—Numerous oil and gas exploration rigs, with associated pipelines and structures, may be encountered in the waters described in this sector.

Incidents of armed robbery have been reported against ships proceeding in the W and SE parts of the Gulf of Aden. Vessels of any size should be aware of the risks involved when navigating in these waters at speeds of less than 12 knots.

Further information on piracy, including information on the Internationally Recommended Transit Corridor (ITRTC) established in the Gulf of Aden can be found under Indian Ocean—Cautions in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Middle East Merchant Vessel Voluntary Reporting System.—A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Red Sea and the Persian Gulf—Ship Reporting System.

Maritime Security Patrol Area.—The Commander, U.S. Navy Central Command has directed the establishment of a Maritime Security Patrol Area (MSPA) in the Gulf of Aden. For further information, see paragraph 8.1.

Ras Siyan to Ras Khanzira

10.2 Ras Siyan (Ras Siyyan) (12°29'N., 43°19'E.), on the SW side of Ras Bab al Mandeb, is the E extremity of a prom-

ontory joined to the coast by a narrow neck of land. The N side of this promontory is rocky and steep, and rises to a reddish, volcanic peak, 138m high. A mangrove-bordered bay, which is almost all dry, stands on the W side of this promontory. The remarkable white Rocher Siyan lies in this bay. The coastal bank, with depths of less than 9.1m, extends about 1 mile SE from Ras Siyan.

During S winds, anchorage can be taken N of Ras Siyan, in depths of 14.6 to 18.3m, sand. Little shelter is provided and the currents are strong.

Jezair Seba (12°28'N., 43°25'E.) consists of six rocky, steep islets, which lie from 2.5 to 7.5 miles E of Ras Siyan. All of these islets lie on breaking reefs and are of a brownish color, with the exception of Ile Grande (Kadda Dabali), the NE islet, which is yellow. This latter islet has a conspicuous peak, 114m high. A masonry block stands on the island's summit; a beacon stands on the island's N end.

Ile de l'Est (Horod le Rhale) (12°27'N., 43°26'E.), 83m high, and Ile de Sud (Rhounda Komaytou), 47m high, stand 0.5 mile and 1.5 miles SE, of Ile Grande.

Ile Basse (Ile Tolka) (12°28'N., 43°25'E.), 17m high, stands 1 mile WSW of Ile Grande.

Ile de l'Ouest (West Islet) (12°28'N., 43°22'E.), about 3 miles ESE of Ras Siyan, is 62m high. A shoal, with depths of less than 10m, extends about 0.5 mile WSW from the islet; a narrow shoal with similar depths extends 1.5 miles S from the same islet.

Ile Double (Double Islet) (12°28'N., 43°23'E.), 46m high, stands 1 mile E of Ile de l'Ouest. A sunken rock, with a depth of about 0.4m, lies about 0.5 mile NW of Ile Double. A 19.2m patch lies about 2 miles N of the same islet.

Depths of less than 20.1m and 5.9m exist about 1 mile NW and 0.5 mile WNW of Ile Double. Eddies have been seen in areas that were clear of shoals. A 31m bank lies about 3 miles E of Ile de Sud, outside the 200m curve.

Jezair Seba has been reported to be a good radar target at distances up to 27 miles.

Massif de la Table (Djebel-Jan) (12°15'N., 43°23'E.) is the highest of some ranges of tableland which closely approach the coast. It stands about 13 miles S of Ras Siyan and is marked by a beacon on its S side. Close S of Massif de la Table are the Collines de Godoria (Jebel Jan) and about 9 miles WNW stands Kabalto, a steep peak 340m high.

A beacon stands on the S end of Plateaux de Goeuh at an elevation of 471m, about 9 miles W of Collines de Godoria.

An extensive plain extending to Golfe de Tadjoura stands S of these tablelands. On the N side of Golfe de Tadjoura, Monts Mabla extends N and attains a height of 1,202m in **Sono Ali** (11°57'N., 42°59'E.).

Other prominent peaks of this range are Morne Rouge, with three reddish peaks, 131m high, about 14 miles ENE of Sono Ali; Accolade (Mouriya), trident-shaped and heavily wooded, 366m high, about 3 miles NW of Morne Rouge; Chaise du Diable, 433m high, about 5 miles SW of Accolade; and Pic du Hussard (Aramuda), with a broad summit, 802m high, about 5 miles W of Accolade.

10.3 Djebel Gouda (11°45'N., 42°40'E.), about 1,700m high, is the summit of a mountain range of tableland on the NW side of Golfe de Tadjoura. Pic Deloncle and Pic Lagarde, 1,664m high, at the E end of this tableland, are thickly wooded. Morne Noir, about 4 miles N of Pic Deloncle, and Les Trois Rois, about the same distance SSW of Pic Lagarde, are prominent marks.

Both of these latter peaks are thickly wooded. Southeast of Golfe de Tadjoura, the low coast gradually rises toward the mountains about 20 miles inland, but approach the coast about 47 miles W of **Berbera** (10°26'N., 45°01'E.).

The recession in the mountains at Berbera forms so deep a curve it gives the impression of a bay of considerable size when viewed from seaward. The coast between Berbera and Ras Khanzira is low, but there are many hills at moderate distances inland.

Dubriat, about 9 miles SE of Berbera, is 802m high; Biyo Gora, about 5 miles ENE of Dubriat, is 950m high. Aklo Hill, 384m, high, about 15 miles NE of Biyo Gora, is the E of two sharp conical peaks. Black Peak, 315m high, about 13 miles E of Aklo Hill, is conspicuous and surrounded by sand. Kumbedda, about 4 miles NNW of Black Peak, is 72m high. It appears as a conspicuous white patch when the sun shines.

The 200m curve between Ras Siyan and Ras Bir, the N entrance of Golfe de Tadjoura, lies from 9 to 10 miles offshore, gradually closing the coast in the vicinity of Ras Bir.

The gulf and its main entrance between Ras Bir and Iles Musha are deep, but have not been closely examined.

The S side of Golfe de Tadjoura, and the coast S of it, is fronted by a bank which extends up to 16 miles offshore and which shoals rapidly. Few soundings have been obtained N and E of the bank, but several dangers, including Iles Musha, are located on it. Outside of the charted dangers, the bank has general depths of 22 to 37m.

The outer edge of this bank is for the most part a narrow ridge, with depths of 22 to 36m lying 13 to 16 miles offshore; few soundings have been recorded seaward of this ridge.

Banc Arabe (Arab Shoal) (11°40'N., 43°40'E.), with depths of 6 to 18m, sand and coral, is not clearly visible. Depths increase rapidly to the 200m curve. During 2 days in February, with light N and NE winds, a current sets SE on Banc Arabe at a rate of 1 to 1.5 knots.

Khor Angar (Anghar) (12°23'N., 43°21'E.), a shallow inlet, stands 6.5 miles SSE of Ras Siyan. A prominent gray, cubical, masonry guardhouse stands on the NE side of the entrance of this creek. From **Collines de Godoria** (12°14'N., 43°23'E.) to the S, the coast continues low and sandy but about 5 miles NNE of Ras Bir it begins to rise. The reef bordering this section of coast extends up to 1 mile offshore.

Open anchorage can be taken off this coast between Massif de La Table and Collines de Godoria.

Ras Bir (11°59'N., 43°22'E.) rises to a height of 30m and is cliffy. The lighthouse on this point has been reported to be a good radar target at distances up to 22 miles.

It has been reported that the contour of the coast N of Ras Bir is clearly visible on radar at distances up to 28 miles.

Caution.—Surveys are incomplete along the coast S of Banc Arabe, with less water reported in places. Vessels should use extreme caution when approaching this coast.

The N part of the coast between Ras Siyan and Ras Bir, the N entrance point of Golfe de Tadjoura, is low, sandy, and bordered by a reef extending up to 1 mile offshore.

Golfe de Tadjoura

10.4 Golfe de Tadjoura (11°43'N., 43°12'E.) is entered between Ras Bir and Plateau de Heron about 25 miles SSW. Gohubbet Kharab, a basin almost landlocked, is entered through a narrow channel which stands at the head of the gulf. Iles Musha, together with some other islets and areas of foul ground, lie on the S side of the gulf NE of Plateau de Heron.

The gulf shores, except for a few low places, are generally high and backed by mountains rising only a short distance inland. The shores are barren but the mountainous country is fertile. The anchorage areas available are scarce and do not provide much shelter or security.

Iles Moucha (Iles Mousha) (11°44'N., 43°12'E.) rise to a height of about 12m. The coral banks surrounding these islands, within the 20m curve, dry in places and extend about 3 miles E and 1.5 miles N and S from the group.

Ile Moucha (Ile Mousha), he largest and E island, appears as a dark bank and is the most conspicuous. This island is also radar-conspicuous. A light is shown from a metal framework tower, 17m high, standing on the NE end of this island.

Ile Maskali (11°43'N., 43°09'E.), the W island of the group, lies 1 mile SW of Ile Moucha. A light is shown from a metal tower, 20m high, standing on the W end of this island. At times, this light is obscured by sandstorms.

Banc du Dankali (11°43'N., 43°20'E.), with a least depth of 5.9m, lies about 6 miles E of Ile Moucha. Banc de l'Antares, with a least depth of 12.8m, lies about 5 miles ESE of the same island.

Banc Somali (11°38'N., 43°21'E.), with a least depth of 10.7m, and Banc du Levant, with a least depth of 12.0m, lie about 10 and 12 miles ESE respectively of Ile Moucha.

Banc de la Curieuse (11°39'N., 43°11'E.), with a least depth of 15.3m, lies about 4 miles S of Ile Moucha. Banc Maskali, with a least depth of 1.9m, lies centered about 1 mile S of the W end of Ile Maskali.

Sheltered anchorage can be taken by vessels with local knowledge, in depths of 11 to 16.6m, sand, in a gap in the reef about 0.5 mile N of the W end of Ile Moucha, with the lighthouse on that island bearing 140°.

A good lookout should be posted because several detached rocky patches lie on both sides of the entrance. During the Northeast Monsoon good anchorage can be taken N of Ile Maskali, in a depth of 29.3m, sand, with the NW extremity of Ile Maskali bearing about 213°.

Caution.—Much of the surrounding coral reefs in the vicinity of Iles Moucha are enclosed by a nature reserve area, best seen on the chart. Fishing, the taking of coral, and collecting shells within this area are prohibited. In addition, all marine and submarine activities in the area are prohibited.

10.5 Obock (Hayyou) (11°58'N., 43°18'E.) indents the coast between a point about 2 miles W of Ras Bir and Cap Obock, about 3 miles farther WSW. Coral banks extending up to l.5 miles offshore divide this port into Port du Nord-Est and Port du Sud.

The village of Obock stands on the W shore, close N of Cap Obock. Obock, once the capital of the former French Territory of Afar and Issas, is now only a small village and has little commercial value to shipping, except as an anchorage.

Depths—Limitations.—A jetty for shallow draft vessels extends about 0.2 mile from the coast about 0.5 mile NE of Cap Obock. A disused pier extends from the coast about 0.5 mile farther NE.

Banc du Curieux, with depths of 5.5m and less, extends up to 0.5 mile SW from the NE shore of the bay. Banc du Surcouf, with similar depths, extends about 2 miles ENE from a position about 1 mile E of Cap Obock. A drying reef lies on the W end of this bank. Shoal water was reported to extend S from this bank.

Banc du la Clocheterie, separated from Banc du Surcouf by Passe du Sud, extends about 0.5 mile E from Cap Obock. Parts of this bank dry and have some large boulders on it.

Two small islets lie E of Obock Village, on the drying coastal bank which fringes the W shore of the bay. A drying rock lies close SSW of the S islet of the two.

Banc du Bisson, a continuation of the coastal bank between the two inner parts, extends up to 0.5 mile offshore. Its outer part usually dries at LW springs.

Banc des Perles, with a least depth of 4.6m, and Banc du Milieu, with a least depth of 3m, occupy the greater part of the passage between the two ports.

Several shoal patches lie between these two banks and NW of Banc du Milieu.

Aspect.—With the exception of the residency, a large, square building close W of Cap Obock, all of the buildings are in ruins. A flagstaff on a tower close N of the residency is a good mark. A ruined penitentiary and factory stand about 2 miles NNW of Cap Obock.

Two lighted beacons, in range 337.3°, stand l.5 miles and 0.5 miles N of Obock. This range leads through Passe du Sud into Port du Sud. These lights are extinguished from October to April.

Anchorage.—Anchorage can be taken, in depths of 10 to 32m, mud, with good holding ground, in Port du Sud, sheltered from all except S winds. The S wind sometimes blows strongly, rendering this anchorage dangerous. Several anchors and cables foul this anchorage, so care should be taken when anchoring here.

Anchorage can also be taken on the entrance range, in a depth of 27.4m, or, in a depth of 18.3m, about 0.5 mile E of the flagstaff on Cap Obock. In foul weather, anchorage can be taken, in depths of 9.1 to 14.6m, in Port du Nord-Est.

Anchorage, sheltered from N winds, can be taken, in a depth of 20.1m, good holding ground, about 3 miles W of Cap Obock, with the E side of Vallee de Latela bearing 310°, distant 1 mile.

Directions.—If approaching from the NE, steer to pass S of Banc du Surcouf and the shoal water reported S of it. When Cap Obock bears 290°, steer toward it until S of Passe du Sud, then enter the port on the alignment of the lighted range beacons. If proceeding to Port du Nord-Est from Port du Sud, pass through the straight but narrow channel, in depths of 12.8 to 23.8m. This channel should be navigated with a lookout aloft with the sun in a favorable position, or the pass should be buoyed beforehand.

10.6 The coast between Cap Obock and Vallee de Latela, about 4 miles to the W, is fronted by a cliff, 19 to 26m high, broken in places by ravines. Pointe Oursin is low and extends

about 0.4 mile offshore at the entrance to this valley. A shoal bank of sand and mud extends up to 1 mile offshore from the point.

The coast between Pointe Oursin and Ras Duan, about 14 miles SW, is bordered by steep cliffs and fringed by shoals and reefs, which extend from 0.5 to 1 mile offshore.

Ras Duan (11°49'N., 43°03'E.), a steep cliff rising to a height of 122m, is backed by higher land extending to the mountains in the interior. The coast between Ras Duan and the entrance of Ghoubbet Kharab, about 27 miles to the SW, is low and sandy. A wooded plain, which ends at the base of the cliffs at the entrance of Ghoubbet Kharab, extends inland to the mountains in the interior.

Between Ras Duan and Ras Ali, about 7 miles WSW, the coast is indented by a slight bight, with its W half fringed by a coral reef which extends about 0.5 mile offshore.

Depths of 9.1 to 29.3m exist off the outer edge of this reef. Mersa Duan, a break in the coastal reef about 2 miles NE of Ras Ali, provides anchorage for small craft with local knowledge during the Southwest Monsoon.

Anchorage is not recommended during the Northeast Monsoon or when E winds prevail.

Anse Reissale (11°46'N., 42°56'E.) is entered close W of Ras Ali, between two cliffs, and has a beach on its E side.

Small craft can shelter in this narrow inlet, in depths of 11 to 12.8m, mud, but there is a 2.7m bar across the entrance.

Between Anse Reissale and Tadjoura, the coast is rocky and steep for about 3 miles and then becomes low and sandy.

10.7 Tadjoura (11°47'N., 42°57'E.), a small village which stands on the NE side of a bay about 1 mile wide, is the residence of the Sultan of Danakil.

The Great Mosque, the NW mosque of three, stands about 90m inland and is a good mark. The tower of the residency stands about 183m NE of the Great Mosque.

An L-shaped jetty extends S and SE from the shore at the W end of the village.

Two lighted beacons, in range 003°, lead to the jetty. The bay is fringed by a reef about 137 to 274m wide, which extends about 0.5 mile S from the head of the bay.

A drying rock stands on the SE edge of this bank, about 0.5 mile SW of the Great Mosque. A detached 5.8m patch lies about 0.5 mile SSW of the same mosque.

A rock, visible at HW, stands close off the W entrance point of this bay; a shoal, with a least depth of 2.4m, lies about 0.2 mile ESE of the same point.

Anchorage.—The holding ground off Tadjoura is good but steep-to, requiring a vessel to anchor close inshore. During the Southwest Monsoon, sudden violent squalls make the anchorage untenable.

To approach this anchorage, the W entrance point of Anse Reissale must be kept open S of the sandy E entrance point of this bay. Vessels should anchor with the tower of the residency in range 020° with the S mosque and the lighted beacons in range 003°.

Small vessels with local knowledge can anchor off the head of the jetty. With E winds, vessels with a length of not more than 115m can anchor on the 020° range, in a depth of about 40m.

A mooring buoy for small craft lies about 150m from the front range light on the jetty. A second mooring buoy is laid 0.2 mile SSW of the head of the jetty.

The coast between Tadjoura and the entrance of Ghoubbet Kharab, about 18 miles SW, is bold and exposed to E winds. Ambabbo, a small village about 4 miles WSW of Tadjoura, can be identified by a group of palm trees.

In fine weather or with offshore winds, fairly good anchorage can be taken about 0.2 mile offshore, in depths of about 25 to 40m, sand and mud, with Ambabbo bearing about 335°. Farther offshore, the depths increase rapidly.

Fort de Sagallou (11°40'N., 42°44'E.), in ruins, stands 1 mile SW of Pointe des Palmieres and is marked by a group of palm trees.

The coast from the entrance of Ghoubbet Kharab is fringed by shoals up to 4.5 miles NNE.

Ghoubbet Kharab

10.8 Ghoubbet Kharab (11°33'N., 42°41'E.), which stands at the head of Golfe de Tadjoura, is landlocked except for its narrow entrance. This deep basin is irregular in shape and almost surrounded by steep cliffs. The N side is bordered by steep cliffs, 120 to 610m high, whereas the S side consists of a vertical wall, which is highest near its E end.

Anchorage can only be taken in a few places because of the great depths in its central part and close off its shores. On the S side of Ghoubbet Kharab, where the winds are usually stronger than in other parts of the gulf to the E, the high cliffs deflect NE winds to E or SE winds.

The entrance of this basin is divided into two passages by **Ile Bab** (Abou Maya) (11°33'N., 42°41'E.). A depth of 11.9m has been reported to lie in the approach to this basin, about 1 mile ENE of this islet. This islet is surrounded by a shoal on all except its N side which is steep-to.

This shoal extends SE to the S entrance of Ghoubbet Kharab. Petite Passe, the N passage, is less than 183m wide, with depths of 23.8m to over 40m. Some ruins stand close N of the entrance. The passage is marked by lighted beacons and lighted buoys.

Grande Passe, the S passage, has a width of about 0.5 mile and a least depth of 1.8m. This passage can only be used at slack water because with any wind and tidal current, a large wave is created in the middle of the passage, making it dangerous for small boats.

Tides—Currents.—The tidal currents set through these passages with great rapidity, raising eddies and ripples. A rate of 7 knots is experienced in Petite Passe.

Directions.—Petite Passe, the preferred passage, is not impracticable by day for vessels with a speed of 10 knots or greater except under very unusual conditions.

Entry can be made when the eddies have ceased and the water is smooth, which usually only lasts 5 to 10 minutes. No difficulty should by encountered when entering on the flood.

Although several eddies may form in the passage when the current is strong, they do not affect the steering.

Entering is more difficult during the ebb, especially when it is strong and the wind fresh and ahead. When the ebb is running, the sea in the approach to the passage is rough and covered with foam, which resembles breakers. Leaving Ghoubbet Kharab is always easier.

10.9 Baie de l'Etoile (11°34'N., 42°39'E.), entered about 2 miles W of the N entrance point of Ghoubbet Kharab, consists of a sandy bay bordered by a narrow reef. Vessels of any size can be accommodated in its inner reaches, in depths of 20 to 29m, mud and sand.

A shoal, with depths of less than 5.5m, extends a short distance SE from Pointe de l'Etoile, the W entrance point; another shoal, with depths of less than 9.1m, extends up to 91m S from an islet lying close W of the E entrance point. An 8.5m patch lies about 0.2 mile W of the N end of this islet.

Three drying reefs lie up to 0.5 mile NW of the N end of this islet and within the coastal bank, which extends about 0.5 mile offshore. To enter the inlet, pass not less than 0.1 mile S of either Pointe de l'Etoile or the islet mentioned above.

Enter the inlet, keeping toward the SW shore, until about 0.3 mile inside the entrance, then steer a mid-channel course and anchor, as convenient, in the inner part of the inlet.

10.10 Baie Blondeau (11°34'N., 42°36'E.), an open bay which provides anchorage to small native craft, is entered between a point about 1 mile W of Pointe de l'Etoile and Pointe de Direction, about 3 miles farther W.

The NW shore of the bay is bordered by shoals extending up to 0.5 mile offshore.

A rocky islet stands on a shoal about 1 mile E of Pointe de Direction and 0.5 mile offshore. The bay should be entered by passing E of this islet.

Baie du Lac Sale (11°34'N., 42°33'E.) is entered between Pointe de Direction and a point, surmounted by a crater, about 3 miles WSW. The NE shore of the bay changes gradually from sand dunes to steep cliffs and rises gradually to Bonnet Turc, 246m high, about 1 mile NW of the head of the bay.

A narrow rocky peninsula extends about 0.5 mile ESE from the N shore of the bay near its head. An island lies close S and almost parallel to this peninsula, but no passage exists between the two. The SW shore of the bay is low and broken. A bight at the head of Baie du Lac Sale, entered between the above island and a promontory about 0.5 mile S, provides good anchorage.

The inner part of the bight is very shallow; shoals with depths of less than 5.5m extend up to 0.1 mile from the S side of the bight. A basin, with depths of 11 to 27m, stands on the W side of the bight, but the entrance is closed by a ridge of rocks.

Good anchorage can be taken about 0.5 mile off the S shore of the bight, in a depth of 12.8m, sand and mud. A choppy sea makes up with E winds. The S side of Ghubbet Kharab is composed of cliffs gradually rising from W to E.

These cliffs are broken by a valley about 5 miles S of Pointe de Direction. Ile Parrot, low and rocky, stands at the mouth of a cove about 0.5 mile W of this valley. On the W side of Ghubbet Kharab, S of the SW entrance of Baie du Lac Sale, the coast first forms a narrow inlet about 0.5 mile long, with a rocky islet in its central part. The inlet is about 0.2 mile wide, with depths of 11 to 22m.

Limited anchorage can be taken when sheltered from SW winds. Only small vessels with local knowledge can use this anchorage in an emergency.

10.11 Petite Ile du Diable (11°32'N., 42°32'E.), 80m high, lies close SE of the SW entrance point of the above inlet. The lava on the coast of this island is clearly visible. A coral shoal extends about 137m S and 0.1 mile W from the islet.

Guinni Koma (Grande lle du Diable) (11°32'N., 42°32'E.), 166m high and about 0.1 mile SE of the above islet, is steep and of a yellowish-red color. The passage between these two islets has general depths of 14.6 to 22m, but an 8.5m patch lies in mid-channel. This patch can be avoided by passing close to Guinni Koma. The coral shoal extending from the smaller islet is visible at all stages of the tide and is easily avoided.

Anchorage can be taken, in a depth of 29m, about 0.1 mile W of the middle of the W side of Guinni Koma. The space is limited by the extending reefs and the great depths close W of the anchorage. This anchorage is sheltered, but violent squalls occasionally come down from Guinni Koma.

Mouillage des Boutres (11°33'N., 42°42'E.) is entered between the cliffs S of the entrance of Ghubbet Kharab and the narrow rocky Ile des Boutres standing on the coastal reef about 1 mile to the E. There are general depths of 22 to 36.6m in this bight.

An 8m patch lies close NW of the N end of Ilot des Boutres; a detached 11.9m patch lies about 0.5 mile NW of the same islet.

Anchorage can be taken, in depths of about 27 to 31m, sand, about 0.5 mile W of the N end of Ile des Boutres but it is exposed to NE winds.

The coast between Mouillage des Boutres and Pointe Noire, about 23 miles to the E, is bordered by steep cliffs 120 to 150m high.

Between **Ras Korali** (11°35'N., 42°48'E.), about 7 miles ENE of Ile des Boutres, and Daba Libah, about 3 miles farther E, the coast is broken by the mountain spurs which closely approach the shore.

Anchorage, sheltered from NE winds, can be taken in the bight close W of Daba Libah.

Daba Libah (Ras Eiro) (11°36'N., 42°51'E.), narrow, bushy and moderately high, is a good landmark. This projection extends about 0.5 mile from the coast and is bordered on its E side by a shallow shoal. A rock, about 2m high, stands close offshore about 3 miles ESE of Daba Libah.

10.12 Anse Ambadu (11°36'N., 43°01'E.), about 10 miles E of Daba Libah, extends about 0.5 mile inland between two high, dark cliffs and dries at the lowest tides.

Oreilles d'Ane, 544m high, about 9 miles SSW of Anse Ambadu, is a good mark but the lack of good marks in the vicinity of Anse Ambadu makes the approach to the anchorage off the bay difficult.

Good anchorage can be taken, in depths of 22 to 25m, sand and mud, about 0.5 mile WNW of the E entrance point of the bay. Care should be taken to avoid the reefs and shoals nearby.

This anchorage provides good shelter during both monsoons. When strong NE winds blow during the day, vessels swing to the light land breeze at night and roll heavily.

Mangadafa (Pointe Noire) (11°36'N., 43°04'E.), about 4 miles E of Anse Ambadu, is low and marked by two small brown hills. To the W of this point, the coast is bordered by a gradually narrowing sand bank with patches of less than 3.7m.

A mud flat and foul rocky ground border the coast on the E side of the point.

Doraleh—Oil Pier

10.13 Doraleh (11°36'N., 43°05'E.) (World Port Index No. 47855) is a new facility located about 1.3 miles E of Mangadafa. The facility consists of an oil terminal connected to the shore by a jetty and a container terminal E of the oil terminal. A bulk terminal is also planned for the facility.

Tides—Currents.—A SE current, at a rate of 1 knot, has been reported (2014) in the approach to the facility.

Depths—Limitations.—The oil terminal is located at the head of the jetty. Berth No. 1, at the outer head of the jetty, can accommodate tankers of 5,000 to 80,000 dwt, with a maximum length of 220m, in a least depth of 20m; a maximum draft of 18m can be accommodated. Berth No. 2 is located on the inward side of a pier extending W from the head of the jetty; it will accommodate tankers of 1,000 to 30,000 dwt, with a maximum length of 100m, in a least depth of 20m; a maximum draft of 10m can be accommodated.

The container terminal is located 1.5 miles E of the oil terminal. The facility, with 1,050m of berthing space and charted depths of 16.4 to 20.0m alongside, can accommodate vessels up to 18m draft. Obstructions, with depths of 16.2m to 16.9m, lie off the face of the terminal.

Aspect.—A channel marked by lighted buoys leads W from Port de Djibouti, passing between Recif Ambouli (Recif de Houmbouli) on the N and Banc de Salines on the S; dangers in the vicinity of the marked channel may best be seen on the chart.

Range lights, located on Banc des Salines and in line bearing 116.5°, lead to the container terminal.

Pilotage.—Pilotage, which is provided by Djibouti (see paragraph 10.16), is compulsory for vessels over 300 tons and is available 24 hours. The pilot boards vessels in position 11°40.2'N, 43°05.2'E, about 1.5 miles NW of Recif du Meteore.

Outbound vessels should advise the pilot station via Djibouti Port Control at least 1 hour prior to departure.

Regulations.—All vessels should send an initial ETA report to Djibouti Port Control/Harbormaster at least 48 hours prior to arrival, or immediately upon leaving the last port, whichever is later. The ETA should also be confirmed 24 hours prior to arrival at the pilot boarding position. The following information should be included in the initial ETA report:

1. ETA, arrival draft, loa, gross tonnage, displacement, number of crew, port of registry, last port, next port, and health information.
2. Stowage plan for cargo to be discharged and order preference.
3. Maximum freeboard measured from manifold to water surface during discharge.
4. Confirm maximum draft alongside will not exceed 20m for Berth No. 1 and 18.5m for Berth No. 2.

5. Best estimate of discharge rate and time.
6. Manifolds, numbered from forward, to be used for discharge.
7. Confirm correct size presentation flanges.
8. Confirm vessel is oil tight and scuppers sealed on arrival.
9. Quantity, origin, and stowage of slops.
10. Free water in slops and cargo.
11. Bunker requirements.
12. Bills of lading in metric tons, vessel loading in metric tons, and densities.
13. Confirm a positive initial metacentric height of at least 0.15m (corrected for free surface) will be maintained throughout all cargo and ballast operations.

Vessels should establish contact with Djibouti Port Control on VHF channel 12 at least 2 hours prior to arrival at the pilot boarding position.

Vessels proceeding to the oil terminal to discharge should forward their contact details via their agent at least 48 hours prior to ETA.

Doraleh—Contact Information	
Djibouti Port Control/Harbormaster	
Call sign	Djibouti Port Control
VHF	VHF channels 12 and 16
Telephone	253-21-354001
	253-21-351284
Facsimile	253-21-357078
E-mail	port@intnet.dj
Horizon Djibouti Terminal (oil terminal)	
Call sign	Horizon Djibouti Terminal
VHF	VHF channels 12 and 16
Telephone	253-77-879644
	253-21-365000
	253-21-315030

Caution.—It has been reported (2010) that depths between the oil terminal and the main port facilities at Djibouti may be less than charted due to siltation caused by heavy rains.

Works are in progress (2016) in an area W of the oil terminal.

10.14 Recif du Meteore (11°39'N., 43°06'E.), with a least depth of 0.3m and marked on its NW side by a lighted buoy, lies on the W side of the N approach to the roadstead off Port de Djibouti.

Banc du Pingouin (11°38'N., 43°07'E.), with a depth of 2.8m, lies about 4 miles NW of Recif du Meteore. These two shoals lie on a bank with depths of about 12 to 18m. A 9.3m patch and a 5.8m patch lie on the W end of this 18m bank, about 1 mile and 1.5 miles WNW, respectively, of Banc du Pingouin.

Banc du El Hadj (11°38'N., 43°04'E.) consists of two patches, with least depths of 4.7 and 7.8m, which lie about 5 miles NW of Port de Djibouti. The bank on which these shoals lie has depths of about 12 to 18m.

Banc du l'Etoile (11°38'N., 43°05'E.), with a least depth of 2.1m, lies about 4 miles NW of Port de Djibouti, on the W end of another bank with depths of about 12 to 18m. There are several detached shoals with depths of about 12 to 18m, lying between Banc du Pingouin and Banc du l'Etoile.

10.15 Recif d'Ambouli (Recif de Houmbouli) (11°37'N., 43°07'E.), which dries, lies on the W side of the roadstead, about 2 miles NW of Port de Djibouti. Several detached patches, with depths of 7.2 to 7.4m, lie close N of this reef. Dangerous wrecks and obstructions, with a least depth of as little as 1m, lie close W of the W end of the reef.

Banc des Salines (11°36'N., 43°07'E.), which dries, lies about 0.5 mile S of Recif d'Ambouli and parallel to it. Several detached patches, some of which dry, lie within 0.5 mile E of the E end of this bank.

The channel between Recif d'Ambouli and Banc des Salines has general depths of 12.8 to 16.5m, but several isolated patches, with depths of 4.2 to 8.7m, lie in it.

Port de Djibouti (11°36'N., 43°08'E.)

World Port Index No. 47850

10.16 Port de Djibouti, the principal roadstead of Djibouti, the former French Territory of Afars and Issas, stands on the SE side of Golfe de Tadjoura. The port, as well as the whole area of Djibouti, is duty-free, with no customs system. Only goods destined for local use are subject to a tax.

Ample modern alongside berthing facilities are provided for cargo vessels. The port operates on a 24-hour basis and is a first port of entry.

Passe Nord, which passes W of Iles Moucha, is the approach used by ocean-going vessels. Passe Ouest, which passes between Recif d'Ambouli and Banc des Salines, is only used by coastal vessels of less that 500 gross tons.

Information on the oil, bulk, and container facilities at Dorelah, located about 3 miles W of Djibouti, can be found in paragraph 10.13.

Port of Djibouti Home Page

http://www.portdedjibouti.com

Winds—Weather.—From the middle of September to the beginning of May, E winds prevail. A land breeze from the S or SW commences at sunrise, shifting around to an E wind in the middle of the morning, becoming stronger in the afternoon, and progressively dropping during the night. Very good visibility generally prevails during this period.

The Khamsin, a local strong, dry, and dusty wind, which normally commences in the latter part of May, but may not start before the middle of June, generally is experienced about 50 times during the summer and normally does not exceed 30 knots.

The Khamsin may occur at any time up to the end of August, but usually will not blow during the afternoon when a sea breeze prevails. When the Khamsin is in full force, the berthing

Djibouti—Mole Sud from W

Djibouti from N

of vessels may be suspended because of the heavy swells in the roadstead.

It has been reported (2007) that winds speeds of up to 50 knots can occur at night.

Tides—Currents.—The mean tidal rise here is 1.1m, while the diurnal rise is 1.6m.

Tidal currents in the roadstead are scarcely perceptible; they usually set to the E during the ebb and W during the flood, rarely attaining a rate of 1 knot, although a rate of 2 knots has been reported (2010) at the height of the flood tide.

Depths—Limitations.—In the N approach to the port, W of Iles Musha, there are general depths of 18 to 36m.

The port consists of a main basin bound on the NE by Jette du Marabout and on the NW by Jetee du Large, which together form the SW extremity of Mole Nord. Mole de Fontainebleau is situated at the SW side of Jetee du Large. Mole Sud bounds the SE side of the basin.

Government Jetty extends 0.6 mile NW; its head is situated 0.1 mile S of the W end of Mole Sud. It can accommodate small craft alongside at the head.

The berths on the N side of Mole Nord are approached through a 150m-wide channel, with general depths of 11 to 12m and marked by range lights, in line bearing 073.9°.

There are facilities for general cargo, reefer, container, bulk, tanker, cruise, and ro-ro vessels. Vessels up to 300m in length and 11m draft can be accommodated.

Obstructions, with depths of as little as 9.6m, lie close off Berth No. 8.

Aspect.—The roadstead lies between Plateau de Heron (11° 37.3'N., 43°09.0'E.) and Mangadafa (Pointe Noire), about 4.7 miles WSW, previously described in paragraph 10.12. The Houmbouli River flows into the S side of the roadstead, which is encumbered with drying coral reefs.

Djibouti stands on a peninsula, with Plateau de Heron at its N end. Banc de Heron, a drying coral reef, extends up to 1 mile W of Plateau de Heron.

In clear weather, Direction Hill (11°29'N., 43°07'E.), a double peak, 166m high, rising about 8 miles SSW of the port, forms a good landmark in the approach to the roadstead.

Two prominent radio masts stand about 0.4 mile E of the port; two tank farms are situated between them and the harbor basin. A conspicuous water tank, 31m high, stands about 1 mile ESE of the port, close E of the railroad station; it has been reported (2013) the water tower is completely obscured by other buildings.

A prominent beacon stands at an elevation of 127m, about 4.2 miles SW of the port.

Two conspicuous gantry cranes are situated on Mole Sud, at the SE side of the main basin.

An aeronautical light is shown from a structure standing in the vicinity of the airport, about 3.5 miles SSE of the port.

The approach channel from N is mark by a lighted range, in line bearing 184°24', which may best be seen on the chart. The aft range is a beige building with a red vertical stripe down its center, while the forward range is a slightly smaller beige building with a red chevron pointing up. It has been reported (2012) the range may be difficult to discern due to haze and excessive background clutter.

Port de Djibouti—Berthing Information

Berth	Length	Depth alongside	Remarks
Mole Sud			
No. 1	180m	9.5m	Container and ro-ro cargo.
No. 2	220m	8.6m	Container and ro-ro cargo. Obstructions, with depths of 11.1m and 11.3m, lie close off the berth.
No. 3	220m	11.0m	Ro-ro. West side of Mole Sud close N of Berth No. 2.
Mole Nord (south side)			
No. 4	150m	3.6m	Coastal vessels.
No. 5	230m	7.2m	Coastal vessels.
Jetee du Large (southeast side)			
No. 6A	170m	7.8m	General cargo.
No. 6B	93m	7.8m	General cargo.
No. 7	170m	7.8m	General cargo.
No. 8	202m	6.7-7.9m	General cargo.
Mole du Fontainebleau (head of Jetee du Large)			
No. 9	70m	10.0m	Multi-purpose berth.
Jetee du Large (northwest side)			
No. 10	270m	10.9m	Tanker berth.
No. 11	270m	12.0m	Tanker berth.

Port de Djibouti—Berthing Information			
Berth	**Length**	**Depth alongside**	**Remarks**
No. 12	270m	12.0m	Tanker berth.
Port du Heron—Mole Nord (north side)			
No. 13	210m	9.5m	Cruise ship and multi-purpose terminal.
No. 14	290m	12.0m	General and bulk cargo. Obstructions, with depths of 10.2m and 11.0m, lie close off the berth.
No. 15	107m	9.4-10.4m	General and bulk cargo.

Djibouti from S

Pilotage.—Pilotage is available 24 hours and is compulsory for vessels over 300 tons in an area bounded by the shore and lines joining the following positions:

a. 11°35.3'N, 43°06.0'E. (shore)
b. 11°39.0'N, 43°06.0'E.
c. 11°39.0'N, 43°10.0'E.
d. 11°37.4'N, 43°09.0'E. (shore)

Pilots can be contacted on VHF channel 12 or 16 and board in the vicinity of Lighted Buoy No. 2 (11°37.5'N., 43°07.9'E.), moored off the NW side of Banc du Heron.

It has been reported (2012) that pilot boarding for inbound vessels may be delayed when winds exceed 15 knots due to limitations on the pilot vessel.

Regulations.—All vessels should sent their ETA via their agent 48 hours in advance. The following information should be included in the ETA message:

1. Vessel name.
2. IMO number.
3. LOA.
4. Beam.
5. Voyage number.
6. Flag.

Djibouti from N

Djibouti—Jetee du Large from SW

7. Vessel type.
8. Gross tonnage and nrt.
9. Arrival draft, fore and aft.
10. Previous port and next port.
11. ETA.
12. Cargo type/tonnage/number and status of containers.
13. Discharging/loading list.
14. Special container list.
15. Other information.

Vessels must maintain a continuous listening watch on VHF channel 12 when in port.

The vessel's engines should be kept operational, unless permission has been granted by the harbormaster to the contrary.

It has been reported (2013) Djibouti Port Control will contact vessels and request the following information:

1. Vessel name.
2. Call sign.
3. Flag.
4. ETA to pilot station.

Signals.—Traffic signals are displayed from a signal station, consisting of a flagstaff surmounting a blue building, situated on the NE end of Jetee du Large. Vessels can communicate with this station by means of the International Code of Signals.

Contact Information.—Contact information for Djibouti Port Control can be found in paragraph 10.13 in the table titled **Doraleh—Contact Information**.

The Port Authority can be contacted, as follows:

1. Call sign: Comport Djibouti
2. VHF: VHF channels 12 and 16
3. Telephone: 253-21-354001
4. Facsimile: 253-21-357078
5. Telex: 979-5836 PORTAUTO DJ
6. E-mail: port@intnet.dj

Anchorage.—A designated anchorage area, the limits of which may best be seen on the chart, lies centered 1.6 miles NW of the port. It has depths of 11 to 22m and lies between Recif de Houmbouli and Banc du Pinguin. It has been reported (2004) that depths of up to 1.6m less than charted exist in the anchorage area.

A designated anchorage for LASH vessels, with a depth of 15m, lies about 0.4 mile W of the head of Mole de Fontainebleau.

It has been reported (2013) vessels may be anchored E of the approach channel between Lighted Buoy No. 0 and Lighted Buoy No. 2.

Directions.—Vessels approaching from N should first make a landfall off Ras Bir (11°59'N., 43°22'E.) and then steer for a position lying about 5 miles NNW of Iles Moucha. From this position, vessels should make good a course of 240° until the lighted range at the head of the roadstead is sighted.

When the sun is high, the reefs around Iles Moucha are clearly visible. During the day, the lighted range beacons are reported to show up well against the brown background of Direction Hill.

If the lighted 184°24' range cannot be seen after a vessel rounds Iles Moucha, as the case may be during sandstorms, the W edge of Plateau du Heron in range, bearing 161°, with the prominent water tower standing on Plateau du Serpent, close E of the railroad station, will lead clear of the dangers lying W of Iles Moucha.

The E approach, which passes S of Iles Moucha, should only be used in good visibility by small vessels with local knowledge.

Caution.—A prohibited anchorage area, the limits of which may best be seen on the chart, lies close W of the port and extends up to 4.75 miles N.

It has been reported (2004) that depths of up to 2.7m less than charted exist in the approaches to the port. There is a least charted depth of 17m along the charted 099° range; it has been reported (2006) that the actual least depth is only 10.6m.

During the Southwest Monsoon, swells up to 2.5m in height have been experienced at the berths on the outer side of Jetee du Large.

Obstructions, with depths of 7.7 to 9.6m, lie close E, SW, and W of the head of Mole de Fountainebleau. It has been reported that these obstructions were not found during a recent survey (2006).

A drying patch, which dries up to 0.5m, is located close SW of Berth No. 3 on the S side of Mole Nord.

A restricted area, where fishing, trawling, and anchoring are prohibited, extends from N through E of Plateau du Heron and is bounded by the coast and lines joining the following positions:

a. 11°36'12.0"N, 43°09'30.6"E. (coast)
b. 11°37'19.2"N, 43°12'35.4"E.
c. 11°44'52.8"N, 43°20'47.4"E.
d. 11°42'11.4"N, 43°24'24.6"E.
e. 11°34'28.2"N, 43°18'25.8"E.
f. 11°34'53.4"N, 43°13'29.4"E.
g. 11°34'15.0"N, 43°09'56.4"E. (coast)

10.17 The coast between Port de Djibouti and Baie Dalwakteak, about 11 miles SE, is low and thickly covered with mangroves. The coastal reef off this stretch of coast extends up to 1.5 miles offshore and mostly dries.

An area prohibited to navigation extends up to 3 miles off this coast, from a point about 2 miles NW of Ile Waramos to the Somali border.

A prohibited anchorage containing submarine cables extends from the E side of Djibouti, E for about 9 miles, thence NE for 8 miles. Both areas are best seen on the appropriate chart.

Ile Waramos (Ouaramous) (11°33'N., 43°11'E.) lies on the coastal reef SE of Port de Djibouti. Several above-water rocks stand in the vicinity of this islet.

Baie Dalwakteak (11°29'N., 43°16'E.), entered between a point about 4 miles SSE of Ile Waramos and Ras Gumarlah, a similar distance further SE, provides sheltered anchorage.

Ras Gumarlah is the outer extremity of a low sandy irregular strip of land which extends a short distance N from the coast, and then about 1 mile to the W.

An islet lies on the coastal reef, about 1 mile ENE of Ras Gumarlah.

Small vessels with local knowledge can anchor in Baie Dalwakteak, in a depth of 7.3m, but it should only be approached at LW when the dangers are visible.

Anchorage can also be taken close outside this bight, in a depth of 12.8m.

Gutta Tella Ousal (Banc Guttal Tella) (11°32'N., 43°14'E.), a drying reef, lies about 4 miles NW of Ras Gumarlah.

10.18 Banc Moidubis Kebir (11°34'N., 43°17'E.), a steep-to reef, drying in places, extends about 2 miles N from a position about 4 miles NNW of Ras Gumarlah.

Banc Moidubis Seghir (11°32'N., 43°17'E.), a steep-to reef, drying in places, lies about 2 miles NNW of Ras Gumarlah. A detached 5.5m patch lies 0.5 mile off the SE side of this reef.

The depths charted in an area formed by a line extending ESE from Plateau du Heron to Moidubis Kebir then SSW to the shore at Loyada, differ greatly from those determined by an earlier French survey.

The coast between Ras Gumarlah and Saylac, about 12 miles ESE, is bare and swampy. The coastal reef, which dries in places and has several islets on it, extends up to 3 miles offshore.

A narrow sand bank, which partially covers at HWS, extends 2 miles NE and then 3.5 miles N from a position about 3 miles SE of the end of Ras Gumarlah. This bank is surrounded by Recif Turuhat.

This reef extends 1 mile N and then 2 miles NE from the N extremity of the sand bank and has irregular depths of 3.7 to 11m, with many rocky heads. The N extremity of Recif Turuhat dries in places.

General depths of 18.3 to 20m exist in the bight W of Recif Turuhat, but four detached rocky patches lie up to 2.5 miles W and 3.5 miles WNW of the N end of the sand bank on Recif Turuhat.

Besides a rocky patch located about 3 miles SE of the N end

of the sand bank, the bight E of the sandbank has depths of 10 to 18.3m, and is apparently clear of dangers.

The **Mosheikh Islets** (Mosheykh) (11°26'N., 43°22'E.), bush-covered, stand on the coastal reef SE of the above sand bank.

10.19 Saylac (Zeila) (11°22'N., 43°28'E.), a small town in poor condition, stands on a sandy spit projecting from the coast and almost level with the sea. The district commissioner's house, with a flagstaff nearby, stands in the NE part of the town and is the most conspicuous house. The customhouse stands in the same part of the town.

A shallow stone pier extends NW from the NW part of the town. A small hospital and dispensary are available.

During the Southwest Monsoon, the heat is excessive and most of the people leave for the interior. Cargo is handled in the roadstead about 2 miles N of the town.

Tides—Currents.—The currents usually set with the winds along the coast off Saylac and sometimes attain a velocity of 0.5 knot. In the roadstead, the currents often set against the wind, although the latter may be fairly strong.

At springs, the tidal currents usually set W through the roadstead during the flood and E during the ebb, at a rate of about 0.5 knot, but the direction is greatly influenced by the winds.

Shac Siigaale (Sea Gull Shoal) (11°24'N., 43°37'E.), about 9 miles ENE of Saylac, and Shaab Filfil, about 2 miles of Shac Siigaale, are both steep-to on their E sides. These two reefs are always covered and never are clearly visible.

A low sandy spit on which Saylac is built extends about 3 miles from the coast and then continues for 1.5 miles as a shoal, which dries in places. Shoals, with depths of less than 5.5m, continue toward Shac Siigaale. A detached reef, which dries, lies about 1 mile W of the N end of Shac Siigaale.

Several shoals, with depths of 5.5 to 9.1m, lie between and W of these two reefs, but less water than charted has been reported to exist in this vicinity.

Depths in the approaches to Saylac are reported to be considerably less than charted.

10.20 Ceebaad (Aibat Island) (11°30'N., 43°28'E.), about 9 miles N of Saylac, is low, sandy, and covered with bushes. It stands on the W part of a reef, which dries at LW, and extends about 2 miles N, 3.5 miles E, and 1 mile SE, respectively, from the island. A detached reef lies about 0.5 mile WNW of the N end of the island; a shoal, with depths of 2.7 to 5.6m, extends about 2 miles SW from the SW end of the reef.

A beacon, standing on the N end of Ceebaad, consists of a sand-colored cone, with a black ball topmark. The beacon is usually visible only when the sun is in a favorable position.

Saacada Diin (11°26'N., 43°28'E.), about 3 miles S of Ceebaad, is low, sandy, and almost covered with bushes about 6.1m high. The island is fringed by a drying bank, which extends about 0.5 mile from the E side and 0.5 to 1 mile from the other sides.

A shoal, with a least depth of 0.3m, joins the E side of the drying bank surrounding Saacda Diin and extends about 2 miles NE. A 4.6m shoal lies about 2 miles E of the SE end of Saacada Diin.

The area between Saacada Diin and the coast to the SW is almost completely obstructed by drying shoals with depths of less than 5.5m.

10.21 Channel Reef (Recif du Chenal) (11°28'N., 43°33'E.), with a least depth of 2.1m, coral, lies about 6 miles ESE of the N end of Ceebaad. The passage between this reef and the reef extending E from Ceebaad has depths of 1.8 to 16.5m; the passage between Channel Reef and Shaab Filfil has a least depth of 6.4m.

The roadstead N of Saylac provides anchorage, in depths of 7.3 to 9.1m, sand and mud, good holding ground. The best berth lies about 2 miles N of Saylac, in a depth of 7.3m.

During the Northeast Monsoon, a moderate swell sets into the roadstead, generally increasing in the afternoon. It has been reported that due to heavy silting at the anchorage, the charted depths are unreliable.

Directions.—The best time to approach Saylac is in the morning. A good lookout should be posted aloft and soundings taken continuously, because no landmarks are visible on the low land for ascertaining the vessel's position.

When within a line joining Ceebaad and Shac Siigaale, the water is usually very discolored, making it impossible to distinguish between the deep water and the shallow water.

Saacada Diin, the beacon on Ceebaad, and the town of Saylac should be visible from aloft when about 1 mile offshore of Shaab Filfil. Conical Hill, about 11 miles WSW of Saylac, is 118m high, and may be a useful mark in clear weather.

The beacon on Ceebaad is the best mark when approaching from the N. From a position about 5 miles E of this beacon, make good a course of 195°, which is about 0.5 mile W of Channel Reef. When the S end of Saacada Diin bears about 270°, make good a course of 243°, which leads to the anchorage.

If coming from the SE and entering by the same passage, keep in depths of not less than 36.6m until the beacon on Ceebaad bears 290°. Steer for this beacon on this course until it is about 5 miles distant, or until the NW end of Saacada Diin bears 245°. Course can then be altered for the anchorage as previously directed.

10.22 The low, swampy coast between Saylac and Raas Maskan, about 12 miles SSE, is backed by a range of sand hills, 9 to 73m high, which stand about 2 miles inland. This range of hills continues SSE for about 13 miles to Khor Galangareet at distances of 1 to 2 miles inland.

A low sandy plain extends from Khor Galangareet to the base of the mountains, about 20 miles inland. This coast is fringed by reefs and shoals extending up to 1.5 miles offshore.

The 20m curve off the coast between Saylac and Khor Galangareet extends S from a position close E of Shac Siigaale and gradually closes the coast.

Raas Maskan (11°12'N., 43°33'E.) is low, round, and slightly projecting.

Khor Maduji (11°07'N., 43°35'E.), about 5 miles SSE of Raas Maskan, is reported to be connected by a backwater with Khor Galangareet. Both of these rivers are available only to small boats.

Shacaabi Shiikh Yacquub (Shab Sheikh Yakab) (11°18'N., 43°34'E.), about 6 miles SE of Saylac and 4 miles offshore, has a least depth of 1.8m.

A rocky 4m patch lies midway between Shacaabi Shiikh

Yacquub and the coast; a small 9.1m patch lies about 2 miles SSE of this same reef.

A 5.5m patch lies about 7 miles SSE of Saylac and 1.5 miles offshore. A reef, with a depth of less than 1.8m, lies about 3 miles NE of Raas Maskan. Depths of 9m lie close N and S of this reef.

A shoal, with a least depth of 1.8m, lies about 1.5 miles ESE of the entrance of Khor Maduji; the sea breaks heavily on this shoal at times.

10.23 Shab Maduji (11°03'N., 43°40'E.), about 5 miles SE of the entrance of Khor Maduji, has a drying part near its SE end. A 3.6m patch lies about 0.5 mile W of the drying part of Shab Maduji.

Galangareet (10°57'N., 43°44'E.), a rocky patch with depths of less than 1.8m, lies about 6 miles ESE of the entrance of Khor Galangareet and 2 miles offshore.

The coast between Khor Galangareet and Berbera is generally bold, with depths of 11 to 12.8m close in, and with the exception of Galangareet, no known dangers exist seaward. This part of the coast has not been closely examined and great care should be taken when approaching.

Lughaye (Dagarita) (10°40'N., 43°57'E.), about 11 miles SE of Galangareet, is the name of a district. The low coast in the vicinity is bush-covered for many miles. The town may be recognized by two small clumps of palm trees, which show up well from either the SE or NW. In clear weather, the high mountains in the vicinity are visible.

Anchorage can be taken by small vessels with local knowledge, in a depth of 11.9m, about 0.5 mile offshore.

Sabawanaag (Saba Wanak) (10°33'N., 44°07'E.), about 13 miles SE of the palm trees at Lughaye, may also be identified by a clump of date palms near the coast.

Jebel Almis (10°21'N., 44°12'E.), a rugged irregular mountain, is 610m high. It rises about 13 miles SSE of Sabawanaag and is an excellent landmark.

Anchorage can be taken by small vessels, in a depth of 11m, sand, about 0.7 mile offshore. It has been reported that the best time to approach the anchorage is at dawn or shortly thereafter, when the white houses of the town stand out well.

10.24 Bullaxaar (Bulhar) (10°24'N., 44°24'E.), once very important commercially, is now practically deserted. The town is difficult to distinguish, especially if the sun is behind.

Close E of Bullaxaar are some conspicuous date palms, which are the only trees near the coast between this place and Berbera.

A small sand bank, awash in places, parallels the coast off Bullaxaar about 0.1 mile offshore. The W end of this bank lies N of the residency. The smoothest water for landing is found by passing around the W end of this bank, but small boats can pass over it at HW.

Partially-sheltered anchorage can be taken by small craft between this bank and the coast. A heavy surf rolls in throughout the year and during bad weather.

Anchorage can be taken, in depths of 11 to 12.8m, about 0.5 mile offshore, with the town bearing between 150° and 200°. When about 2 miles from this anchorage, reduce speed and approach cautiously, because the depths shoal rapidly.

Berbera (10°27'N., 45°01'E.)

World Port Index No. 47820

10.25 Berbera, a medium-size port used by general cargo vessels and oil tankers, stands at the head of a natural inlet. The tankers are handled at an offshore mooring berth lying about 0.5 mile WSW of the main port facilities.

Berbera Port Authority Home Page
http://www.berberaseaport.net

Winds—Weather.—From the middle of the afternoon until about midnight, a stiff breeze blows from the NE; from midnight until noon, a calm prevails. During the Southwest Monsoon, the climate is very hot though not unhealthy, but during the Northeast Monsoon, it is comparatively cool; with a good breeze outside, it is comparatively calm within the harbor.

Tides—Currents.—The mean tidal rise here is 1m while the diurnal rise is 1.7m. Tidal currents are negligible.

Depths—Limitations.—There are depths of 20 to 32m in the approach to the harbor, decreasing to 11m off the berths.

An offshore mooring buoy berth is situated on the SW side of the harbor. A steel pier carrying pipelines extends 0.3 mile NW and connects the berth to the shore. Tankers up to 165m in length and 8.5m draft can be handled. It has been reported that the oil terminal is damaged, the storage facilities are not operational due to power shortages, and that some of the mooring buoys are partially submerged.

A quay, 640m in length, is situated on the S side of the harbor, close E of the oil terminal. It is connected to the shore by two bridges and has a depth of 9m alongside. There is a ro-ro berth at the W end. Vessels up to 12,000 dwt and 8.5m draft can be accommodated.

Aspect.—The port lies within an inlet located between the coast and a low sandy spit extending about 2 miles WSW from the shore. Raastamar (Tamar Point), marked by a light, is the outer extremity of this spit.

A high irregular mountain range stands SE of Berbera. Great Gap, a remarkable pass through the mountain range, stands about 8 miles SE of the port. Six peaks, all inclined to the E, may be viewed through this gap when it is bearing SSW.

A prominent hill stands about 13 miles WSW of Raastamar and 2.5 miles inland. It is 249m high and has a white sandy patch on its N side.

A small round hill stands about 5 miles SSW of Raastamar. It is 113m high and has a white sandy patch on its E side. This conspicuous hill is the highest in the vicinity of the port.

A light is shown from a white tower standing on the coast, 1.5 miles SSW of Raastamar Light.

A prominent group of oil tanks is situated on the coast, about 1. 3 miles SE of Raastamar Light. Most of the town buildings stand near the head of the inlet. The Shaab, the residential quarter, is situated close S of the head. It is surrounded by a wall, 5m high. Several radio masts stand 0.5 mile S of the Shaab.

A large conspicuous warehouse stands on the general cargo wharf. A conspicuous stranded wreck is reported to lie close off the E side of this wharf.

The approach is marked by lighted buoys, which may best be seen on the chart. A lighted range, situated at the head of the inlet, indicates the approach to the inner anchorage.

Pilotage.—Pilotage is compulsory for all vessels over 200 gross tons. Pilots can be contacted on VHF channel 12 or 16.

During good weather, pilots board at the outer anchorage 0.5 to 1 mile SW of Raastamar Light. During inclement weather, pilots board in the inner anchorage.

Regulations.—Vessels should send their ETA 48 hours in advance, via their agent, who will inform the Port Authority.

Vessels should contact Berbera Port Control and state the following:

1. Vessel name.
2. Flag.
3. Call sign.
4. Draft fore and aft.
5. Gross tonnage.
6. Net registered tons.
7. Discharge tonnage and type.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 252-2740333
2. Facsimile: 252-2740224
3. E-mail: info@berberaseaport.net
   berberaport@gmail.com

Port Control can be contacted, as follows:

1. Call sign: Berbera Port Control
2. VHF: VHF channels 12 and 16
3. RT frequency: 8220 kHz

The harbormaster can be contacted by telephone (252-2446187).

Anchorage.—A designated outer anchorage area, the limits of which may best be seen on the chart, lies centered 0.7 mile SW of Raastamar Light and has depths of 15 to 31m.

A designated inner anchorage area, the limits of which may best be seen on the chart, lies centered 0.6 mile ESE of Raastamar Light and has depths of 17 to 20m.

The holding ground at the inner anchorage is reported to be good, but caution is necessary, as depths at the NE corner of the area were reported to be less than charted. Whatever the sea state or direction of the wind, vessels are required to remain N and clear of the harbor entrance range.

Directions.—Vessels should head S for the light shown from the mainland coast and pass about 0.3 mile W of Raastamar, but care should be taken against a current which sets E toward the point. A lighted range then leads to the inner anchorage.

Caution.—Caution is necessary because, during the monsoon, blowing sand occasionally obscures the range; trees in the vicinity of the front range beacon may make that structure difficult to see.

During the trading season, October to March, the lights of the navigation aids may be difficult to distinguish from the riding lights of dhows anchored close inshore.

It was reported (1993) that much of the port facilities and aids had been damaged. Silting in the inlet was also reported.

10.26 The coast between Berbera and Raas Khansiir, about 53 miles ENE, is low and sandy. The bottom near the coast consists of sand and shells, while off the coast the bottom is sand and coral.

The depths are more suitable for anchoring off the NE half of this part of the coast.

Ras Calveyn (10°31'N., 45°06'E.) is low and sandy, with a 3.7m rocky patch about 0.5 mile NW of it. Siyara, about 11 miles ENE of the point, is deserted and in ruins.

Exposed anchorage can be taken, in a depth of 9.1m, about 0.5 mile off Siyara. The coast between Ras Xatiib, about 7 miles NE of Siyara, and Ras Cuuda, about 17 miles farther ENE, is fringed by depths of less than 5.5m, which extend up to 1 mile offshore.

Anchorage can be taken, in depths of 11 to 14m, between 1 mile and 1.5 miles off the village of El Darad, about 3 miles SSW of Ras Cuuda.

Small vessels can obtain shelter from E winds in the area between Ras Xatiib and Ras Cuuda, which is reported to recede more than shown on the chart.

Raas Xemra (10°48'N., 45°43'E.), about 7 miles ENE of Ras Cuuda, is slightly projecting and 72m high. When seen from the W, this black point shows up well.

Karin (10°50'N., 45°47'E.), a village about 4 miles ENE of Ras Xemra, stands in a valley with a white sandy patch on its SW side. This deserted village is similar to El Darad, but contains more huts. A reef and a sandspit extend about 0.5 mile offshore abreast of the village.

Sheltered anchorage can be taken, in depths of 7.3 to 18.3m, sand, about 0.5 mile W of Karin.

A vessel has anchored, in a depth of 25.6m, about 0.5 mile offshore with a prominent stone house at Karin bearing 135° and the NW bluff of Raas Khansiir bearing 073°.

Raas Khansiir to Raas Xaafuun

10.27 Raas Khansiir (10°52'N., 45°49'E.), low and rocky, is marked by sandy beaches on both sides. From the NW, the point is easily identified by a large triangular patch of sand near it, backed by a dark hill. A range of irregular hills rises inland from the point. Tri-Khiil (Tree Hill), 620m high, stands about 5 miles SSE of the point.

Anchorage has been taken, in a depth of 36.6m, with Tri-Khiil bearing 155° and **Black Peak** (10°38'N., 45°35'E.) bearing 220°. The coast up to 22 miles E of Raas Khansiir is backed by a range of undulating hills. Jebel Mara, about 24 miles ESE of Raas Khansiir, is isolated, and Sugarloaf Peak, about 5 miles farther SE, rises to a height of 303m.

Ankhor Peak (10°32'N., 46°11'E.) 1,128m high, stands 12 miles S of Jebel Mara. Jebel Warsangeleh, a high range 10 to 25 miles inland, extends about 140 miles E from **Pyramid Peak** (10°43'N., 47°00'E.), which is 1,570m high. This range is level with its crest and has no prominent peaks. The E half of this range consists of a limestone ridge, 1,829 to 2,133m high, steep on its N side, with a gradual slope on its S side.

Shimber Berris (10°44'N., 47°15'E.), about 15 miles E of Pyramid Peak, is the summit of this range and rises to a height of 2,408m. Toward the lower coastal hills, and at each end, the range descends in steps, forming vertical slopes 244 to 305m high.

10.28 Jebel Mait (10°55'N., 47°03'E.), 396m high, about 12 miles NNE of Pyramid Peak, stands N of the W end of Jebel Warsangeleh.

Quoin Hill (11°00'N., 47°23'E.), rising about 21 miles ENE of Jebel Mait, is distinguishable only from the N.

Jebel Buredo, an isolated sugarloaf hill, about 6 miles NNE of Quoin Hill, and Jebel Alat and Jebel Barait, about 7 and 12 miles, respectively, SE of Jebel Buredo, are other peaks in the vicinity. Jebel Buredo is the only conspicuous peak.

Gheljoga (11°06'N., 48°52'E.), N of the E end of Jebel Warsangeleh, is a conspicuous double peak, 638m high. This peak stands in the mountain range beyond the low and broken coastal range of sand hills. A remarkable gap in the coastal range stands close NE of Gheljoga. Bur Bodet, 870m high, is the highest peak of a range of hills near the coast, about 32 miles ENE of Gheljoga. Jebel Antara, about 14 miles farther ENE, is a rocky table range, 1,300m high, which is thickly-covered with vegetation and trees.

Bur Corcori, 2,020m high and the highest mountain in the vicinity, stands about 10 miles SE of Jebel Antara, about 17 miles farther E; a ridge of limestone mountains extends about 32 miles ENE and then turns SSE to a hummock-shaped mountain, visible from a great distance. Another range of similar mountains extends ESE from this mountain.

10.29 Gwardafuy(Ras Caseyr) (11°50'N., 51°18'E.), which is further described in paragraph 10.43, is the NE extremity of Africa, and rises to a height of about 244m. From the cape S, the Jebel Gural Range extends SW and S and is separated by a valley. A conspicuous knob stands on the tableland NW of the above range, about 9 miles SW of Gwardafuy. About 2 miles NW of this knob, and separated from it by a deep ravine, is a sharp peak 891m high.

Gheizani, 833m high, stands in the N part of Jebel Gural, and is conspicuous from S because of the steep slope of its E end. Dehfo, 741m high and conspicuous, stands near the S end of Jebel Gural; a conspicuous knob, 591m high, stands at the S end.

From Jebel Gural to the S, the coast is backed by a range of flat tableland, 152 to 183m high. Abd al Kuri, about 52 miles ENE of Gwardafuy, consists mostly of mountains, except in its central part, rising to an elevation of 600 to 622m in the E part and 269m in the W part.

The Brothers consist of two islands standing about 35 and 50 miles E, respectively, of Abd al Kuri. The W island is 780m high and the E island is 391m high. Suqutra, about 130 miles ENE of Gwardafuy, rises to a height of 1,519m in Jabal Haggier, about 30 miles W of the E end of the island.

Tides—Currents.—During the Northeast Monsoon, a countercurrent occasionally sets E along the African coast, between **Mait Island** (11°13'N., 47°13'E.) and the meridian of 49°E, at a velocity of 0.5 to 2.5 knots.

Currents have also been reported setting toward the coast, at velocities of 0.5 to 1.5 knots.

During the Southwest Monsoon, an eddy current sets W along the African coast to near the meridian of 45°E, at a velocity of about 1.5 knots. However, this current is not continuous, and E and S sets are also experienced.

The strongest W currents reported many years ago between the meridians 48°E and 50°E, had a velocity of about 0.5 knot.

Variable currents were experienced off the Somali coast, and occasionally countercurrent were experienced near the coast. The former usually set W at a rate of 0.5 knot. In May, a strong S current was experienced near Ile Mait. Except for a slight W set off Ile Mait, no current was experienced, at the end of February, many years ago, between Berbera and Las Khoreh.

Years ago, a vessel while proceeding E at a distance of about 30 miles off the coast of Qooriga Gobed Rugguuda, experienced a S current with a velocity of about 1 knot and was set well into this bay; very little W current was experienced. Ile Mait was then closed, and a course of 000° was steered for 4 hours; the island was visible for the first 3 hours and no E or W current was experienced.

Course was altered for Las Khoreh at 2045 and speed adjusted to arrive at 0700. In the morning, the course had been made good, but the vessel was 20 miles behind the dead reckoning position, a WNW current having apparently been experienced from about midnight. The wind was not more than force 2.

Depths—Limitations.—The 200m curve between Raas Khansiira and Gwardafuy generally parallels the coast, at distances of from 1 to 7 miles offshore, except in the vicinity of **Ile Mait** (11°13'N., 47°13'E.). In this vicinity, the 200m curve lies up to 10 miles offshore. South of Gwardafuy, the 200m curve lies from 7 to 30 miles offshore. The only known danger in the vicinity of this curve is a 18.3m patch lying about 14 miles ENE of **Raas Xaafuun** (10°27'N., 51°24'E.).

Abd al Kuri lies on a 200m bank, which extends up to 2 miles N, 13 miles E, 5 miles S, and 3.5 miles W, respectively, of the island.

The Brothers and Suqutra lie on an extensive bank which has depths of less than 200m. This bank extends about 29 miles WSW and about 35 miles E and S of The Brothers, and probably more, but the locality has not been thoroughly examined. Those islets and dangers which lie in the vicinity of the above islands will be described under the principal description of the coast which they front.

A bank, with irregular depths of 73 to 179m, coral, sand, and shells, extends about 20 miles E from a position about 15 miles NNE of **Ras Illaue** (11°59'N., 50°47'E.).

Within 13 miles N of the E extremity of this bank are two banks; the S bank has depths of 77m and the N bank has depths of 77 to 110m.

A bank, with a depth of 54.9m, was reported to lie about 42 miles NE of Ras Alula.

10.30 Gubed Canqor (10°49'N., 46°01'E.) is entered between Raas Khansiir and the village of Canqor, about 45 miles ENE. The low sandy shore of this bight is bush-covered. Khoor Shoora, a shallow lagoon, lies 3.5 miles ESE of Ras Khansiir. The reef-fringed coast at Canqor is not suitable for landing.

Anchorage can be taken, in a depth of 12.8m, sand and coral, about 0.5 mile offshore, at the village of Canqor. The best anchorage lies off Raas Khansiir, where the holding ground is good.

Gubed Rugguuda (10°47'N., 46°36'E.) is entered between a point about 2 miles E of Canqor and Raas Jilbo, about 45 miles ENE. The low, sandy shore of this bay is fringed in places by shoals. At times, even during the Northeast Monsoon, a considerable swell sets in.

Nasiga (10°41'N., 46°30'E.), a deep ravine about 15 miles ESE of Canqor, is marked by several streams during the rainy season.

Ruggunda (10°42'N., 46°37'E.), a village, in ruins, is not

easily identified. A salt water lagoon and heavy vegetation is found in the vicinity.

A vessel anchored about 1 mile NNW of the lagoon entrance, in a depth of 12.8m, with very good holding ground.

10.31 Mulaax Beyle (Shulah) (10°46'N., 46°42'E.) stands on Raas Shulah, at the mouth of a stream, about 6 miles ENE of Raggunda. The village consists of several stone buildings and huts. The mouth of the stream can be identified by the vegetation in the vicinity. Finger Peak, pointed and about 4 miles SE of Raas Shulah, is a good mark in the approach to the village.

Anchorage can be taken off Raas Shulah, in a depth of 23.8m, with Finger Peak bearing 130° and Heis Islet to the ENE bearing 060°. Pyramid Peak, previously described in paragraph 10.27, Xiis, and Haycock, a peak about 11 miles WSW of Finger Peak, are useful marks when approaching this anchorage.

Xiis (Heis) (10°53'N., 46°54'E.), about 14 miles ENE of Raas Shulah, consists of some stone houses which are only inhabited during the trading season. A white house and a fort are conspicuous. A shoal, with some coral reefs, awash, extends about 0.5 mile offshore in the vicinity of this village.

Xiis (10°54'N., 46°54'E.), about 2 miles NNE of Xiis, is rocky and 52m high. It is connected by a causeway with Jebel Ret, a high bluff on the coast. This causeway dries about 0.6m.

A steep conspicuous ridge extends S from Jebel Ret to a gap SE of Xiis. A rock, with a depth of less than 1.8m, lies close N of the islet.

Sheltered anchorage can be taken, in a depth of 22m, with the center of Xiis peak bearing 057°. A vessel anchored, in a depth of 22.9m, with Xiis peak bearing 053° and the fort in Xiis bearing 165°.

10.32 The coast between **Raas Jilbo** (10°56'N., 46°59'E.) and Raas Xatib, about 11 miles NE, is sandy for the first 7 miles and cliffy for the remaining distance.

From Raas Xatib to within about 3 miles of Raas Surud, about 22 miles ENE, the coast is low, sandy, and sparsely covered with bushes; a short distance inland then to Raas Surud, it is composed of low cliffs.

Mait (10°58'N., 47°04'E.), a village on a small plain, consists of some buildings and is almost uninhabited. A conspicuous white tomb stands 2 miles WSW of Mait. Mait carries on a small coastal trade with Aden and Al Mukalla.

Sheltered anchorage can be taken close to the coast NE of Mait in deep water, or in depths of 11 to 12.8m, about 0.5 mile offshore W of Mait. The stern of the vessel when swinging head on to the WNW wind will be in a depth of 13.7m.

Marso Saneekhaal (11°01'N., 47°07'E.), formed by a sand spit extending SW from the coast, lies close SW of Raas Xatib.

Good anchorage can be taken, in depths of 12.8 to 22m, about 183m offshore sheltered from winds from the ENE. Vessels have anchored, in a depth of 22m, within 0.5 mile of the shore.

Raas Xatib (11°03'N., 47°08'E.), about 6 miles NE of Mait, has a small inlet nearby. Anchorage can be taken, in a depth of 22m, sand, about 183m off Raas Xatib.

Senacca (11°04'N., 47°12'E.), about 5 miles ENE of Raas Xatib, is sheltered by a low sandspit extending from the coast. This spit is difficult to make out from seaward but if a vessel steers for the coast about 0.5 mile E of a conspicuous strip of fair-sized shrubs, this spit will soon be visible on the port bow.

A moderate-sized vessel with local knowledge can take excellent but confined anchorage off Senacca.

Raas Xumbays (11°07'N., 47°16'E.), about 8 miles E of Raas Xatib, is low and sandy.

10.33 Bandar Xarshow (11°10'N., 47°24'E.), about 10 miles ENE of Raas Xumbays, consists of a small village, with a few inhabitants during the trading season from October to May. It consists of the ruins of a large building and a few huts.

A breaking reef extends up to 0.2 mile offshore between a position about 2 miles W of Bandar Xarshow and Raas Surud.

A bank extends about 0.5 mile offshore abreast Bandar Xarshow.

Maydh (11°13'N., 47°13'E.), about 6 miles NNW of Raas Xumbays, is 131m high and composed of bare rock covered with guano. A remarkable cove indents the S side of the island but its entrance is blocked by some large stones.

A spit, with a least depth of 3.7m, extends about 183m from the E end of the island.

General depths in the passage between the island and the mainland are 23.8 to 45.7m, but lesser depths exist near both sides of the passage.

Ghubbet Kalweyn (11°09'N., 47°42'E.) is entered between Raas Surud and a position on the coast about 19 miles ESE. The shores of this bight and for a distance of about 9 miles farther E to Raas Kalweyn are low, sandy, and bush-covered a short distance inland.

Caution.—Raas Surud has been reported to lie about 1 mile N of its charted position.

The 40m curve lies from 1.5 to 3.5 miles offshore, the bottom being sand, coral, and shells. A shoal, with depths of less than 5.5m, fringes the coast between the E entrance point of Ghubbet Kalweyn and Raas Kalweyn, and extends up to 1 mile offshore.

10.34 Waqaduriya (11°06'N., 47°46'E.), a village about 4 miles WSW of the E entrance point of Ghubbet Kalweyn, consists of two forts and a large number of huts. This village is inhabited only during the trading season, from October to May.

The village is inconspicuous from seaward, but the village of Geelweyte, about 10 miles to the E, is easily made out. This latter village is also inhabited during the trading season.

Anchorage, sheltered from E winds, can be taken by vessels with local knowledge, in a depth of 18.3m, off Waqddariya.

Care should be taken when approaching this anchorage to avoid a reef which projects from the coast. Vessels with local knowledge, can anchor about 0.5 mile off Geelweyte, in a depth of 12.8m. The coast E of Raas Kalweyn continues low and sandy and is backed inland by a range of rolling hills.

Two of these hills are conspicuous because of the rough appearance of their cliffs. A spur of the mountain range slopes down to Raas Kalweyn. The coast continues low and sandy as far E as Raas Laas Macaan.

Dhaabgo (11°08'N., 48°03'E.) and Qoticad are two inconspicuous villages, in ruins, standing near the coast about 6 and 13 miles E, respectively, of Raas Kalweyn.

Laasqoray (11°10'N., 48°12'E.), about 3 miles NE of Qoti-

cad, consists of two large villages on the coast about 0.5 mile apart. Two easily recognized stone buildings stand in the SW village and appear as forts.

A conspicuous white fort, a square building surmounted by a white tower with a flagstaff close W of it, stands about 0.5 mile SE of the NE village. A conspicuous dark tree has been reported to stand about 183m W of the white fort.

A conspicuous bluff, about 2 miles NE of Laasqoray, appears dark against the background when seen from a long distance to the W. A conspicuous conical hill, visible only on SSE bearings, stands at the end of the ridge ESE of Laasqoray.

Good anchorage, with no shelter from offshore winds, can be taken between 0.4 and 0.7 mile NW of the SW village, in depths of 9.1 to 16.5m, sand or soft sandstone rock.

Anchorage can also be taken, in depths of 9.1 to 11m, about 0.5 mile N of the mosque in the NE village.

10.35 Raas Laas Macaan (11°12'N., 48°14'E.), low and sandy, is marked by numerous huts and several small sand hills. A brackish inlet lies close SW of the point.

Raas Gacaan (11°17'N., 48°22'E.), low and sandy, lies about 9 miles ENE of Raas Laas Macaan and is reported to lie about 0.5 mile NW of its charted position. Several inlets lie near the point and close S is a fresh water lake. The village of Gacaan, marked by a fort, stands on the SW side of Raas Gacaan.

Manna Hills (11°07'N., 48°26'E.), conspicuous and conical, stand about 11 miles SSE of Raas Gacaan. Two hills, about 2 miles S of Gacaan, appear as one conical hill when viewed from W. These hills are good marks.

Drying sand banks front the coast for a distance of about 0.5 mile on each side of the fort at Gacaan. The water inside these banks is very shallow. The depths about 0.5 mile offshore are 22m, over a rocky bottom. It is not advisable to anchor off Gacaan because of the poor holding ground.

The coast between Raas Gacaan and Raas Cadcadde, about 18 miles to the E, is generally low, with an occasional hill.

Some conspicuous ruins and palm trees stand about 6 miles ENE of Gacaan.

Raas Dhoftille (11°19'N., 48°32'E.), low and sandy, stands about 9 miles E of Raas Gacaan. Flat Hill, a conspicuous isolated tableland about 183m high, stands close S of the point and appears as an island when viewed from any distance to the W.

Durduri (11°19'N., 48°36'E.), a village about 5 miles E of Raas Dhoftille, has a fort at each end and a large yellow building in the middle. An inlet, blocked at its entrance by a sand bank, stands near the village.

Anchorage has been taken, in a depth of 19.2m, with the W fort bearing 195°, distant 0.5 mile. The surf in the vicinity is broken and dangerous.

10.36 Ras Cadcadde (11°20'N., 48°40'E.), about 5 miles ENE of Durduri, consists of a rocky cliff, about 12m high, rising gradually inland.

A flat-topped hill, 183m high, stands among a group of hills a short distance inland. It has been reported that Raas Cadcadde is a good radar target at distances of up to 16 miles. The low coast E of Raas Cadcadde is marked by occasional hills. East of the group of hills, near Raas Cadcadde, a black tableland, about 91m high, approaches the coast.

Elayu (Ceelayu) (11°14'N., 48°54'E.), a small village, may easily be identified, as it stands at the E end of the above black tableland. A ridge, about 61m high and marked by numerous cairns, rises beyond Elayu. The village consists of three large towers and a large group of huts.

The W tower is a conspicuous brown fort, with a yellow top, resembling a castle; the middle tower is brown and in ruins; the E tower, which is the smallest, is white and conspicuous. A small square, white mosque stands on a low cliff above the foreshore. A watercourse, which becomes a torrent after rains, lies about 2 miles WNW of Elayu.

Anchorage can be taken, in a depth of 11m, about 0.5 mile offshore, with the W tower at Elayu bearing 168°; E of this position the water appears to be shallower. Anchorage can also be taken, in a depth of 25.6m, sand, with the W tower bearing 207°, distant 1 mile.

In general, anchorage can be taken anywhere near the coast in this vicinity, in convenient depths, sand and rock, but the anchorages are exposed.

Qoow (11°15'N., 48°59'E.), about 5 miles E of Elayu (Ceelayu), is a small town with three conspicuous forts, a few white houses, and a large number of huts. The gap in the coastal range behind the town is a good mark. The coast in this vicinity is backed by a low, broken ridge of hills and intersected by several watercourses, which run only during the rare rainy periods.

Anchorage can be taken off Qoow, in a depth of 22m, sand and rocks, with the middle fort bearing 168°, distant 1.5 miles. Anchorage can also be taken closer in, but care is necessary because the depths shoal rapidly.

10.37 Boosaaso (Bander Cassim) (11°17'N., 49°11'E.) (World Port Index No. 47830), a town standing about 12 miles ENE of Qoow, is easily identified by the broad plain on which it is situated.

Winds—Weather.—During the karif, which occurs from July to early September, a violent SSE wind, locally known as the fora, begins about 1800 and blows all night until the following day, decreasing about 1400. This wind raises a short choppy sea and hinders landing operations.

From 1400 to 1600, moderate N winds blow, raising a long swell which; hinders landing operations even more. During such times, vessels have used two anchors, one of which was hove up when the wind abated.

From May to July, weak northers, accompanied by good weather, usually prevail at Boosaaso.

Depths—Limitations.—The port consists of an inner basin aligned N-S and a main berth. The basin is protected on the N by a 420m long breakwater and on the W side by a new 200m long breakwater.

A dredged channel leads through the coral to the harbor.

The main berth, on the S side of the N breakwater, can accommodate vessels with a maximum length of 153m and a maximum draft of 6.5m. The inner basin has three berths, each with an alongside depth of 3.5m.

Vessels are advised to contact local authorities as less water than charted may exist in this area.

Aspect.—The town consists of a large number of masonry buildings, numerous huts, and a few forts and towers. These forts and towers appear light brown or white from seaward.

The small bed of a stream lies about 0.5 mile W of the town. There is also a conspicuous gap in the coastal range behind the town.

Range lights, in line bearing 138°, leads to a position W of the harbor entrance. Caution is necessary not to confuse this range with the old 148° range; the old range lights have been extinguished, but the structures remain.

A light stands on the head of the N breakwater.

Pilotage.—Pilotage is available. Vessels transit during daylight hours only.

Anchorage.—Open anchorage can be taken off the town, with the best berth about 1.25 miles offshore, in 18.3m. Depths decrease rapidly from this position to the shore. Good anchorage has been also been reported about 0.7 mile offshore, in 12m.

Anchorage can also be obtained, in 8m, about 0.4 mile NW of the light on the head of the N breakwater.

Small craft with local knowledge can anchor, in depths of 2.4 to 3.4m, sand and soft mud, about 0.4 mile NNW of the front range light.

Caution.—A dangerous wreck lies about 1 mile offshore close NE of the approach range line.

Vessels should keep slightly NE of the range line to avoid shoal depths of less than 2m extending NE from the end of the breakwater.

Coral reefs, with depths of less than 2m, extend up to 0.3 mile offshore abreast of the town.

Aids to navigation in the port are unreliable; they may be missing, unlit, or out of position.

10.38 Raas Axmar (11°20'N., 49°18'E.), a small conspicuous rocky promontory about 91m high, stands about 8 miles ENE, of Boosaaso. This promontory appears red when viewed from W. The coast between Raas Axmar and Raas Aantaara, about 16 miles ENE, is low and sandy. Raas Buur Gaaban, about 11 miles ENE of Rass Axmar, is high and rocky and is the only such elevation along this section of coast.

Bacaad (11°21'N., 49°27'E.), a village consisting of a fort and a few huts, stands about 2 miles SW of Raas Buur Gaaban; another village, consisting of a few houses and huts, stands 1.5 miles E of Bacaad. The depths off the coast in this vicinity, with the exception of a 3.7m patch about 0.5 mile NNW of Bacaad, are regular, increasing to depths of 36.6m, sand, about 0.5 to 0.7 mile offshore.

Good anchorage can be taken, in depths of 16.5 to 18.3m, about 2 miles offshore between Bacaad and Raas Buur Gaaban; this anchorage is sheltered only from offshore winds.

The coast between Raas Aantaara, which is high and rocky, and Raas Goragii, about 8 miles E, is sandy and bush-covered. Exposed indifferent anchorage, with good holding ground, can be taken off Raas Aantaara.

10.39 Raas Goragii (11°29'N., 49°42'E.), steep-to, high, and rocky, rises to a range of mountains 1,402 high, which extends ESE. The slopes of these mountains are tree-covered.

A village, with a fort and some huts in it, stands 1.5 miles WSW of the point. The coast between this point and Qandala is steep-to. Raas Goragii has been reported to be a poor radar target at distances up to 27 miles.

Qandala (Candala) (11°28'N., 49°52'E.), about 11 miles E of Raas Goragii, is a local shipping point. It consists of a fort, several houses and huts, and the residency. The fort stands E of a group of trees near the W end of the town which are good marks from the W.

The Northeast Monsoon is weak in the morning but gradually strengthens and attains its maximum intensity in the afternoon. The wind abates at sunset.

The Southwest Monsoon sometimes blows from the W with great force and raises a high sea and swell at the anchorage. At such time, vessels are advised to heave up and proceed to sea.

Anchorage can be taken, in depths of 12.8 to 16.5m, about 1 mile seaward of Qandala, with fairly good holding ground.

The coast from a position close NE of Qandala is fringed by a shoal with depths of less than 5.5m for a distance of 3 miles ENE; this shoal extends up to 0.5 mile offshore.

An inlet, which is used by small local craft during the rainy season at HW, stands 3.5 miles ENE of Qandala. A good mark, in the approach from the W is Qandala; a low white sandhill marked by a conspicuous bush when approaching from the E.

During offshore winds, anchorage can be taken by vessels with local knowledge, in depths of 11 to 18.3m, not less than 1.5 miles off the mouth of the inlet.

Care should be taken to avoid a shoal, with a depth of less than 5.5m, which extends about 1 mile NW from the entrance of this inlet.

Dhurbo (Durbo) (11°37'N., 50°20'E.), which consists of some houses, huts, and a mosque, stands on a low plain at the mouth of a valley, about 29 miles ENE of Qandala. A group of palms, visible from some distance seaward, stands close NE of the village.

10.40 Bandar Murcaayo (11°41'N., 50°28'E.) consists of stone houses, huts, and a fort with a white battlement. The village extends about 0.5 mile along the coast behind a line of sand dunes. A swamp, a watercourse, and three groups of palm trees stand NE of the village.

A considerable trade is carried on around the month of September. Vessels approaching this village should steer for a hummock-shaped mountain about 5 miles SSE of the village until it can be identified.

Care should be taken not to mistake this peak for a similar peak about 18 miles farther WSW, which may be the case if a vessel is W of its dead reckoning.

Another mark in this locality is a precipitous red hill, about 274m high, with a hole in its upper part.

Anchorage can be taken by vessels with local knowledge about 1 mile off Bandar Murcaayo, in depths of 9.1 to 18.3m, sand, good holding ground, with the mosque bearing 151°.

Traffic is often hindered from May to August by the unstable prevailing W winds.

The coast between Bandar Murcaayo and Raas Felug, about 18 miles NE, is low and sandy. Two small villages lie within 1.5 miles NE of Bandar Murcaayo; the NE village can be identified by two high clumps of palm trees close SSW.

Geesaley, about 3 miles farther NE, consists of a few houses, several huts, and a prominent fort and large house in the NE part of the village.

A large group of palm trees in this area contrasts with the barren coast.

Anchorages off these villages are exposed though, the bot-

tom is sand with fairly good holding ground. Depths of over 10m have been reported to exist about 0.5 mile offshore.

Qoor Felug (11°51'N., 50°32'E.), with a depth of 2.4m in the entrance, is mostly swampy and covered with mangroves.

Xabo, a village on the S side of the entrance of Qoor Felug, about 3 miles NNE of Geesaley, consists of some houses and huts and a conspicuous fort.

It has been reported that large vessels can anchor, in a depth of 31m, with the fort at Xabo bearing 144°, distant a little over 0.5 mile. Vessels with local knowledge can anchor, in depths of 11 to 12.8m, with the fort at Xabo bearing 090°, but care should be taken to let out enough chain to avoid dragging into deep water.

Small vessels can obtain excellent anchorage off the entrance of Qoor Felug. A radar conspicuous wreck lies on the coast about 6 miles SW of Raas Felug.

10.41 Raas Felug (Capo Elefante) (11°56'N., 50°38'E.) is an elephant-shaped promontory, 277m high. This conspicuous headland rises steeply from the sea at its N end and has been reported to be visible for about 26 miles.

When viewed either from the E or W, it appears like an island because of the low land. An inconspicuous beacon, 6m high, stands on Raas Felug. A small bay close W of Raas Felug provides shelter from E and S winds. A conspicuous bush stands S of the head of this bay.

Small vessels with local knowledge can anchor, in a depth of 9.1m, with the beacon on Raas Felug bearing 077°, distant 0.5 mile. Heavy seas and swells are raised in the bay when strong SW and NE winds are blowing. It has been reported that Raas Felug is a good radar target at distances up to 23 miles.

Caluula (11°58'N., 50°46'E.), fronted by an open roadstead, carries on a considerable trade with Aden and consists of a few stone houses and numerous huts. Several ruined towers stand in the vicinity and a large cemetery stands in the S part of the town. The residency, with a flagstaff, stands close to the shore in the SW end of the town.

A light is shown from a framework tower, 13m high, standing on the NW corner of the residency.

A very large lagoon, entered close NE of Caluula, is mostly covered with mangroves. Shallow passages cross the lagoon, which can only be used by small craft with local knowledge at HW. The Northeast Monsoon is light in the morning, strengthens toward noon, and diminishes in the afternoon.

In the month of May and the first half of June, it is usually calm. During the Southwest Monsoon, the wind blows from the W and often raises a considerable sea. From mid-August to mid-September, a light variable ENE wind prevails.

Anchorage can be taken, in depths of 11 to 16.5m, about 0.5 mile offshore, with the residency bearing 180° and Raas Caluula bearing 054°.

Anchorage can also be taken, in a depth of 11m, with the residency bearing 142° and Raas Caluula bearing 054°, or in 13.7 to 17.4m, about 0.5 mile offshore, with Raas Caluula on the same bearing and the fort in the NW part of Caluula, bearing about 150°.

Caution.—Less water than charted has been reported (2002) up to 1 mile from the coast between Raas Caluula and a position about 2.5 miles W of Raas Caluula.

10.42 Raas Caluula (11°59'N., 50°47'E.), low and sandy, rises gradually to the high mountains in the interior. The currents in the vicinity of Raas Caluula have been observed to set toward the coast. It has been reported that Raas Caluala is radar conspicuous.

In the month of June, a vessel reported being set to the WSW while heading to the E.

The coast between Raas Caluula and Gwardafuy, about 31 miles ESE, is bordered by a few small projecting points forming small bays.

The coast is low for about the first 8.5 miles; it then becomes steep and mountainous. Depths of less than 18.3m extend up to 3 miles from this section of coast. A 2.5 knot current has been reported to set WNW about 5 miles offshore between Raas Caluula and Gwardafuy.

Bereeda (11°52'N., 51°03'E.), a village about 17 miles ESE of Raas Caluula, is scattered along the shore at the base of the mountains. The Sultan's Residence, a large two-story house with a tower, is the most conspicuous object in the village.

Anchorage can be taken, in a depth of about 8.2m, about 0.5 mile NW of the Sultan's Residence, but the bottom is rocky and irregular. Olog (Olod) and Damo, two small villages, stand within 4 miles W of Gwardafuy.

Good anchorage, sheltered from S winds, can be taken about 0.5 mile N of both villages, in depths of 12.8 to 14.6m, sand, good holding ground. Approaching Olog, steer for the fort in the village in range 186° with the conspicuous knob about 9 miles SW of Raas Caluula. Approaching Damo from the E, steer for Olog and anchor with the fortress at Damo bearing 163°.

Caution.—A depth of 9m was reported to exist about 7 miles NNW of Bereeda.

10.43 Gwardafuy (Raas Caseyr) (Ras Asir) (11°50'N., 51°18'E.), about 238m high, is steep-to, rocky, and high, especially on its N side. It is difficult for a vessel to estimate their distance off because of the grayish appearance of the cape in light fog or mist.

A light is shown from a masonry round tower, 20m high, standing on the summit of this cape. This light structure was reported (1994) to be damaged and unreliable.

Tides—Currents.—During the Southwest Monsoon, the currents set strongly N along the coast S of Gwardafuy, then closely round the cape and set to the W; a short distance from the cape, the currents continue to the N and ENE.

In the month of July, a S current with a velocity of 1 to 2 knots was experienced close inshore from a position about 8 miles S of Gwardafuy to Raas Xaafuun. When the Northeast Monsoon sets in, the current sets S and W with a velocity scarcely exceeding 2 knots. At the change of the monsoon, the currents are variable.

Aspect.—When seen from the N, the cape appears as a regular slope descending to the sea. When viewed from the NE, it can easily be distinguished by the light sand on the summit, the sandy bay to the W, and the lighthouse on its top.

It has been reported that Gwardafuy is a good radar target at distances up to 22 miles.

Caution.—Many wrecks have occurred on the coast S of Gwardafuy, and caution should be exercised when approaching this cape from SE or S, particularly during the Southwest Mon-

soon.

The weather during this period is stormy, the seas high, the currents strong, and the land generally covered by a thick haze.

10.44 The outlines of Gwardafuy and Raas Shannaqiif, about 10 miles SSW, are similar, but the latter is 927m high; a broad comparatively low sandy plain extends between these two points. The light color of this low land makes it difficult for a vessel to estimate its distance offshore, especially at night.

At night and in foggy weather, Raas Shannaqiif is barely visible, despite its imposing rocky mass.

When Gwardafuy cannot be seen, which often happens because of the thicker fog near sea level and the light color of the land, mariners have mistaken Raas Shannaqiif for the cape and have altered course to the NW and run aground.

A gradual change in the color of the water from blue to dark green is usually noticed when a vessel is approaching the land in this vicinity during the day.

During the Southwest Monsoon, the sea is usually smoother N of **Raas Xaafuun** (10°27'N., 51°24'E.) and tends to come from the SE. However, if the land is not seen only soundings should be relied on.

A NW course to round Gwardafuy should not be taken if the soundings do not indicate depths considerably more than 183m. The extensive banks lying about 25 miles NNW of the cape should be left to the N.

10.45 The coast S of Gwardafuy consists of a fertile valley full of large trees, with a stream running through it. Tooxin, a conspicuous village near the entrance of this stream, stands about 6 miles S of Gwardafuy and consists of some buildings, a mosque, and numerous huts.

Raas Shannaqiif (11°41'N., 51°15'E.), round, rocky, and steep-to, appears as a bold rugged headland, especially from the SE. It marks the NE extremity of Jebel Gural and the bluff termination of a tableland over 914m high.

The dark land in the vicinity and to the S of this cape contrasts markedly with the light color of the land between it and Gwardafuy. It has been reported that Raas Shannaqiif is a good radar target at distances up to 25 miles.

A rounded sand hill with a large tract of sand extending N from it stands near the coast. This is a good landmark, being the only white patch in the vicinity. A 95m peak about 7 miles farther S is a good landmark.

Gubed Binna (11°14'N., 51°08'E.) is entered between a position about 18 miles SSW of Raas Shannaqiif and Raas Binna, about 15 miles further S.

In its N part, a bush-covered plain extends about 4 miles inland, then rises to Jebel Gural. The SW part of Gubed Binna is low, sandy, and bush-covered.

10.46 Bargaal (11°17'N., 51°04'E.), a village consisting of several huts and some ruins, stands 10 miles NW of Raas Binna. The steep slope at the mouth of a stream is a good mark for identifying this village.

Anchorage can be taken by vessels with local knowledge, in a depth of 12m, about 0.5 mile off Bargal. This position is exposed and the holding ground is poor.

Several villages, in ruins, stand between Bargaal and Uadi Gondoli.

Vessels with local knowledge can anchor, in a depth of not less than 12.8m, about 5 miles W of Raas Binna, sheltered from S winds. Squalls from the SW are common.

Gubed Binna is exposed to the Northeast Monsoon, which blows intensely from 0900 to 2200, then abates and veers W until the early morning, when it begins blowing lightly from NW.

A dangerous surf rolls onto the beach during the Northeast Monsoon.

Raas Binna (11°08'N., 51°11'E.) consists of a rocky, steep cliff about 154m high. When seen from the N, this point looks like an island. The coast between Raas Binna and Surat Village, about 21 miles S, is low, sandy, and covered with bushes. The village of Handa, about 9 miles farther S, is partially in ruins. The ruins of a large square, stone building stand near the coast at Handa; the dark color of its walls contrasts with the white background. A lagoon stands close to this village.

10.47 Raas Xaafuun (Ras Hafun) (10°27'N., 51°24'E.) is the E extremity of J-Sha Xaafuun (Penisola de Hafun), which rises steeply from the sea in steep cliffs to a height of 210m on its S side. The E end of this peninsula is flat, while its inner part consists of rolling hills intersected by deep ravines.

A light is shown from a white building, 13m high, standing on the summit of this point.

The peninsula is connected to the mainland by a low strip of sand which appears as a breakwater. When viewed from N or S, this peninsula appears like a large detached island. It has been reported that Raas Xaafuun is radar prominent.

Qooriga Hurdiyo (10°30'N., 51°10'E.), on the N side of the isthmus to J-Sha Xaafuun, is a large salt lake available only to boats. The entrance leading into this shallow lake is obstructed by sand and the approach fouled by several dangers. Hordio, a village on the N side of the entrance, consists of some huts and a few stone houses. A small boat harbor lies S of the village.

Gacanka Xaafuun Wag (10°36'N., 51°20'E.), on the N side of J-Sha Xaafuun, is clear of dangers and is sheltered from the Southwest Monsoon. Depths of less than 9.1m extend up to 0.5 mile offshore.

During the Southwest Monsoon, good anchorage can be taken in this bay, in depths of 12.8 to 18.3m, hard sand. The holding ground is indifferent and many vessels have dragged anchors during strong S winds. During the Southwest Monsoon, a heavy swell rounds Raas Xaafuun and violent squalls blow across the promontory.

Off-lying Islands East of Gwardafuy

10.48 Abd al Kuri (12°12'N., 52°12'E.), a hilly island, except for the low middle part, is about 20 miles long. To a vessel some distance N or S, this low part of the island gives the appearance of two islands.

The N coast of the island consists mostly of a sandy beach, with a few rocky points, whereas the S coast consists of steep cliffs. It has been reported that Abd al Kuri is a good radar target at distances up to 23 miles.

Tides—Currents.—During an early survey of this area, the current was found to set ENE at a velocity of 0.5 to 1.5 knots, with numerous tide rips in the vicinity of shoal water. In the

month of December, during the Northeast Monsoon, a current setting NNW at a velocity of 1 knot was experienced between Gwardafuy and Abd al Kuri.

Through the passages among the islands W of Suqutra, the tidal currents set N during the flood and S during the ebb, at a reported velocity of 1 to 2.5 knots, but they are much influenced by the currents caused by the prevailing monsoon.

Caution.—Caution should be observed when passing W of Abd al Kuri, especially at night, because it is difficult to estimate the distance off the W end of the island, the high land being some distance inland. To ensure passing not less than 2 miles off, vessels should keep in depths of greater than 92m.

10.49 Ras Khaysat an Nawm (12°14'N., 52°04'E.), the W extremity of the island, consists of two sharp rocky points about 0.5 mile apart. A rocky reef, with a least depth of 3.6m, extends about 1 mile W from the N point.

The coast between Ras Khaysat an Nawm and a rocky point about 7 miles E, is irregular, but up to 6 miles farther E, it consists of small rocky points, with sandy beaches in between.

A sunken rock lies close offshore, about 2 miles E of the above rocky point.

A shoal, with depths of less than 5.5m, extends about 0.5 mile N from the coast close to this sunken rock. In the bight between Ras Anjarah (Ras Anjara), the NE extremity of the island, and a point about 7 miles to the W, the coast is low and sandy, with a few huts. Some sunken rocks are reported to lie close offshore in this vicinity. Ras Anjarah is rocky and marked by a sand hill.

Anchorage off the N side of Abd al Kuri is reported to be indifferent but in the month of August, anchorage has been taken, in a depth of 16.5m, sand, good holding ground, with the small rocky point about 7 miles E of Ras Khaysat an Nawm bearing 136°.

Between Ras Khaysat an Nawm and the W entrance of Khalij Bandar Salih, about 7 miles ESE, the coast is steep-to. A bluff stands about 3 miles ESE of the W end of the island; about 3 miles farther ESE is a rocky islet, with a small foul bay.

10.50 Khalij Bandar Salih (12°10'N., 52°13'E.), backed to the N by the narrowest part of the island, was reported to be fouled in its W part.

During the Northeast Monsoon, good anchorage can be taken, in depths of 11 to 18.3m, coral, in Khalij Bandar Salih, about 0.2 to 0.5 mile offshore. Between the E entrance of Khalij Bandar Salih and the SE extremity of the island, the coast is bordered by high cliffs and is steep-to.

The SE extremity of the island is low and rocky, with a mountain range rising to the W from it. A bay with a sandy beach lies between this point and Ras Anjarah. Two above-water rocks lie close offshore, about 0.5 mile SW of Ras Anjarah.

Kaal Firawn (12°26'N., 52°08'E.), about 13 miles NNE of Ras Khaysat an Nawm, consists of two rocky steep-to islets separated by a narrow foul channel. These islets stand on the N end of a bank with depths of 12.8 to 36.6m.

The NE and largest islet has three peaks, with the highest rising to an elevation of 856m; the SW islet has a peak of similar height and a smaller one. All of these peaks are guano-covered. Both of these islets are difficult to make out at night.

A 13.7m patch lies about 1 mile NE of the E extremity of Kaal Firawn.

Coral Bank (12°17'N., 51°56'E.), with a least depth of 44m, lies about 8 miles WNW of Ras Khaysat an Nawm. A 5.5m patch lies 10.5 miles NW of the same point.

Bacchus Bank (12°14'N., 52°26'E.), with a least depth of 5m, lies about 2 miles NE of Ras Anjarah. A large ripple can be seen on this bank when the wind is in opposition to the currents.

Al Ikhwan

10.51 Al Ikhwan (The Brothers) (12°08'N., 53°10'E.) consists of Jazirat Samhah and Jazirat Darzah, two islands separated by a channel about 9 miles wide.

Jazirat Samhah (12°09'N., 53°03'E.) rises to a small hill near its W end, and to a table mountain, 779m high, which covers nearly half of the island.

The island is bordered by rocky coasts, with precipitous cliffs on its S side. The N extremity of the table mountain is a well-defined bluff.

A rock, with a depth of less than 1.8m, lies on the coastal reef which extends about 0.5 mile W from the W extremity of the island; two rocky islets stand about 0.5 mile off the SE side of the island. A small bank, with a depth of about 23m, lies about 2 miles NE of the E end of the island.

A depth of 16.5m lies about 4 miles W of the W end of the island. A 11m depth was reported to lie about 15 miles WSW of the W end of Jazirat Samhah; a 20m patch was reported to lie about 2 miles farther W.

It has been reported that the W end of Samhah and the rock close offshore lie about 1 mile WNW of their charted positions. A depth of 9m is reported to lie 1.5 miles SE of Jazirat Samhah. A dangerous rock lies about 2.3 miles ENE of the E side of Jazirat Samhah.

Jazirat Darzah (12°07'N., 53°17'E.) rises vertically from the sea to a flat table-topped summit, 392m high. The N extremity of the island extends about 0.5 mile from the base of this mountain.

A depth of 11m is reported to lie 1 mile SW of the W end of Jazirat Darzah. A depth of 31m is reported to lie 2 miles S of the W end of Jazirat Darzah.

It has been reported that Jazirat Samhah and Jazirat Darzah are good radar targets at distances up to 25 and 24 miles, respectively.

Suqutra

10.52 Suqutra (12°34'N., 53°59'E.), about 130 miles ENE of Gwardafuy, is part of Yemen. Although this island lies near the track of vessels entering or leaving the Gulf of Aden, it is seldom visited because it is exposed to both monsoons. It also has no harbors in which vessels can anchor with safety, and the character of the natives in the past has been reported to be belligerent. Vessels are advised to remain well clear of this island.

With the exception of a few headlands from which reefs project, the coasts of Suqutra are bold, with moderate depths in places some distance offshore.

The S coast is almost an unbroken line but is seldom visited. The N and W coasts are broken by a series of small bays which provide anchorage according to the season.

Streams of fresh water usually discharge at the heads of these bays.

During the Northeast Monsoon, the N side of the island is considered safe from about February, when the monsoon is nearing its end.

Over a broad area, hills rise abruptly in vertical cliffs, several hundred feet high while at other places plains extend up to 5 miles inland. On the N side, the plains are generally found at the sites of villages. Nojid (Nawgeed), a plain which is covered for miles by sand dunes, extends almost the entire length of the island on its S side.

The interior of the island is broad, rolling and intersected by the stone plateaus, about 300m high to the W, S, and E, of which are a nucleus of granite peaks, over 1,200m high. The latter are usually obscured by clouds, but when the weather is clear their appearance is broken and picturesque. All of this hilly region is deeply intersected by ravines and valleys, through which water flows during the rainy seasons, but the majority of which are empty during the dry season.

Few streams reach the coast during the latter season. The SW side of the island is arid and barren, but much of the remainder is comparatively fertile, being well-watered by the monsoon rains of July and December.

It has been reported that Suqutra is a good radar target at distances up to 24 miles.

Winds—Weather.—The climate on Suqutra, compared with the nearly African and Arabian coasts, is temperate and cool, caused by both monsoons blowing over a large expanse of water. The climate is very healthy in the hills, but fever is prevalent on the plains, especially at the change of the monsoons.

From November to January, NNE winds prevail, blowing in violent squalls for several days at a time.

The fine weather season prevails from February to May; at this time the anchorages on the N coast are considered safe.

During June, July, and August, the Southwest Monsoon, then at its height, is said to blow constantly in hard and violent squalls on the N coast while on the S coast, it blows more steady and less violent, but is accompanied by a heavy sea and surf.

In September, October, and the first part of November, light land and sea breezes prevail, which become more steady from the N toward the latter part of November.

Tides—Currents.—The currents close around Suqutra are influenced by the winds and tidal currents, and generally set with the wind after it has blown hard from the same direction for some time. Many years ago in December, with the Northeast Monsoon well-established, a current setting NW, at a velocity of 2.5 knots, was experienced off the S coast of the island between the W extremity and a position about 52 miles to the E.

The tidal currents are very irregular and depend greatly on the strength and direction of the wind; sometimes they set in one direction for 16 hours, while at other times they set in one direction only for 6 hours. During the flood, the tidal currents set W off the S side of the island and E off the N side, while during the ebb they set in the opposite direction. The E current off the S side of the island sets at a velocity of 1 knot, depending greatly, however, on the wind.

10.53 Ras Shuab (12°32'N., 53°18'E.), the W extremity of Suqutra, is bold and rises to Jabal Shaab, 632m high, about 3 miles to the E. A reef extends about 0.2 mile from the NW side of Ras Shuab.

Sabuniyah (12°38'N., 53°09'E.), about 11 miles NW of Ras Shuab, is a white-colored islet, 69m high, which rises to three granite peaks. When seen from a distance it resembles two vessels under sail; when seen from the N, it appears wedge-shaped. The passage between this islet and Suqutra is deep and clear of dangers.

Bindar di-Sab (Ghubbat Shuah) (12°35'N., 53°22'E.) is entered between Ras Shuab and Rhiy di-Bidoh, about 9 miles NE. There are no known dangers in Bindar di-Sab and the bottom is mostly sand or rock. A salt water lagoon, with mangroves on its banks, stands at the head of this bay, and is separated from the sea by a sand bank.

Caution is necessary when making Ras Shuab because many years ago in December, during the Northeast Monsoon, it was obscured by heavy rain squalls at sunset.

Ghubbat Shuah is quite exposed to the Southwest Monsoon, but during the Northeast Monsoon, it provides good anchorage with smooth water, although at times strong squalls are experienced.

During the latter season, the best anchorage is in a depth of 18.3m, white sand, about 0.5 mile offshore, with Ras Shuab bearing 241° and Rhiy di-Bidoh bearing 010°. This anchorage lies off some mangrove trees N of the salt water lagoon.

Caution.—A dangerous wreck lies in an approximate position about 4 miles ENE of Ras Shuab.

10.54 Rhiy di-Bidoh (Ras Baduwa) (12°43'N., 53°30'E.) is a steep-to bluff, 92m high.

Ghubbat Qalansiyah (12°41'N., 53°28'E.) is entered between a point about 3 miles ENE of Rhiy di-Bidoh and Ras Qalansiyah, about 4 miles farther ENE, and provides shelter during the Northeast Monsoon.

Ras Qalansiyah rises to four small granite peaks; these peaks, together with the hills in the vicinity, are good marks for identifying the cape. A village with a mosque stands in a grove of trees, about 0.5 mile S of Ras Qalansiyah.

The depths in Ghubbat Qalansiyah are irregular and there are overfalls.

A rocky reef, almost all of which dries, fringes the shore of the bay and extends up to 0.2 mile offshore.

Large vessels can anchor, in depths of 12.8 to 18.3m, with the mosque in the village bearing 135°, distant about 1 mile. Small vessels with local knowledge can anchor, in a depth of 7.3m, about 0.5 mile offshore, with the mosque bearing 124° and the N granite peak inland of Ras Qalansiyah bearing 062°.

The coast between Ras Qalansiyah and a point about 3 miles ENE forms a bight which is foul over most of its area. From the E entrance of the above bight to Rhiy di-Bashorah (Ras Bashuri), about 2 miles farther E, the rocky coast is backed by high mountains which rise steeply from the sea.

A pyramidal rock, about 137m high, stands close off Rhiy di-Bashorah and is connected to it by a narrow neck of land.

10.55 Ghubbat Qurmah (12°40'N., 53°48'E.) lies off the low sandy coast between Rhiy di-Qadamah (Ras Kadarma), about 5 miles E of Rhiy di-Bashorah (Ras Bashuri), and Rhiy di-Qormih, about 14 miles farther ESE. Rhiy di-Qadamah is

low, with the extremity of a high bluff close back of it.

Rhiy di-Qadamah is low, sandy, and fringed by a reef extending about 0.2 mile offshore. The shore of this bay is backed by a mountain chain about 6 miles inland, with a pass near the middle and another pass S of Rhiy di-Qadamah.

A deep salt water lagoon, extending about 0.5 mile inland and bounded by fairly high cliffs, is located about 6 miles WSW of Rhiy di-Qadamah; the entrance of this lagoon is covered.

During the Northeast Monsoon, a considerable swell makes up in the W part of the bay, while during the Southwest Monsoon, the heavy swell is felt when the wind is well to the W. The best anchorage lies about 0.6 to 0.7 mile offshore, in depths of 9.1 to 11m, sand and coral, with Rhiy di-Qadamah bearing about 055°, distant about 2 miles.

The coast between Rhiy di-Qadamah and Ras Shuab, about 2 miles ENE, is fringed by a reef which extends about 0.5 mile offshore. This fringing reef continues ESE for a distance of about 3 miles to the bight between Ras Shuab and Rhiy di-Hebaq, about 4 miles ESE. There are three villages along the coast in this bight; a mosque stands in the W village. During the Southwest Monsoon, anchorage is provided in this bight.

Ghubbah di-Hadiboh (Tamrida Bay) (12°40'N., 54°01'E.) is entered between Rhiy di-Hebaq, bold, vertical and rocky, and Rhiy di-Hawlaf (Ras Hulaf), about 8 miles ENE. Hadibu (Tamrida), the capital of Suqutra, stands 2.5 miles E of Rhiy di-Hebaq near a river and is surrounded by groves.

Three villages stand within 3 miles E of Hadibu; a fourth stands 1 mile S of Rhiy di-Hebaq. Two white towers and a mosque stand in the latter village.

The high craggy peaks of the mountain range behind Hadibu are useful in identifying it from seaward. Jabal Haggier, the summit of this range, rises about 3 miles S of the town.

A sand hill, about 3 miles ENE of Hadibu, appears as a white cliff sloping to the S when seen from the NW at a distance of 10 to 12 miles. This sand hill is prominent and twin peaked, with a sharp and noticeable dividing line between them. The E half is composed of yellow sand; the W half consists of brown rock.

10.56 Rhiy di-Hawlaf (Ras Hulaf) (12°42'N., 54°06'E.) is the NW extremity of a low rounded projection which consists mostly of rolling sand hills covered with bushes. This projection rises gradually inland, its coasts consisting of small rocky points with sandy beaches between them. These sand hills and Rhiy di-Hawlaf (Ras Hulaf) are good marks for identifying Hadibu when the high mountain peaks are obscured.

Hadibu (12°39'N., 54°01'E.) consists of a number of white houses around the residence of the Sultan, a few mosques, and a fort. These buildings, the white tower of the mosque on the W edge of the town, and the palm plantation about 0.5 mile E of the town, are good landmarks.

During the Southwest Monsoon, the anchorage is exposed to strong squalls from the mountains. A heavy swell sets in when the wind is well to the W, making good ground tackle necessary.

The bay is particularly unsafe from November to January, when heavy squalls from the N are frequent. February to May is considered the best season. The holding ground in the bay, of sand and stone, has patches of mud.

A good berth, in a depth of 16.5m, can be taken with Ras Hulaf bearing 067° and the large square house in the town bearing about 175°.

A vessel reported anchoring, in a depth of 9.1m, with the mosque at Hadiboh bearing 180°, distant 0.5 mile.

A vessel reported the water in the approach to Hadiboh remarkably clear; when at anchor, in a depth of 12.8m, every detail of the bottom was clearly visible.

Between a point about 3 miles ESE of Rhiy di-Hawlaf (Ras Hulaf) and Rhiy di-Hamri (Ras Dehammeri), about 4 miles farther E, the coast is indented by a small bay, with Bindar Dibni (Bandar Debeni) in its E part. A small mosque, in ruins, or a tomb, stands on the W entrance point of this bay.

A sand hill is reported to stand on the coast, about midway along the shore of this bay. An inlet, closed during the dry season, stands 0.5 mile W of this sand hill. Some trees stand on the banks of a stream at the S end of this inlet.

10.57 Bindar Dibni (Bandar Debeni) (12°41'N., 54°10'E.), the small bay on the W side of Rhiy di-Hamri (Ras Dehammeri), is clear of dangers, except for a rocky spit extending W from the cape.

Rhiy di-Hamri (Ras Dehammeri) (12°40'N., 54°12'E.) is the N extremity of a narrow peninsula extending N from the coast. Two reddish hills, the N hill of the two rising to a height of 40m, stand on this peninsula and are useful in identifying it.

A steep-to rock, with a depth of less than 1.8m, lies close N of the cape; a rocky spit, with a depth of 4.6m, extends about 0.2 mile W from the cape.

Good anchorage can be taken by vessels with local knowledge anywhere near the shore in the W part of the bay. This is the most sheltered anchorage off Suqutra during the Southwest Monsoon.

A good berth is in 12.8 to 16.5m, about 0.5 mile offshore, with the sand hill bearing 180°. Bindar Dibni provides shelter for small vessels, in depths of 5.5 to 6.4m, coral and rock, with Rhiy di-Hamri bearing about 067°. This position lies SW of the rocky spit extending W from the cape.

10.58 Between Rhiy di-Hamri and **Rhiy di-Hamaderoh** (Ras Hammadara) (12°38'N., 54°13'E.), about 5 miles ESE, rocky points with sandy bays between, extend from the coast at intervals. The latter point is low and rocky.

The bay close E of Rhiy di-Hamri provides sheltered anchorage, during the Southwest Monsoon, in depths of 11 to 18m, about 0.2 to 0.5 mile offshore. An inlet, which almost dries, stands about midway between the above two points and can be identified by some trees on its banks. A fairly steep-to patch of rocks, which almost dries, lie about 0.5 mile NE of Rhiy di-Hamaderoh.

The channel between these rocks and the coastal reef is about 0.1 mile wide, with depths of 5.5 to 9.1m. The coast between Rhiy di-Hamaderoh and Rhiy di-Didum (Ras Daydum), about 8 miles to the E, is marked by occasional rocky points with sandy beaches in between.

There are some date groves along this section of coast. High land, rising to elevations of 305 to 366m, back this coast about 2 miles inland.

With the exception of the rocks off Rhiy di-Hamaderoh, no known dangers exist off this coast. It is not advisable to ap-

proach this coast during the Northeast Monsoon.

10.59 Rhiy di-Didum (Ras Daydum) (12°35'N., 54°25'E.), rocky and about 76m high, appears to mark the E boundary of the fertile land, the territory E of it having only a few trees.

Bindar Fikhah (Bandar Faka) (12°33'N., 54°29'E.) is entered between Rhiy di-Didum and a point about 8 miles ESE. The low sandy shores of this bay are backed by fairly high mountains about 0.5 mile inland. Two double sand hills stand about midway along the shore of this bay and are topped by a few trees. A reef extends about 0.5 mile N from the E entrance point of Bindar Fikhah.

Temporary anchorage can be taken in the E part of Bindar Fikhah, sheltered from E winds by the reef mentioned above.

The best anchorage is in depths of 16.5 to 22m, about 0.5 mile offshore, with the outer breaker of the reef mentioned above bearing 045° and the point about 2 miles E of Rhiy di-Didum bearing 287°.

Caution is necessary when rounding this reef because, unless the wind is fresh, the outer breaker, with a depth of 9.1m close to it, is not always visible.

Rhiy di-Momi (Ras Momi) (12°32'N., 54°29'E.), about 6 miles ESE of Rhiy di-Didum, is a sharp high bluff about 274m high and is the E extremity of the mountain range which transverses the island.

In clear weather, this bluff is visible for a considerable distance when the low land near Rhiy di-Irisal (Ras Radressa) is not. The land between Rhiy di-Momi and Rhiy di-Irisal, about 4 miles E, slopes gradually to several small hills about 55 to 61m high.

Rhiy di-Irisal (Ras Radressa) (12°35'N., 54°29'E.), the E end of Suqutra, consists of two rocky projections, about 0.5 mile apart, fringed by a reef. This reef extends about 0.3 mile NNE from its N extremity and about 0.2 mile SE from its S extremity. There are strong tide rips over the former part.

A 9.1m patch and a reef, which dries in places, lie 0.5 mile E and 0.6 mile SE, respectively, of the S end of Rhiy di-Irisal. A heavy sea usually breaks over the reef.

A conspicuous wreck is charted about 2 miles SE of Rhiy di-Irisal.

It has been reported that Rhiy di-Irisal is a good radar target at distances up to 22 miles.

Caution.—The low land at Rhiy di-Irisal is often obscured by haze during the Southwest Monsoon and sometimes by heavy rain squalls during the Northeast Monsoon. This, together with the fact that soundings give no indication of the approach to the cape, makes Rhiy di-Irisal dangerous to approach.

10.60 The S coast of Suqutra is steep, with the depths decreasing gradually toward the shore. No known off-lying dangers exist but overfalls are found in places.

Anchorage can be taken anywhere about 1 mile offshore, in depths of 16.5 to 22m, sand and coral.

Ghubbah di-Net (Ghubbat Nayt) (12°25'N., 53°27'E.), an open bay about 10 miles SE of Ras Shuab, provides anchorage off a village on the S shore during the Northeast Monsoon. A small sand hill stands close N of the NW entrance point of this bay.

The coast between Ghubbah di-Net and Rhiy di-Qatanhin, about 7 miles SE, is rocky and steep, with several small points and bays. Depths of 3.7 to 11m lie within a few meters off this coast.

Rhiy di-Qatanhin (Ras Qatanan) (12°21'N., 53°32'E.), a vertical bluff, 511m high, appears the same when viewed from the E or W.

Jabal Kuireh (12°21'N., 53°32'E.), a flat-topped limestone range, extends about 5 miles E from Rhiy di-Qatanhin.

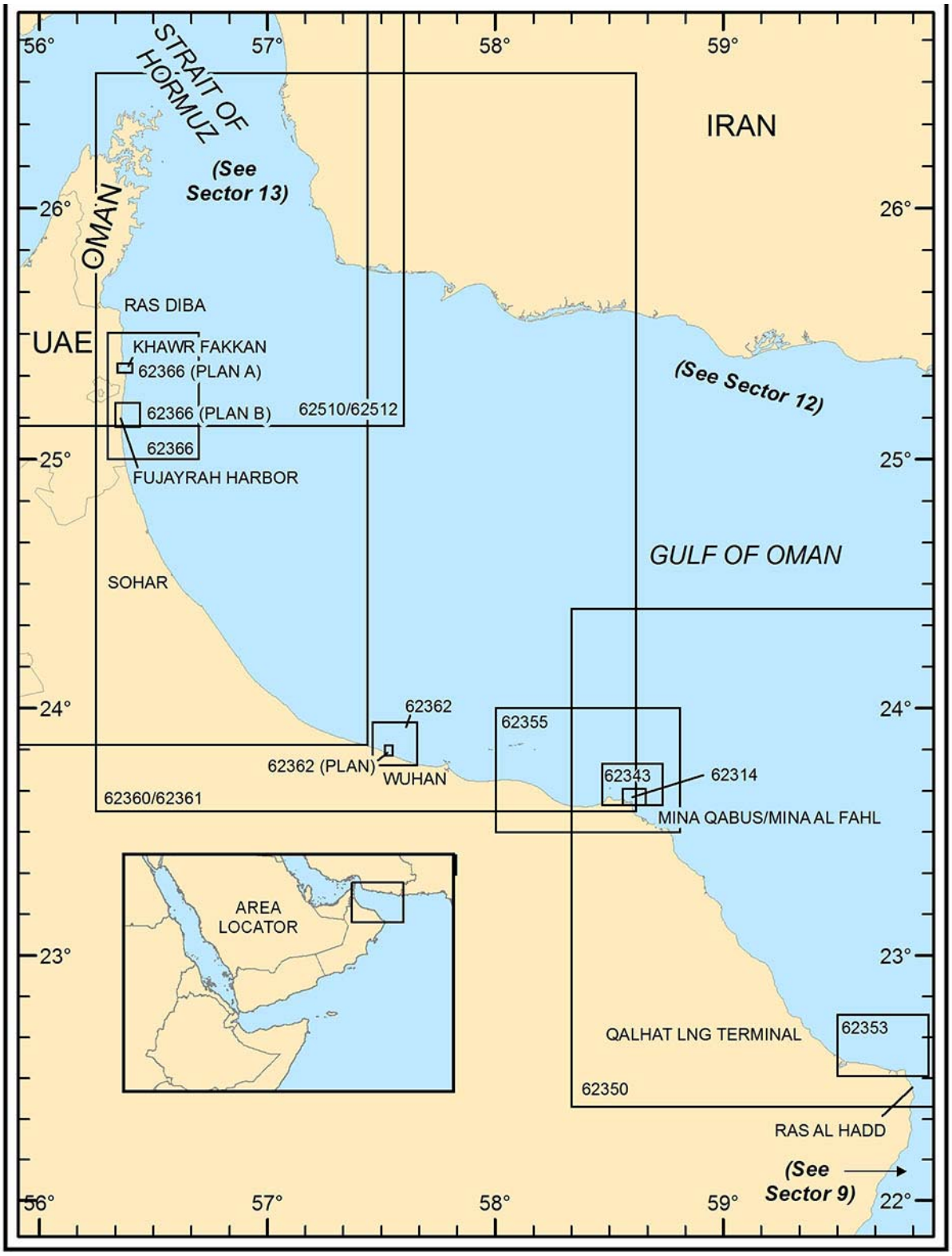
This same range, with different names, parallels the coast a short distance inland for the remaining length of the island. It rises like a wall and is separated in places by a few mountain passes. Nojid (Nawjeed) lies between these mountains and the coast.

10.61 Ras Sharhin (Ras Falanj) (12°29'N., 54°27'E.), about 31 miles E of Rhiy di-Qatanhin, appears as a bluff when viewed from any distance to the W; however, on closer approach, it appears as a low point extending SE with a bay on each side.

A steep-to reef, partly above water, extends about 0.2 mile SE from the cape.

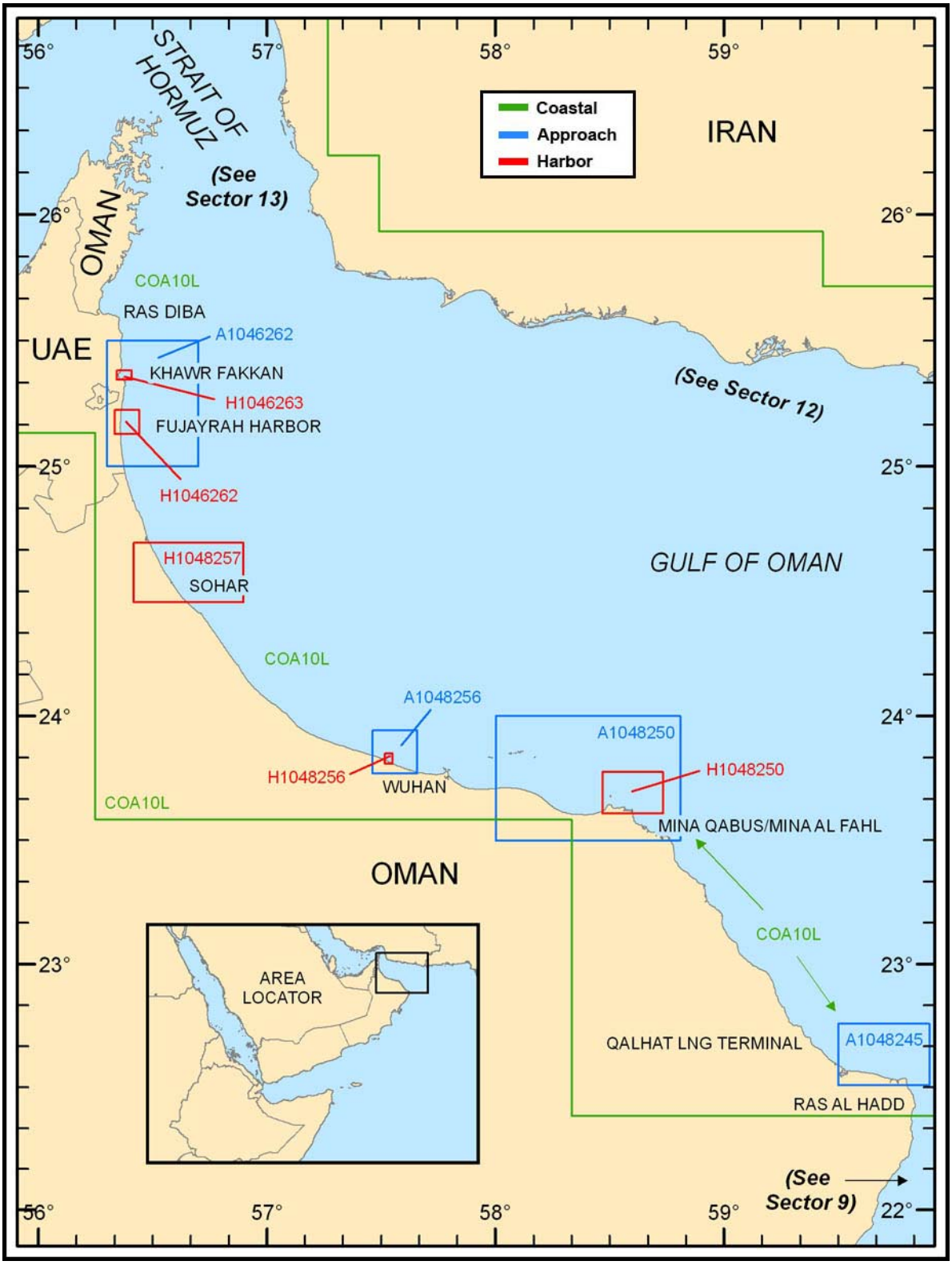
A bluff, 458m high, stands about 2 miles W of Ras Sharhin, and continues NE as high land to Rhiy di-Momi.

Bindar di-Irisal (Bandar Arsal) (12°31'N., 54°29'E.), the bay between Ras Sharhin and Rhiy di-Irisal, provides temporary anchorage in smooth water during the Northeast Monsoon. The best berth lies in the middle of the bay, in a depth of 16.5m.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **11** — CHART INFORMATION



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SECTOR 11 — DNC LIBRARY INFORMATION

SECTOR 11

OMAN—NORTHEAST COAST—RAS AL HADD TO RAS DIBA

Plan.—This sector describes the NE coast of Oman, on the SW side of the Gulf of Oman, between Ras al Hadd and Ras Diba. The sequence is NW from Ras al Hadd.

General Remarks

11.1 Winds—Weather.—In winter, over the Gulf of Oman, the winds are mainly N, with the prevailing direction NW. Calms are more frequent than in the Persian Gulf; the average wind speed is 7 to 11 knots.

Strong squall winds from the E, accompanied by rain are frequent. In spring, the winds are variable, but in general there is a decrease in the NW winds and an increase in the SW winds until by May SW winds predominate.

The average wind speed is 6 to 10 knots. In June, NW and N winds are still comparatively frequent; however, in July the prevailing winds are from the SE. On the N shores of the Gulf of Oman the early morning winds are from the E. They veer during the day, and by night they blow between SE to SW.

In June, before the Southwest Monsoon becomes fully established over the Arabian Sea, tropical cyclones occasionally form on the Arabian Sea, on the N boundary of the advancing SW winds. These storms have been known to reach the Gulf of Oman giving rise to heavy gales.

In September and October, the frequency of SE winds in the Gulf of Oman gradually decreases, and that of the NW winds increases.

The average wind speed is between 2 to 6 knots. On the coast, the winds are for the most part light and variable, with frequent calms in the early morning.

In the Persian Gulf and the Strait of Hormuz, the hottest months of the year are July and August; the warmest month in the Gulf of Oman is in June, prior to the arrival of the Southwest Monsoon. Over the whole region, January is the coolest month.

Bad visibility in the Persian Gulf and the Gulf of Oman may be caused by early morning fog, salt haze, or dust. Of these, dust is by far the most common. Bad visibility caused by dust haze is more frequent on the S coast of Iran than in the Persian Gulf, and in the latter occurs more often on the Arabian side.

Dust haze may occur in all seasons but is less frequent during and immediately after the winter rains. During the summer months, when the rains cease and the temperature rises, the ground dries up and fine dust is carried into the atmosphere. The amount of dust suspended in the air is increased by vigorous convection and produces a general haziness which diminishes the visibility.

Dust haze occurs most often from May to August. Such haze usually reduces the visibility to between 2 to 6 miles, and the visibility may drop to 0.5 mile. This often occurs on the day following a severe dust storm, albeit the wind at the time may be insufficient to raise dust.

Dust storms and sandstorms occur in all parts and seasons in the Persian Gulf and the Gulf of Oman.

In winter, dust storms are associated chiefly with the passage of W depressions, and in summer with strong shamal winds.

Dust storms are most frequent during the months of June and July. Fog occurs at times near the shores of the Persian Gulf and may be dense. It is present only in the early morning and never lasts more than a few hours.

Tides—Currents.—In the Gulf of Oman, current directions are variable, and velocities may attain up to 1.5 knots; however, they usually do not exceed 1 knot.

In February and March, a branch of the Sonal Current off Ras Al Hadd turns and sets NW along the gulf, turning in the W portion of the gulf, and setting E along the N shore of the gulf.

From April through October, the coastal current from the Arabian Sea appears to extend to the N shore of the gulf where it sets W. The current then turns in the W portion of the gulf and sets SE along the S shore of the gulf.

In November the current appears to set throughout the gulf. In December and January the W current in the Arabian Sea continues along the N shore of the gulf, turns into the W portion of the gulf, and sets SE along the S shore.

Through the Strait of Hormuz, there is a distinct inward flow from the Gulf of Oman during the Southwest Monsoon, and a slight outward flow during the remainder of the year. During this latter period, some water continues to flow into the Persian Gulf; however, these currents tend to hug the Iranian side of the straits.

Tidal currents in the Gulf of Oman are the strongest in its N portion. The flood generally sets NNW, with rates up to 2 knots; the ebb sets SSE, with rates up to 1.8 knots. Along the SW shore, tidal currents are generally negligible.

In the Strait of Hormuz, tidal currents are strong, attaining rates up to 4.8 knots.

Depths—Limitations.—Depths in the Gulf of Oman are generally considerable off the high sections of the coast; along the low-lying portions of the shoreline the depths are not as great. The 200m curve lies 1 mile offshore opposite Ras al Hadd, 4 miles offshore at Masqat, 23 miles offshore at Qalat Kalbah, and 43 miles offshore at Ras Diba. Except for Jazirat al Fahl and Jazair Daymaniyat, the coastal approaches are clear.

In a few places, between As Sib and Qalat Kalbah, shoals lie up to 2 miles offshore but within the 20m curve.

Aspect.—Between Ras al Hadd and Ras al Hamra, 98 miles to the NW, the coast consists of sandy plains alternating with cliffed promontories and backed by the rugged foothills of the Oman Mountains. The sea approaches are very deep and free of all obstructions. In general the coast is steep-to and rocky.

The Eastern Hajar Range closely parallels the coastline; in places these mountains rise to over 2,134m within 20 miles of the shore. High rocky cliffs face the sea throughout most of this sector.

From Ras al Hamra NW for 175 miles to Khawar Fakkan, the low sandy coast forms the E edge of a wide region called

Sahil al Batinah which lies between the steep Eastern Hajar Range and the sea.

The interior is arid and mountainous. Except for the Jazair Daymaniyat, which lie 8 miles offshore some 25 miles WNW of Ras al Hamra, the approaches are clear.

A shoreline of bold, rocky cliffs, with deep water close inshore, extends from Khawr Fakkan N for 17 miles to Ras Diba.

Khawr Fakkan lies between a hilly promontory and a rocky point, 3 miles to the N. From Khawr Fakkan, the low sandy coast continues N.

Regulations.—The government of the United Arab Emirates has decided to increase its air and sea surveillance with respect to sea surface oil pollution in light of the recent major international oil spills.

All vessels traversing, or at anchor within, the territorial waters will be obliged to report the sighting of any sea surface oil pollution. Should oil be sighted surrounding any vessel and such vessel has failed to report the presence of the same, the vessel concerned shall be liable to a fine.

Anchorage.—Anchoring within the territorial waters of the State of Sharjah between 25°00'N and 25°06'N, and between 25°19.50'N and 25°24.75'N, is limited to vessels proceeding to the port of Khawr Fakkan or to cargo vessels requiring certain facilities available from the port. Large tankers are not permitted to anchor within 10 miles of the coast.

An anchorage, specially designated for vessels wishing to anchor in the territorial waters of Oman S of 24°00'N, and wishing to perform repairs or waiting for orders, lies in the waters N of Jazirat al Fahl.

Caution.—Numerous oil and gas exploration rigs, with associated pipelines and structures, may be encountered in the waters described in this sector.

Ras al Hadd to Masqat

11.2 Ras al Hadd (22°33'N., 59°48'E.), the S entrance point of the Gulf of Oman, is a low sandy point which is difficult to distinguish from the adjacent coast lying S and W of the cape. A light, equipped with a racon, is shown from a prominent framework tower, 38m high, standing on the E side of cape.

The N side of Ras al Hadd is steep-to but S of the point depths of less than 20m extend up to about 2 miles offshore.

The strong and variable currents off Ras al Hadd are greatly influenced by the prevailing winds.

Sometimes, generally toward the end of the Southwest Monsoon, while a current sets N along the coast S of Ras al Hadd another current sets SE along the coast between Ras al Hadd and Ras Abu Dawud, about 68 miles to the NW.

These two currents appear to combine and turn NE off Ras al Hadd. This current sets NE at a rate of about 2 knots. It is further augmented by the E tidal current from the Gulf of Oman.

The coast of Oman from Ras al Hadd is generally steep-to. Between the cape and Ras Abu Dawud, the 200m curve lies from 1 to 4 miles offshore.

From Ras Abu Dawud to the village of Yiti, 19 miles to the NNW, the curve lies up to 7 miles offshore and in the vicinity of Masqat l.5 to 3.5 miles offshore. The few dangers, as well as some of the islands, lie close inshore.

Anchorage is available, in depths of 14 to 18m, coral, 0.5 to 0.7 mile due E of Al Hadd village. The water shoals rapidly from 18m to 9m and the bottom is distinctly visible. The anchorage is open to the sea.

Caution.—An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, lies in the waters off Ras al Hadd. The area lying between the W separation limit and the coast has been designated as an Inshore Traffic Zone.

11.3 Between Ras al Hadd and Ras ash Shajar, 40 miles to the NW, the coast is generally steep-to and free of off-lying dangers. Low cliffs and low broken hills comprise the shoreline which is broken by several small inlets. The Jabal Bani Jabir range, with heights up to about 1,371m, backs the coast. Farther inland the mountains attain heights of 1,981m.

Khawr al Hajar (22°32'N., 59°46'E.) is entered between Ras al Hayyah and Ras al Hammah. The entrance is only about 0.1 mile wide but depths shoal rapidly to less than 3m; the greater part of the inlet dries.

Tidal currents near the entrance of Khawr al Hajar set E and W. The E current is weak, but the W current attains a rate of 1.5 knots. Fishing boats shelter here, but the bay is exposed to strong N winds.

Khawr al Jaramah (22°32'N., 59°44'E.) lies 2 miles W of Khawr al Hajar. A narrow tortuous channel, 1 mile long and from 91 to 274m wide, leads between cliffs 18.3m high into the inlet.

Inside the entrance, Khawr al Jaramah opens up, with surrounding cliffs 30 to 60m high and a low sandy beach along the SW shore of the bay. Gusts of wind are prevalent in the channel.

About 0.5 mile inside the entrance, the channel is narrowed to 55m by a shoal extending from the W shore. There is a least depth of 6.4m in the channel but only about 2.1m over the shoal. Tidal currents set through the entrance channel at rates of up to 2 knots.

Directions.—Local vessels, with drafts of less than 4.6m, use Khawr al Jaramah as a harbor of refuge. It is advisable to enter the inlet on the first of the ebb tidal current; at other times the eddies at the bends of the channel make steering very difficult. Gusts of wind are prevalent in the channel.

A conspicuous flat-topped hill on the SW side of Khawr al Jaramah bearing 176° leads to the entrance. This hill should not be confused with the pinnacle-shaped hill, with a flat summit, located a few miles farther to the W.

After entering the channel, keep close to the E shore until past the shoal extending from the W shore. Then proceed in mid-channel, passing NE of the islet at the S end of the channel, into the anchorage area S of the islet.

Khawr al Jaramah should not be entered unless the height of the tide permits the vessel to keep in mid-channel through the entire length of the passage.

Anchorage is available, in 5.5 to 7.3m, in an area about 1 mile long and 0.2 mile wide across the N part of the inlet.

During the Southwest Monsoon, anchorage can be taken, in 21.9m, 0.5 mile offshore, between Khawr al Hajar and Khawr al Jaramah, or about 0.5 mile off the entrance to Khawr al Jaramah in 18 to 22m, mud and sand.

11.4 Ras Sharh (22°34'N., 59°39'E.), a slightly projecting point, lies 4.5 miles W of Khawr al Jaramah; cliffs comprise

the intervening coast. From this point to Sur, 6 miles farther W, the coast consists of low broken hills with cliffs, interrupted in places by sandy beaches.

Sur (22°34'N., 59°32'E.) has two settlements, one on each side of Wadi Fulayj, a narrow entrance channel leading into an extensive inlet which nearly dries. Ayqah (Aika) is located on the E side; Muqraymatayn (Umm Kareimatein) is on the W side.

Anchorage is available, in 14.6m, sand, with the E entrance point of Wadi Fulayj bearing 178°, 0.6 mile distant. It is not advisable to anchor closer in, as a heavy swell makes up quickly. A 4.7m patch lies 0.3 mile NNE of Ra's Ayqah.

It was reported (2001) that a fishing harbor, protected by breakwaters, has been constructed on the W side of the entrance to the inlet.

Qalhat (22°42'N., 59°23'E.), a small village, lies about 11 miles NW of Sur. Local small craft shelter in the lee of a small projecting point close inshore of Qalhat. Qalhat is sometimes mistaken for Tiwi, another village 11 miles farther to the NW.

11.5 Qalhat LNG Terminal (22°41'N., 59°24'E.) (World Port Index No. 48240) is situated about 1.4 miles SE of the village. The terminal consists of two T-shaped jetties extending about 0.2 mile from shore in a semi-protected bay open to the sea.

Oman LNG Home Page

http://www.omanlng.com

The Oman India Fertilizer Company (OMIFCO) has built a fertilizer wharf about 1.5 miles SE of the LNG terminal.

Winds—Weather.—The terminal is sheltered, by the mountains to the S, from the strong winds of the Southwest Monsoon during the summer (June to September). During the remainder of the year, the terminal is exposed to the Northeast Monsoon.

Tides—Currents.—Currents are mainly tidal, but can be affected by the wind if blowing from the same direction for an extended period of time. Currents, which run parallel to the berthing face, are NW on the flood tide and SE on the ebb tide and rarely exceed a rate of 0.4 knot.

Depths—Limitations.—The LNG Jetty can accommodate vessels up to 125,845 dwt, with a maximum length of 310m and a maximum draft of 12.1m.

The MOF Condensate Jetty can accommodate vessels up to 13,000 dwt, with a maximum length of 140m and a maximum draft of 7.7m. An underkeel clearance of 2m is required to be maintained at all times.

Weather conditions which limit terminal operations are given in the accompanying table titled **Qalhat—Terminal Operating Limitations**.

The OMIFCO Wharf extends about 0.6 miles NE from the shore. There are berths, each about 183m long with a depth of 14m alongside, on either side of the seaward end of the wharf.

Aspect.—A conspicuous flare, 106m in height, is located in the terminal.

A sector light is occasionally shown from a position about 0.1 mile WSW of the root of the MOF Condensate Jetty.

Pilotage.—Pilotage is compulsory for all vessels using the LNG terminal. The pilot for Qalhat LNG Terminal boards in position 22°43.0'N, 59°27.5'E, between 3.5 and 4 miles NE of the terminal. Berthing and unberthing can be done 24 hours.

Qalhat—Terminal Operating Limitations

	Wind speed	Wave height	Visibility
LNG Jetty			
Berthing	25 knots	2.0m	1 mile
Cargo operations	35 knots	2.0m	—
Disconnection of loading arm	40 knots	2.0m	—
Unberthing	25 knots	2.0m	—
MOF Jetty			
Berthing	25 knots	1.0m	1 mile
Cargo operations	35 knots	1.0m	—
Disconnection of loading arm	40 knots	1.0m	—
Unberthing	25 knots	1.0m	—

Qalhat—Contact Information

	Qalhat LNG Terminal	OMIFCO Wharf
Call sign	Qalhat Control	Omifco Port
VHF	VHF channel 6, 14, and 16	VHF channels 16 and 71
Telephone	968-25547858 (24 hours)	968-25532091
	968-25547705	

Qalhat—Contact Information		
	Qalhat LNG Terminal	OMIFCO Wharf
Facsimile	968-25547764	968-25562847
		968-25562848
E-mail	olngops@omanlng.co.om	kpsarthy@omifco.com

Pilotage for the OMIFCO Wharf is compulsory and is available 24 hours. The pilot boarding position for the OMIFCO Wharf is about 1.5 miles E of the head of the wharf. Berthing and unberthing can be done 24 hours.

Regulations—Vessels using the LNG terminal must send their ETA by facsimile when departing their previous port. The ETA should also be sent by facsimile 96 hours, 48 hours, 24 hours, and 5 hours prior to arrival. Any changes to the vessel's ETA should be sent, as follows:

1. A change of more than 12 hours from the initial ETA sent from the departure port.
2. A change of more than 6 hours following the 96-hour message and before the 24-hour message.
3. A change of more than 2 hours following the 24-hour message.

Vessels using the OMIFCO Wharf should send their ETA, via their agent, 7 days, 72 hours, 48 hours, 24 hours, and 12 hours prior to arrival.

Only vessels proceeding to and from the Qalhat LNG Terminal or the OMIFCO Wharf may enter the restricted area surrounding these facilities.

Anchorage.—Anchorage can be obtained about 2 miles E of the LNG Jetty, in depths of 20 to 58m, in a bottom of mud, sand, and shingle. Permission from the terminal is required to anchor.

An anchorage area, with a diameter of 1 mile, is centered about 2 miles ESE of the OMIFCO Wharf.

Caution.—Fishing activity, mainly during the hours of darkness, occurs in the approaches to the terminal. Drift nets in excess of 1,000m long are used; both the nets and the fishing boats setting them are poorly lit. Because of this, approaching and departing the terminal should be made with caution, preferably maintaining a NE or SW course, as appropriate, until well clear of the coast; vessels should remain at least 10 miles offshore, especially at night, until they are required to be at the pilot boarding position.

11.6 Ras Ash Shajar (22°56'N., 59°12'E.), a low sandy cape, is well-defined only from close in. A shoal extends 0.5 mile offshore from the cape.

The mountains recede from the coast for a distance of 3.5 miles on both sides of the cape. During a shamal, small craft shelter very close inshore SE of the cape.

Ras Abu Dawud lies 28 miles NW of Ras ash Shajar. Low cliffs front the first 18 miles of this stretch of coast, which then becomes low and sandy until within 2 miles of Ras Abu Dawud, where it turns rocky.

About 10 miles NW of Ras ash Shajar, the Jabal Bani Jabir range recedes from the coast in a WNW direction and ends abruptly about 12 miles inland in a large bluff, which forms the SE entrance point to Wadi Hayl al Ghaff (Devil's Gap). This great valley stretches SW between two mountain ranges.

Jabal Qaryat (Qurayyat) rises to a height of 1,899m on the N side of Wadi Hayl al Ghaff. The peak is located at the S end of the mountain range extending NW from Wadi Hayl al Ghaff.

Daghmar (23°13'N., 58°59'E.), a small fishing village, is located on a prominent hill.

Foul ground extends up to 0.5 mile offshore from the point to a position 3 miles to the NW. A low sandy point lies about 1.5 miles N of the village.

Qurayyat (23°16'N., 58°55'E.), a village, is located about 5 miles NW of Daghmar, on a sandy foreshore, at the foot of Jabal Abu Dawud.

Anchorage is available 1.5 miles offshore at Qaryat al Kabirah, in 22m, sand, with the rocky islet off the mouth of the inlet, close S of the village, bearing 227° and Ras Abu Dawud bearing 337°. Anchorage can be taken, in a depth of 9m, 0.2 mile offshore between the village and Ras Abu Dawud.

It was reported (1995) that a small fishing harbor, protected by breakwaters, was under construction in the vicinity of Qurayyat.

11.7 Ras Abu Dawud (23°19'N., 58°55'E.) is steep, rocky, broken up into several points, and not easy to identify from a distance. A rocky islet, 30m high, lies 0.1 mile N of the point.

During a shamal, small local vessels shelter in the small bay close S of the cape.

Cliffs front the shoreline for 4 miles NW of Ras Abu Dawud. From there to the village of As Sifah, 6.5 miles farther to the NW, the coast is low and sandy. In the vicinity of As Sifah the coastal range swings inland, leaving a plain between the shore and the mountain.

Masqat lies 15 miles NW of As Sifah; the intervening coast consists almost entirely of cliffs alternating with sandy bays and inlets.

A range of rugged hills which extends to Ras al Hamra, about 5 miles WNW of Masqat, backs this stretch of the coast.

Jabal Abu Dawud, a detached light-colored mountain, rises abruptly from the coast in the vicinity of Ras Abu Dawud to a height of 1,219m.

A wide valley lies between this mountain and the range farther inland. From a distance, approaching from the SE, Jabal Abu Dawud presents an irregular outline; it appears as an island, steep on its seaward side with a long slope to the W.

The foot of Jabal Abu Dawud extends for 8 miles along the coast.

11.8 Ras al Khayran (23°31'N., 58°45'E.), a light-colored cliff, 18m high and backed by light-colored hills, lies 5 miles NNW of As Sifah. Four small sandy bays lie SE of the point.

Bandar al Khayran (Khairan) (23°31'N., 58°44'E.), a small harbor frequented only by fishing craft, is located S of the W of two islands lying close off the mainland immediately W of Ras al Khayran. The two islands are similar in appearance and are

difficult to distinguish.

Yiti (23°33'N., 58°42'E.), a small village on the shore of a small sandy bay, is located about 3 miles WNW of Bandar al Khayran.

Hassar Shaikh Rock, 24m high, and a smaller rock, 15m high, to the E, stand on the foreshore of Yiti. These rocks appear black against the light-colored hills inland and are conspicuous.

Bandar Jissah (23°33'N., 58°39'E.), a small bay 2 miles N of Yiti, is difficult to distinguish from more than 1 mile offshore. A small steep islet, 48m high, divides the entrance to this bay into two channels.

The E channel is 0.3 mile wide, with a least depth of 12.8m in the fairway. The W channel is nearly blocked by a flat rock, with depths of only 2.7m on each side.

Anchorage is available in Bandar Jissah, in 7.3 to 12.8m; the greatest depths lie just inside the E entrance.

From Bandar Jissah to Masqat, 5 miles to the NW, a succession of rocky-cliffed headlands fronts the coastline, which is broken by small sandy bays and backed by numerous hills.

11.9 Jabal Bardah (Saddle Hill) (23°35'N., 58°36'E.), about 4 miles WNW of Bandar Jissah and about 2 miles inland, rises to a height of 408m. Two sharp peaks form the summit of this dark rugged mountain. In range, the peaks bear 250°; from the N, the peaks appear farther apart and are less conspicuous.

Ras al Kanada (23°37'N., 58°37'E.), about 4 miles NW of Bandar Jissah, terminates in a cliff, 76m high, with Pillar Rock, 31m high, about 0.1 mile to the N. Two small rocks lie 91 and 183m offshore from a point about 0.2 mile NW of Pillar Rock.

Jazirat Masqat (Muscat Island) (23°37'N., 58°36'E.) has a steep rocky shoreline; the W side of the island forms the E side of Khawr Masqat.

Caution.—A disused explosives dumping area, the limits of which may best be seen on the chart, lies about 17 miles ENE of Jazirat Masqat.

Masqat to Dawhat Dabbah

11.10 Between Ras Masqat and Ras ash Shutayfi, 1.5 miles to the WNW, the coast is broken by five bays; Khawr Masqat and Dawhat Matrah are the largest. From Ras Shutayfi the coast turns W for about 4 miles to Ras al Hamra.

Several small bays, separated by rocky headlands and encumbered with off-lying rocks, indent the shoreline. From Ras al Hamra, the coast continues W, then N for 190 miles, to Ras Diba.

Sahil al Batinah is that section of the coast lying between a position 15 miles W of Ras al Hamra and a position 135 miles farther to the WNW.

Ash Shamailiyah is the area comprising the remaining coastal section as far N as Ras Diba. The coast of Sahil al Batinah is sandy, with occasional sand hills; the general elevation along this whole section is about 8m. Inland, the country is mostly level for a distance of 12 miles.

Off Ash Shamailiyah, the terrain changes; the shoreline is fronted with cliffs and broken by sandy bays. Inland, the coastal plain narrows gradually until about midway along this section, where the hills slope downward to the shore.

Tides—Currents.—The W portion of the Gulf of Oman lies outside the region of alternating monsoon winds and possesses no currents related to them. The currents that do exist are variable and exceed 1 knot.

During the period from April to August, evidence indicates that currents set into the Gulf of Oman in directions between N and W; similarly, there appears to be a current setting out of the gulf during the period October to January.

Depths—Limitations.—Between Masqat and Ras as Sawadi the 200m curve lies about 5 to 15 miles offshore.

From NW of Ras as Sawadi, the curve parallels the coastline, at a distance of 13 to 16 miles, to the vicinity of Al Murayr, where it widens gradually to about 43 miles offshore at Ras Dabbah.

The Jazair Daymaniyat are the only off-lying dangers along this part of the coast. This area has not been thoroughly surveyed and the harbors and inlets are suitable only for small local craft.

11.11 Ras Masqat (23°38'N., 58°37'E.) is the N extremity of Jazirat Masqat and the E entrance point of Khawr Masqat. It is a round sloping bluff, with cliffs to the S of it. The bluff is fronted by a reef, which is marked to the N by a lighted beacon. Fisher's Rock, 3m high, lies close N of the bluff.

A light, equipped with a racon, is shown from a tower standing on the N summit of the island, 0.1 mile S of Ras Masqat. A prominent tower is situated on the NW extremity of the island, W of the light.

Masqat (Muscat) (23°37'N., 58°37'E.), the capital, has ceased to be a commercial port. It is now served by the modern port of Mina Qabus (Port Sultan Qaboos) in Dawhat Matrah, 1.3 miles W of Ras Masqat.

Khawr Masqat, the site of the former port at the W side of Jazirat Masqat, now lies within a prohibited area.

Qal at Jalali, a fort, stands on a small hill, 46m high, about 0.5 mile S of Ras Masqat Light. It has been restored and is conspicuous, especially in the morning sun against the dark land behind it. The fort is illuminated at night.

The Royal Palace, a prominent gold and blue building, stands 0.2 mile WSW of Qal at Jalali at the head of Khawr Masqat. It is the largest structure situated along the sea front. The roof is flat and surmounted by a flag staff.

Hisar Mirani, a fort, stands close NW of the palace. It has three towers and a battery on the shore below it. This fort, which is illuminated at night, is conspicuous.

Sirat al Gharbiyah, another prominent fort, stands on a small promontory at the W side of Khawr Masqat, 0.4 mile SW of Ras Masqat Light. It is reported to be radar conspicuous.

Mina Qabus (Port Sultan Qaboos) (23°37'N., 58°34'E.)

World Port Index No. 48250

11.12 Mina Qabus, located on the NW side of Dawhat Matrah, is protected on the N by a breakwater extending SE from Ras Kawasir. The approaches to the port are contained within a prohibited anchorage area, which may be best seen on the chart.

Winds—Weather.—The prevailing winds are NW and SE, with winter winds out of the SW and W and summer winds

Mina Qabus—Grain Silos

Mina Qabus—Observation Tower

Mina Qabus—Breakwater Head

Mina Qabus—Mutrah Castle

from the E. During January and February, the winds are fresh with some rainfall.

Mina Qabus Home Page

http://www.pscoman.com

The fine weather experienced from March to May becomes very hot during the months of June through September.

October brings the return of fine weather, with gradually cooling temperatures continuing until December. Strong shamals occur at all times of the year.

Winds of any force from NW to NE raise a considerable sea and swell in Khawr Masqat and Dawhat Matrah.

Tides—Currents.—The tides generally rise about 1.4m while spring tides rise 1.9m, although a tidal rise of as much as 3.1m has been reported (2009).

A strong SE set, with a rate of up to 4 knots, has been reported to exist in the approach to the port.

Depths—Limitations.—The seaward approaches to the harbor are deep and clear of dangers, with the 20m curve lying about 0.2 mile NE of the breakwater head. The harbor entrance channel has a depth of 13m.

The outer part of the harbor, including Basin 1, has a dredged depth of 13m (2008). The center part (Basin 2) has a dredged depth of 9m and the inner part (Dawhat Mutrah) has a dredged depth of 8m.

The port has facilities for container, general cargo, and ro-ro vessels. Vessels up to 260m in length, with a maximum beam of 38m and a maximum draft of 12.5m, can be accommodated.

The port provides a total of 13 commercial berths, nine of which can accommodate ocean-going vessels. Berthing information is given in the accompanying table titled **Mina Qabus—Berthing Facilities**.

Aspect.—A number of conspicuous silos stand in the NW part of the port, about 0.5 mile WNW of the breakwater head. Two prominent gantry cranes stand on the container quay, about 0.3 mile W of the breakwater head.

A conspicuous observation tower, 68m high and resembling an incense burner, stands close S of Ras al Baz, about 0.5 mile SE of the breakwater head. It is illuminated at night.

Mutrah Castle, 30m high, stands on the summit of a detached hill near the head of Mina Qabus; the castle is conspicuous and is illuminated at night.

For additional landmarks in the vicinity of Khawr Masqat, see paragraph 11.11.

Pilotage.—Pilotage is compulsory for all vessels and is available 24 hours. Pilots can be contacted on VHF channel 14 and board between 0.7 and 1 mile NE of Port Sultan Qaboos Breakwater Light.

Departing vessels should request pilotage 2 hours before ETD; contact should also be established with the pilots 30 minutes before ETD on VHF channel 14.

Regulations.—Vessels must send an ETA and request for pilotage through the agent 72 hours, 48 hours, and 24 hours in advance. The message must include length overall, draft, gt, and nrt.

Vessels should establish contact with Port Control 3 hours before arrival on VHF channel 14 or 16.

During major dredging operations, inbound vessels must contact Port Control and confirm their ETA when 5 miles from the breakwater. Departing vessels must establish contact with Port Control 1 hour before ETD.

Special regulations are in force concerning dangerous or hazardous cargo. Vessels should be well-acquainted with these regulations before berthing.

Mina Qabus—Berthing Facilities

Berth	Length	Depth	Remarks
No. 1	286m	12.4m	Multi-purpose berth. See Note.
No. 2	183m	12.8m	Multi-purpose berth. See Note.
No. 3	228m	11.0 to 11.4m	Bulk cargo.
No. 4	183m	10.3m	Containers. See Note.
No. 5	183m	10.3m	Containers. See Note.
No. 6	198m	9.7m	General cargo.
No. 7	183m	9.0m	General cargo. See Note.
No. 8	183m	9.0m	General cargo. See Note.
No. 9	122m	4.0m	Private berth.
No. 10	183m	4.2 to 4.7m	Private berth.
No. 11	183m	8.8m	Private berth.
No. 12	160m	8.0m	Private berth.
No. 13	152m	2.2m	Private berth.

Note.—These berths are in line. Larger vessels can occupy part of a second berth, if necessary.

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Port Sultan Qaboos *
2. VHF: VHF channels 14 and 16
3. Telephone: 968-24714000
   968-24714870
4. Facsimile: 968-24712196
   968-24714007
5. E-mail: psc@omantel.net.om

* It has been reported (2012) Port Control responds more consistently when addressed as "Muscat Port Control."

The harbormaster can be contacted by telephone (968-992-18284).

Anchorage.—A designated waiting anchorage, the limits of which may best be seen chart, lies centered about 1 mile NNW of the breakwater. This anchorage is for vessels awaiting instructions within the territorial waters of the Sultan of Oman and no other anchorage may be used. All vessels intending to use this anchorage must contact Port Sultan Qaboos Port Control to request anchorage and give the following information:

1. Flag or port of registry.
2. Call sign, dwt, nrt, and gt.
3. Ports of call, including last port and next port.
4. Dangerous or hazardous cargo on board.

All vessels must be represented by a local agent before permission for anchoring will be granted.

Special regulations are in force for all vessels using the anchorage, and are subject to harbor dues, except for tankers waiting to proceed to the SBM moorings.

Directions.—Approaching from N or W, all vessels must steer to pass N and at least 1 mile E of Fahal Fairway Lighted Buoy (23°40.9'N., 58°32.6'E.), which is moored 2 miles E of Jazirat al Fahl. They must then remain at least 1 mile E of the lighted buoy before making the approach to the pilot boarding position in order to ensure adequate clearance from the tanker moorings in Mina al Fahl.

Under no circumstances should vessels approach or enter Khawr Masqat or wait in the prohibited anchorage area.

Caution.—It has been reported (2005) that landmarks may be difficult to distinguish due to haze and the earth-colored background.

It has been reported (2013) only one vessel may enter or exit the harbor at a time.

A dangerous wreck lies about 0.8 mil N of Ras ash Shutayfi in the vicinity of the designated waiting anchorage.

Mina al Fahl (23°39'N., 58°32'E.)

World Port Index No. 48255

11.13 Mina al Fahl, located in a shallow bight about 3 miles W of Mina Qabus (Port Sultan Qaboos), is centered within a Restricted Area, which may best be seen on the chart.

Winds—Weather.—See Mina Qabus (Port Sultan Qaboos), in paragraph 11.12.

Tides—Currents.—Spring tides rise about 3m.

Depths—Limitations.—Four SBM tanker berths, which may best be seen on the chart, lie up to 2 miles N of the coast and are connected to the shore facilities by submarine pipelines. Berthing limitations are given in the accompanying table titled **Mina al Fahl—Berthing Limitations**.

There are also two inshore mooring berths for coastal tankers with drafts up to 4.5m.

Aspect.—Numerous oil tanks line the shore in the vicinity of the port. Radio masts are charted about 1.6 miles SE of Ras al Hamra. Six chimneys and a flare are charted, respectively, about 0.4 mile E and 0.4 mile SW of the radio masts.

Mina al Fahl—Berthing Limitations

Berth	Depth	Vessel size	Maximum draft
SBM No. 1	34m	350,000 dwt	18.5m. See Note 1.
SBM No. 2	43m	554,000 dwt	See Note 2.
SBM No. 3	20m	100,000 dwt	14.0m
SBM No. 4	Retained as a replacement mooring and is not in general use.		

Note 1.—This is the maximum berthing draft. The maximum departure draft is 21.5m.

Note 2.—No draft limitations.

Pilotage.—Pilotage is compulsory for tankers. Pilots can be contacted on VHF channel 12 (call sign: Fahl Pilots) and board about 1.5 miles NE of Jazirat al Fahl or 1 mile E of Fahl Fairway Lighted Buoy (23°40.9'N., 58°32.6'E.), depending on the current.

Regulations.—Vessels must send an ETA and request for pilotage 5 days, 96 hours, 72 hours, 48 hours, and 24 hours in advance to PETROMAR MUSCAT. Any change in the ETA in excess of 2 hours must also be sent.

Vessels must contact Fahl Control (Fahal Control) 2 hours prior to arrival on VHF channel 12.

The 5-day message must include the following:

1. Vessel's ETA (local time and date).
2. Time vessel will tender Notice of Readiness, if different from the ETA.
3. Confirmation that vessel is fully inerted, with all tanks less than 8 per cent O_2.
4. Last port of call.
5. Next port of call.
6. Quantity of cargo required (in barrels).
7. Time required for deballasting prior to loading.
8. Maximum draft on arrival and trim.
9. Maximum draft on departure.
10. Safe working load of crane or hose-handling derrick.
11. Number, type, size, and safe working load of bow-stoppers for securing SBM mooring chains.
12. Flag of vessel.
13. Master's name.

All vessels, whether in port or waiting off the port, should maintain a continuous listening watch on VHF channel 12. During loading operations, contact is made via a shore-provided UHF radio, with VHF channel 12 for back-up.

It has been reported VHF communication extends up to 80 miles N of the port, but only 20 miles E of the port.

The loading facilities are enclosed within a restricted area, best seen on the chart, which extends up to 3 miles seaward. Vessels must not enter the restricted area without a pilot.

Jazirat al Fahl

Anchored vessels shall inform Port Control (call sign: Fahl Control) of the following information:

1. Time of anchoring.
2. Bearing and distance from Jazirat al Fahl.
3. Notice of Readiness time.

Contact Information.—Port Control can be contacted, as follows:

1.	Call sign:	Fahl Control
2.	VHF:	VHF channels 12 and 16
3.	Telephone:	968-24677230 968-24677231 968-24677239
4.	Facsimile:	968-24675150
5.	E-mail:	port.ops.supervisors@pdo.co.om
6.	Web site:	http://www.pscoman.com

Anchorage.—An anchorage area, the limits of which may best be seen on the chart, lies centered 5 miles W of Jazirat al Fahl. The port control will assign anchorage berths, as appropriate. In all cases, tankers are required to anchor at least 2 miles clear of the coast.

Caution.—Several obstructions and areas of foul ground lie on the bottom in an area 1.5 to 3.5 miles W of Jazirat al Fahl and may best be seen on the chart.

11.14 Ras al Abyad (23°39'N., 58°30'E.), a sloping point, forms the W entrance point of Mina al Fahl.

Jazirat al Fahl (23°41'N., 58°30'E.) lies about 2 miles N of Ras al Abyad. The island is 85m high, steep-to, and precipitous. Cliffs overhang all but the SW extremity and the light color of the island shows up well against the mainland.

A light is shown from a framework tower, 6m high, standing near the center of the island.

The deep passage lying between this island and the coast is free of dangers.

Ras al Hamra (23°39'N., 58°29'E.), about 0.5 mile W of Ras al Abyad, is a red cliffy point, 46m high.

A desalination plant, which consists of a prominent building, six tall conspicuous chimneys, and associated storage tanks, stands close inland, about 5 miles WSW of this point. A jetty extends 0.5 mile N from the coast in the vicinity of the plant.

A prominent hotel stands 2 miles SW of Ras al Hamra. At night, the domes of the hotel are illuminated.

Between Ras al Hamra and As Sib, 18 miles W, the coastline recedes slightly to form the bight of Ghubbat al Hayl. Several small villages stand along this stretch of coast.

As Sib (Seeb) (23°41'N., 58°10'E.), which is difficult to identify, affords exposed anchorage, in a depth of 9m, sand, about 0.5 mile offshore. There is no shelter at all.

An international airport is located 1.5 miles inland, about 7 miles SE of As Sib.

Ras al Ghaf (Ras al Qaf) (23°42'N., 58°05'E.) is a broad, low point about 5 miles WNW of As Sib. A sandy shoal, with depths of 3.6m, lies 1.5 miles offshore N of Ras al Ghaf.

A prominent group of buildings, enclosed by a white wall, is situated at Bayt al Barakah, 1 mile W of Ras al Ghaf.

Caution.—A prohibited area, which may best be seen on the chart, extends up to 2.5 miles seaward from the shore in the vicinity of Ras al Ghaf.

11.15 Juzor ad Daymaniyat (23°50'N., 58°04'E.), known locally as Saba Jazair, consists of several groups of islands, islets, and rocks. These groups lie 7 to 9 miles offshore and parallel the coast for a distance of 12 miles to the W of As Sib. They are without water and are quite barren.

The 200m curve lies 5 to 6 miles N of the islands; the depths for several miles S of them are fairly regular, with depths of less than 30m. The bottom is mainly sand, mud, and shells. These islands form a nature reserve and are contained within a Restricted Area, which may best be seen on the chart. Fishing other than by local boats, anchoring, diving, and approaching within 2,000m of any island are prohibited without a permit.

The E group consists of Jazirat Kharabah, the E island, located 8.5 miles N of As Sib, and the detached rocks lying off of it. The island is 9m high and consists of black rocky points separated by white sandy beaches. A reef extends off the N and E sides. A depth of 3.4m lies 1.5 miles WSW of Jazirat Kharabah.

The middle group consists of seven islets and some detached rocks. The two largest islets are 16m and 25m high, with low light-brown cliffs, and are difficult to distinguish at night. The E islet in the group lies 3 miles WNW of Jazirat Kharabah. These islets are reported to be steep-to, with no off-lying shoals

A light is shown from a metal tripod standing at an elevation of 27m on the summit of the W islet of the middle group. A racon is situated at this light.

The W group, located 4 miles WSW of the W islet in the middle group, consists of Jazirat Jun and three rocks. There are depths of 30m in the danger-free passage separating the W and middle groups. Jazirat Jun, light brown and difficult to see at night, is about 30m high near its W end.

Anchorage is available off a small sandy beach on the S side of the islet, in 12.8m, sand. This anchorage is sheltered from the N, although considerable swell sets around the islets during strong winds.

A rocky depth of 7.8m lies 0.5 mile S of Jazirat Jun. A rocky spit with depths of 3.2m extends SE for about 0.1 mile from the W rock in this group.

Clive Rock (23°50'N., 57°57'E.), a coral rock lying about 1 mile WNW of Jazirat Jun, has a least depth of 2.7m.

There are depths of about 25 to 35m at a distance of 0.5 mile from the rock. Clive Rock is visible under most conditions as a green patch.

11.16 Barka (23°42'N., 57°54'E.) is located about 10 miles W of Ras al Qaf. The town extends along the coast for about 3 miles. A conspicuous building with four towers stands in the center of the town. Two breakwaters, each marked by a light at its head, enclose a basin in the vicinity of this building.

Anchorage is available, in a depth of 9m, sand, 1 mile offshore. The open roadstead is unprotected. Depths decrease gradually toward the shore, but irregular depths of 9.1 to 16.5m extend NE from the anchorage for 3 miles.

Ras Suwadi (Suwadi Point) (23°57'N., 57°48'E.) is a low sandy point located about 7 miles WNW of Barka.

Jazair Suwadi (23°57'N., 57°48'E.), seven in number, all lie within 1 mile of Ras Suwadi. Jabal Add, the largest and farthest E, is a table-topped islet, 87m high.

Cliffs front the seaward side of Jabal Add; there is a small sandy bay on the W side. The drying channel between the islet and Ras as Sawadi is only 0.2 mile wide. The other six islets are precipitous, with heights ranging from 15 to 37m.

11.17 Wudam (Said Bin Sultan Naval Base) (23°50'N., 57°32'E.) is the principal operational base for Oman's navy; there are no commercial berths or facilities. The principal berth for visiting vessels lies alongside the Operational Jetty, on the S side of the harbor.

Entry is restricted to authorized vessels only. Pilotage is not normally available. Authorized vessels should contact the base on VHF channel 74 when 2 miles from Fairway Lighted Buoy.

The naval base can be contacted, as follows:

1. Call sign: A4W
2. VHF: VHF channels 16 and 74
3. Telephone: 968-26346026
4. Facsimile: 968-26346017

The harbor is approached through an outer channel dredged (1995) to a depth of 8.5m, although depths as deep as 8m have been reported (2013). Two breakwaters enclose a basin about 0.6 mile in extent with dredged depths of 6.5m (1995) to 7.0m (2009). The berths along the outer face are reported (1995) to be dredged to a depth of 7m.

A light is shown from the head of the NW breakwater. A lighted fairway buoy is moored about 1.3 miles NE of the NW breakwater head. The entrance fairway is indicated by directional sector lights, ranges, and lighted beacons, which may best be seen on the chart.

The tidal currents in the vicinity of the harbor are weak.

A prominent water tower, 27m high, stands close S of the root of the NW breakwater. A prominent radio mast, 54m high, stands near the root of the SE breakwater. A stadium, 41m high, and a water tower, 32m high, are situated 0.2 mile S of radio mast. A conspicuous yellow building, a covered repair shed, stands on the S side of the harbor.

A conspicuous yellow minaret, with a white balcony and a green cupola, stands close to the shore in the center of Wudam Sahil, a fishing village located 1.5 miles SE of the harbor.

Caution.—Anchorage is prohibited within an area, shown on the chart, extending up to about 5 miles offshore in the vicinity of the harbor.

A restricted area extends up to 1.5 miles offshore in the vicinity of the harbor and may best be seen on the chart. Entry is prohibited without authority, other than for emergency or stress of weather, in this area.

Works are in progress (2012) along the inner side of the inner breakwater.

11.18 As Suwayq (As Suwaiq) (23°51'N., 57°27'E.) is located about 5 miles W of Wudam. A large and prominent fort stands in the middle of the town. Two hills, light yellow and 213 to 300m high, stand 16 miles SW of the town and show up well from seaward against the dark mountains inland.

Al Khaburah (24°00'N., 57°06'E.), one of the most important towns on this coast, extends for 1 mile along the shore. A prominent fort, with two partly ruined towers, stands near the center.

Makhailif (24°07'N., 56°57'E.) is a small town. A conspicuous high fort stands in its vicinity and is the most prominent landmark along this coast.

Saham, a large inconspicuous town, is situated 4 miles NW of Makhailif. Some of the buildings and a tower, 137m high, are prominent from seaward.

11.19 Sohar (As Suhar) (24°23'N., 56°45'E.) lies 30 miles NW of Al Khaburah. A prominent tower, 33m high, stands in this town and is sighted before the date groves which are continuous in this area. A prominent radio mast is situated 6 miles S of the town.

Anchorage.—Anchorage is available at Sohar, 1 mile offshore, in a depth of 9m, sand. Depths shoal gradually toward the shore.

11.20 Jabal Suhar (Hura Bargha) (24°17'N., 56°33'E.), located about 12 miles WSW of the town, rises from the plain between the shore and the mountain range farther inland. The conical peak is 511m high, light brown in color, and, when visible, a good landmark. When bearing less than 225°, this peak appears triangular in shape.

Majis (24°28'N., 56°40'E.) is a town with a conspicuous white minaret at its NW end. In the center of the town is a long low inconspicuous fort with a square tower at its NE corner.

A T-headed jetty, used for the export of bulk solid commodities, extends about 0.7 mile from the shore, about 1.8 miles NW of the town. The berth, 110m long, can accommodate vessels up to 10,000 dwt.

A marine farm, marked by a light, is situated about 3 miles offshore in the vicinity of the town.

11.21 Sohar (24°31'N., 56°38'E.) (World Port Index No. 48257) is a major new port about 4 miles NW of Majis.

Sohar Home Page

http://www.portofsohar.com

Winds—Weather.—Winds are light to moderate; the prevailing winds are from between NE and SW. Summers are hot, with high humidity. Winters are much cooler.

Tides—Currents.—Tidal currents are variable and light, with speeds of 0.25 to 0.75 knots.

Depths—Limitations.—The port is approached through a buoyed channel with a least depth of 15.6. Only one-way traffic is permitted in the channel. The harbor basin has a dredged depth of 16.0m (2002).

Information on berthing facilities is given in the accompanying table titled **Sohar—Port Facilities**.

Construction is in progress (2008) on Berths 9 to 14, which will extend NNW from Berth 8. Construction and reclamation is also in progress (2008) on the inner side of the W breakwater.

Sohar—Port Facilities

	Pier		Maximum Vessel		
	Length	Depth	Size	Length	Beam
OOT Terminal (Liquid Bulk)					
Berth AA1	—	16m	70,000 dwt	265m	45m
Berth AA2	—	16m	70,000 dwt	265m	45m
Berth A	—	16m	110,000 dwt	265m	45m
Berth B	—	16m	110,000 dwt	265m	45m
Berth C1A	—	16m	107,000 dwt	265m	45m
Berth C2A	—	16m	107,000 dwt	265m	45m
Container (Berths 7 and 8)	520m	16m	—	—	—
Aluminum Quay (Berths 1 and 2)	300m	18m	—	—	—
General Cargo/Dry Bulk (Berths 3, 4, 5, and 6)	730m	16m	—	—	—

Aspect.—The W breakwater is 3,063m long; the E breakwater is 2,931m. long. The head of each breakwater is marked by a light.

A directional light leads through the approach channel and between the breakwater heads.

Pilotage.—Pilotage is compulsory for all vessels except for naval vessels, government vessels, or any vessel exempted by the harbormaster. Pilots should be requested from the harbormaster, via the vessel's agent, at least 3 hours before pilotage is required. The pilot boards in position 24°33.3'N, 56°37.7'E.

Regulations.—Vessels send their ETA to the harbormaster 72 hours and 24 hours prior to arrival. The ETA is confirmed with the harbormaster 4 hours prior to arrival; the confirmation message will include the following information:

1. Length overall.
2. Draft.
3. Net tonnage and gross tonnage.
4. Cargo distribution details.
5. ETA and anticipated draft at departure.
6. Last port of call.
7. Next port of call.
8. Vessel flag.
9. Dangerous cargo.

Vessels should contact the harbormaster on VHF channel 16 or 71 or the working channel to obtain permission to enter or leave the port.

Vessels should maintain a continuous listening watch on VHF channel 71 when in the port.

Vessels may not enter the charted restricted area without a pilot on board.

Departing vessels normally have the right-of-way in the approach channel over arriving vessels.

Vessels over 70m long or greater than 200 gross tons are required to use tugs when entering and departing the port and when berthing or unberthing.

Vessels shall notify the harbormaster at least 1 hour prior to departing the port.

The maximum permitted speed in the harbor is 7 knots, unless otherwise directed by the harbormaster.

Contact Information.—The port authority can be contacted, as follows:

1. Telephone: 968-26852700
   968-26852703
2. Facsimile: 968-26852720
3. E-mail: ops@portofsohar.com

The harbormaster can be contacted, as follows:

1. Telephone: 968-26762517
   968-26762518
2. Facsimile: 968-26852519

Port Control (call sign: Sohar Port Control) can be contacted on VHF channels 13, 16, and 71.

Anchorage.—Five anchorage areas, designated A to E and best seen on the chart, lie NE of the port and are assigned, as follows:

1. Anchorage Area A—Vessels awaiting berthing.
2. Anchorage Area B—Long-term lay-up, repairs, crew changes, and stores reception.
3. Anchorage Area C—Bunkering, ship-to-ship operations, or gas trials.
4. Anchorage Area D—Long-term lay-up, repairs, crew changes, and stores reception.
5. Anchorage Area E—Bunkering, ship-to-ship operations, or gas trials.

Caution.—There are many artificial reefs around the area of Port Sohar; known artificial reefs are charted as foul. The extent of each reef varies with time. Mariners are advised to use caution when anchoring in areas where foul depths are charted.

Small craft transiting the port limits of Sohar should do so along the charted recommended two-way route.

11.22 Shinas (Ash Shinas) (24°46'N., 56°29'E.), a small town, is located about 27 miles NW of Sohar. An inlet used by dhows is entered 1.5 miles N of Shinas; it extends parallel with the shore fronting the town.

Anchorage is available a short distance N of the town off the mouth of the inlet, in a depth of 9m. The depths shoal gradually toward the shore.

It is reported (1998) that a fishing harbor, protected by breakwaters, is being constructed in the vicinity of Shinas.

Khatmat Malahah (24°59'N., 56°21'E.) is a dark ridge of hills sloping down to the coast. The border between Oman and United Arab Emirates lies in the vicinity of this ridge.

Khawr Kalba (25°02'N., 56°22'E.) is a village standing on the N side of a creek. Breakwaters extend about 900m ENE from each side of the creek to form a small craft harbor.

Kalba, a large village, stands 3 miles N of Khawr Kalba; a large prominent building with a tower, which resembles a castle, is situated in it.

A fishing harbor, protected by breakwaters, fronts the shore about 1.2 miles N of Kalba.

Fujayrah Harbor (25°10'N., 56°20'E.)

World Port Index No. 48262

11.23 Fujayrah Harbor consists of a stretch of coast enclosed by two breakwaters. The N breakwater extends SE and S to overlap the S breakwater and form an entrance facing S. The harbor breakwaters extend about 0.6 mile from the coast and form an entrance about 215m wide.

There are facilities for ro-ro, general cargo, container, tanker, and livestock-carrier vessels.

Fujayrah Port Home Page

http://www.fujairahport.ae

Dubai Port Authority (DP World) Home Page

http://www.dpworld.ae

Vopak Enoc Terminal Home Page

http://www.vopakhorizonfujairah.com

Winds—Weather.—Strong gale force winds from W to NW may occur, especially from November to May.

Tides—Currents.—The tides rise about 2.6m at HW and 0.6m at LW.

A W current, with a rate of 1.4 knots, was reported (2010) in the approach to the port.

Depths—Limitations.—The harbor entrance channel is dredged to a depth of 15m (2009). The majority of the harbor basin is dredged to a depth of 15m (2009). Dredged depths alongside the berths, as well as other limiting factors at the berths, are given in the table titled **Fujayrah Harbor—Berthing Information**.

Vopak Horizon Fujayrah Limited Terminal (25°12'N., 56°22'E.), a T-head jetty 1,000m long, is situated 2 miles N of Fujayrah harbor. Berthing and mooring dolphins are provided at each berth. Berth No. 1 is the outer berth; Berth No. 2 is the inner berth.

A finger jetty extends N from the N side of the approach trestle; Berth No. 3 is on the E side of the jetty, while Berth No. 4 is on the W side of the jetty. The jetty is approached from the SE through a buoyed channel, 0.8 mile long, which has a least depth of 17m.

Berthing information is given in the table titled **Vopak Horizon Fujayrah Limited Terminal—Berthing Information**.

VOPAK SPM A is moored offshore, in a depth of 26m, E of the terminal. Vessels from 40,000 dwt to 175,000 dwt, with a maximum length of 300m and a maximum draft of 17.5m, can be accommodated.

Fujayrah—Control Tower

FABCO SPM J, in a depth of about 39.9m, is located about 1.75 miles NE of Fujayrah Naval Base. Vessels of 10,000 to 45,000 dwt, with a minimum loa of 130m and a maximum loa of 200m, can be accommodated. A submarine pipeline connects the SBM to the shore about 1.6 miles WNW.

ADCO Fujairah Terminal, located close NE of VOPAK SPM A and best seen on the chart, consists of three turret-type CALM buoys. Each buoy can accommodate vessels of 100,000 to 320,000 dwt, with a minimum loa of 150m and a maximum loa of 340m.

Aspect.—A prominent radio mast stands at an elevation of 400m, about 1.7 miles NW of the root of the N breakwater.

Al Gurfah, a fishing harbor, lies 3 miles S of the port; two conspicuous radio masts stand about 0.6 mile W of it. Another conspicuous radio mast stands at an elevation of 137m about 3 miles W of this harbor.

Each breakwater head at Fujayrah is marked by a light. The light at the N breakwater head is equipped with a racon.

The harbor entrance channel is marked on its W side by lighted buoys.

The signal station and port control tower, 28m high, stands near the root of the S breakwater.

Fujayrah Harbor—Berthing Information						
Berth	Depth Alongside	Length	Maximum vessel dimensions			Remarks
			Arrival Draft	Sailing Draft	Size	
Main Quay (Container and General Cargo Berths)						
No. 1	10.5m	170m	9.5m	10.0m	50,000 dwt	Containers. See Note 1.
No. 2	12.0m	200m	11.0m	11.5m	50,000 dwt	Containers. See Note 1.
No. 3	12.0m	200m	11.0m	11.5m	50,000 dwt	Containers. See Note 1.
No. 4	12.0m	185m	11.0m	11.5m	50,000 dwt	Containers.
No. 5	12.0-15.0m	300m	13.0m	13.5m	—	—
No. 6	15.0m	319m	13.0m	13.5m	—	—
7m Quay	7.0m	250m	—	—	—	South of Berth No. 1.

Fujayrah Harbor—Berthing Information						
Berth	Depth Alongside	Length	Maximum vessel dimensions			Remarks
			Arrival Draft	Sailing Draft	Size	
South Breakwater Berths						
No. 1	15.0m	300m	13.5m	14.0m	—	—
No. 2	15.0m	280m	13.5m	14.0m	—	—
No. 3	15.0m	280m	13.5m	14.0m	—	—
Oil Terminal 1						
No. 1	15.0m	240m	13.5m	14.0m	55,000 dwt	See Note 3.
No. 2	15.0m	300m	13.5m	14.0m	120,000 dwt	See Note 3.
No. 3	15.0m	300m	13.5m	14.0m	120,000 dwt	See Note 3.
Oil Terminal 2						
No. 4	18.0 m	450m	16.5m	17.0m	300,000 dwt	See Note 4.
No. 5	18.0 m	350m	16.5m	17.0m	180,000 dwt	See Note 4.
No. 6	18.0 m	350m	16.5m	17.0m	180,000 dwt	See Note 4.
No. 7	18.0 m	350m	16.5m	17.0m	180,000 dwt	See Note 4.
VLCC Terminal						
VLCC 1	26.0m	—	—	—	—	See Note 5.

Note 1.—Larger vessels may be accommodated with 24 hours notice.

Note 2.—Movement restrictions at Berth No. 1 through Berth No. 4 are, as follows:

1. Vessels drawing less than 11.5m—No restriction on movements.
2. Vessels drawing between 11.5m and 12.0m—Movements allowed only between 5 hours before to 4 hours after predicted HW.
3. Vessels drawing more than 12.0m—Movements allowed only with permission of the Harbormaster.

Note 3.—Located on the inner side of the N breakwater. Minimum vessel length of 75m at all berths. Maximum vessel length of 250m at all berths.

Note 4.—Located on the outer side of the N breakwater. Minimum vessel length of 75m at all berths. Maximum vessel length of 330m at Berth No. 4 and 300m at Berth Nos. 5-7.

Note 5.—Can accommodate vessels with a minimum loa of 240m and a maximum loa of 340m.

Vopak Horizon Fujayrah Limited Terminal—Berthing Information						
Berth	Depth	Maximum vessel dimensions			Vessel size	Remarks
		Length	Arrival draft	Sailing draft		
No. 1	18.0m	295m	14.8m	15.5m	5,000 to 150,000 dwt	Minimum vessel length of 74m.
No. 2	14.0m	200m	11.2m	11.9m	3,000 to 60,000 dwt	Minimum vessel length of 74m.
No. 3	12.3m	140m	10.5m	11.0m	2,000 to 15,000 dwt	—
No. 4	11.9m	140m	8.0m	8.5m	2,000 to 15,000 dwt	—
No. 5	14.9m	250m	12.0m	13.0m	5,000 to 110,000 dwt	Minimum vessel length of 74m.
No. 6	13.7m	200m	10.0m	11.0m	5,000 to 110,000 dwt	Minimum vessel length of 74m.

Fujayrah Harbor—Contact Information				
	Port Authority	**Port Control**	**Harbormaster**	**Vopak Horizon Fujayrah Limited Terminal**
Call sign	—	Fujayrah Port Control	—	—
VHF	—	VHF channels 8, 10, and 16	—	—
Telephone	971-9-2228800	971-9-2228777 971-9-2070263	971-9-2070260	971-9-2281800 971-9-2281642 (control room)
Facsimile	971-9-2228811	971-9-2228022	971-9-2228022	971-9-2281371
E-mail	info@fujairahport.ae	mo_pof@fujairahport.ae ct_pof@fujairahport.ae	hm_pof@fujairahport.ae	—

Pilotage.—Pilotage is compulsory for entering the harbor and is available 24 hours. The pilot can be contacted, as follows:

1. VHF: VHF channel 12
2. Telephone: 971-9-2070268
3. E-mail: pilot_pof@fujairahport.ae

Pilots board about 2.25 miles ESE of the harbor entrance (charted as Port of Fujayrah South) for both Fujayrah Harbor, including both oil terminals, and Vopac Horizon Limited Terminal, including the offshore SPM.

Pilots for the ADCO SPM Terminal board in position 25°18.9'N, 56°35.0'E (charted as Fujayrah North (SPMs)).

Departing vessels should request a pilot immediately upon completion of loading and disconnection.

Regulations.—Vessels should send their ETA 72 hours in advance, confirming the ETA 48 hours, 24 hours, and 12 hours prior to arrival. The ETA message should contain the vessel's name and arrival draft.

All vessels should contact Fujayrah Port Control on VHF channel 8, 10, or 16 when within VHF range.

Vessels intending to enter the harbor or to anchor within Fujayrah waters should establish contact with Port Control as soon as possible on VHF channel 16 before entering within 4 miles of the coast. Such vessels must request instructions and keep a listening watch on VHF channel 16.

Departing vessels should give notice of their ETD immediately upon completion of loading and disconnection.

Masters must certify to Port Control that no visitors or illegal persons are on board the vessel and the persons on board the vessel will strictly match the crew list at the time of sailing.

Vopak Horizon Fujayrah Limited Terminal is surrounded by a restricted area, which is best seen on the chart. Vessels not using the terminal are requested to remain outside the restricted area surrounding the terminal.

All single-hull tankers, regardless of age, are prohibited from calling at the port or the offshore anchorage areas.

It has been reported (2013) tankers classed by classification societies that are not members of the International Association of Classification Societies are prohibited from conducting tanker operations in Fujayrah.

Crossing the channel leading to the SPM terminal is prohibited. Entering into the area without a pilot is not permitted.

Contact Information.—Port contact informations can be found in the table titled **Fujayrah Harbor—Contact Information**.

The ADCOP SPM Terminal can be contacted, as follows:

1. Telephone: 971-9-2283079 (Operations)
2. Facsimile: 971-9-2283081

Weather Limitations at Fujayrah SPMs		
Operation	**Maximum**	
	Wind speed	**Wave height**
Mooring operations	25 knots	2.5m
Stop loading and standby to disconnect hoses	35 knots	3.0m
Unmoor from SPM	40 knots	3.5m

Anchorage.—Designated anchorage areas, the limits of which are shown on the chart, lie E and NE of the port, as follows:

1. Anchorage Area A—Vessels awaiting orders.
2. Anchorage Area B—Vessels requiring bunkering, lubricating oil, or tank-cleaning facilities.
3. Anchorage Area C—Vessels requiring marine services, excluding oil products.
4. Anchorage Area D—Vessels carrying hazardous cargo, explosives, LNG, or LPG.
5. Anchorage Area G—For LNG or LPG vessels to conduct ship-to-ship operations.
6. Anchorage Area N—Naval vessels only.
7. Anchorage Area S—Tankers involved in ship-to-ship operations.
8. Anchorage Area T—Tankers calling at the SPM terminal and requiring stores, spares, bunkers, lubricating oil, or tank-cleaning facilities.
9. Anchorage Area V—Vessels waiting for VLCC berths.
10. Anchorage Area W—Vessels awaiting a berth in Fujairah or at the VOPAK Terminal.
11. Area Kalba A—For vessels less than 120m long requiring bunkering and offshore services.
12. Area Kalba B—For vessels greater than 120m long requiring bunkering and offshore services.

Fujayrah—Vopak Horizon Fujayrah Limited Terminal from SW

Fujayrah—South Breakwater Head

Vessels must obtain permission from the port control before anchoring. Vessels are allowed a maximum stay of 10 days at these anchorages.

Movements of double-banked (side-by-side) vessels and rendezvousing between vessels underway and service boats at the offshore anchorages are prohibited.

Due to water depth, tug/loaded barge combinations, with the exception of tug/ballast barge combinations, are not allowed to anchor in the anchorage areas.

Anchoring is prohibited outside the port limits W of 56°47.0'E.

Directions.—From the vicinity of the Fairway Lighted Buoy, the track leads 1.5 miles NW in the designated approach channel to the pilot boarding position. The S harbor is entered between the heads of the central and S breakwaters; the N harbor is entered 1 mile NE.

Fujayrah—Offshore SPM

Caution.—Vessels making a passage in the vicinity of position 25°12'N, 56°36'E should keep well clear of large tankers carrying out ship-to-ship operations in this area. These vessels, which are operating in pairs and are underway throughout the operation, are difficult to maneuver and should be displaying signals for vessels engaged in special operations.

A fishing zone, the limits of which may best be seen on the chart, fronts the shore S of the port. Commercial vessels are prohibited from entering these zones, except in an emergency.

A prohibited entry area, marked by lighted buoys, lies E of the basin to Oil Terminal 2 and is best seen on the chart.

Khawr Fakkan (25°21'N., 56°23'E.)

World Port Index No. 48263

11.24 Khawr Fakkan (Khor Fakkan), set in the SE portion of a bight in the coast, is a major trans-shipment point for cargo destined for ports around the region.

Winds—Weather.—Prevailing winds are from E to SE. Squalls out of the W to NW, up to force 8, occur occasionally.

Sharjah Ports Home Page (Khawr Fakkan)

http://www.sharjahports.gov.ae/khorfakan.htm

Khorfakkan Container Terminal

http://www.gulftainer.com

Tides—Currents.—The tides rise about 2.7m HW and 0.6m at LW.

Depths—Limitations.—The entrance fairway, buoyed on its W side, has a dredged depth of 16.0m (2009). See the table titled **Khawr Fakkan—Berth Information** for detailed information on the berths in the port.

Aspect.—The bight containing the port lies between Sirat al Khawr, on the S side, and Ras Lulayyah (Ras Luiyah), a rocky point about 2 miles NW. Sirat al Khawr is a peaked islet, 84m high, lying 0.2 mile off a hilly projection, about 80m high.

A breakwater extending about 0.5 mile NW from the N side of this hilly projection forms the port itself.

Khawr Fakkan—Berth Information

Berth	Length	Depth	Remarks
West Side			
No. 1	260m	15.5m	Containers and cruise ships.
No. 2	260m	11.6m	Containers.
No. 3	260m	11.6m	Containers.
No. 4	245m	11.6m	Containers, general cargo, and liquid cargo.
Cement	230m	5.3m	Cement, liquid cargo, service vessels, and fishing boats.
East Side			
No. 5	420m	16.0m	Containers.
No. 6	420m	16.0m	Containers.

A prominent radio tower, 126m high, stands close E of Berth No. 4. A number of conspicuous container cranes are situated along the quay.

Jabal Sidr, a prominent hill, is located about 1.5 miles NW of the root of the breakwater. It is 109m high and surmounted by a conspicuous white palace. This palace has a red roof and is illuminated at night.

A conspicuous hotel, illuminated at night, stands on the foreshore, about 0.3 mile NNE of the palace. A prominent building, with five towers which are floodlit at night, is situated on the foreshore, 1 mile S of the hotel.

A lighted fairway buoy, equipped with a racon, is moored about 1.4 miles NE of the breakwater head.

Regulations.—Vessels should send an ETA and request for pilotage through their agents and Khawr Fakkan Port Control 72 hours, 48 hours, and 24 hours in advance. The message should include the vessel's draft, length overall, and cargo details.

Vessels approaching the port should contact the port control on VHF channel 67 or 16 when 10 miles, 5 miles, and 2 miles from the port.

Khawr Fakkan

Khawr Fakkan

Pilotage.—Pilotage, which is compulsory for all vessels over 150 nrt or greater than 50m long, is available 24 hours. Pilots can be contacted on VHF channels 16 and 67 and board about 2 miles NNE of the breakwater head.

Vessels on arrival must inform Khawr Fakkan Port Control on VHF of the following information:

1. Vessel's name.
2. Date and time of arrival.
3. Anchor position.
4. Flag.
5. Local agent.
6. Gross tonnage.

7. Net tonnage.
8. Last port of call.
9. Next port of call.
10. Purpose of anchorage.

Departing vessels should contact Khawr Fakkan Port Control and provide the date and time of departure.

Vessels entering and leaving the port do so only under direction of Port Control and are to avoid stopping or anchoring in or near the restricted entry area. All other vessels should remain outside the restricted entry area.

Vessels should maintain a watch on VHF channel 16 from 12 hours before their ETA.

For information concerning deep-sea pilotage, see paragraph 11.1.

Contact Information.—Port contact informations can be found in the table titled **Khawr Fakkan—Contact Information**.

Anchorage.—Three anchorage areas, for which permission must be obtained from Khawr Fakkan Port Control prior to anchoring, lie the indicated distance and direction off the harbor entrance:

1. Area A—4 miles ESE. For small craft with prior permission from Khawr Fakkan Port Control.
2. Area B—6 miles ENE. For vessels waiting to berth within Khawr Fakkan and vessels less than 240m long requiring bunkering and offshore services.
3. Area C—9 miles ENE. For vessels over 240m long requiring bunkering and offshore services.

It was reported (1983) that anchorage could be obtained in the vicinity of position 25°30'N, 56°40'E. This area is known locally as Norwegian Bank, although no significant reduction in depths was observed.

Anchoring is prohibited outside the port limits W of 56°49.5'E.

Khawr Fakkan—Contact Information

	Port Authority	Port Control	Harbormaster
Call sign	—	Khawr Fakkan Port Control	—
VHF	—	VHF channels 16 and 67	—
Telephone	971-9-2371444	—	971-9-2387324
Facsimile	971-9-2371555	—	—
Telex	893-89023 SEAGUL EM	—	—
E-mail	shjports@emirates.net.ae	—	—

Caution.—Anchoring is prohibited within territorial waters unless the vessel is waiting to enter Khawr Fakkan or requiring certain facilities from the port. Large tankers are not permitted to anchor within 10 miles of the coast.

Fishing zones, the limits of which may best be seen on the chart, front the shore to the N and S of the port. Commercial vessels are prohibited from entering these zones, except in an emergency.

A restricted entry area, marked by lighted buoys, extends up to 0.5 mile NW, 1.2 miles NNE, and 0.7 mile E, respectively, of the NE side of the container terminal. The restricted entry area includes the approach to Khawr Fakkan from N, the NW and SW coasts of the island of Sirat al Khawr, and the channel between the island and the mainland. Construction is in progress (2005) in the area E of the container terminal.

An explosives dumping ground area (disused 1996), the limits of which may best be seen on the chart, lies centered about 34 miles ESE of Khawr Fakkan.

11.25 From Khawr Fakkan, the coast continues N for 16 miles to Ras Diba. A fishing harbor, protected by breakwaters, lies 1.5 miles NNE of Ras Lulayyah. An airfield is situated about 0.5 mile SW of this harbor.

Zubarah, a small village, stands close N of the fishing harbor. The coast is low, sandy, and bordered by date groves in this vicinity. The mountains stand only a short distance inland.

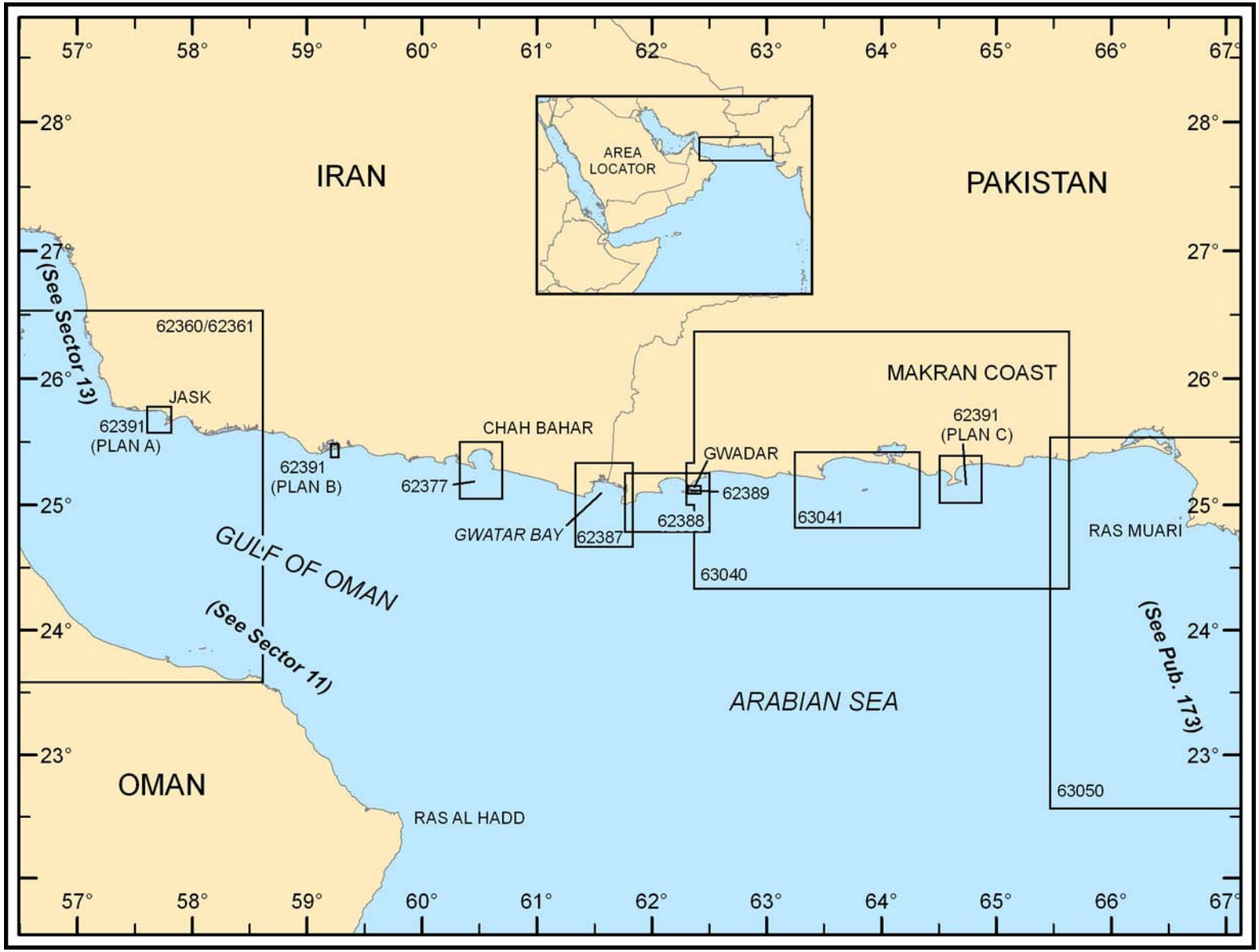
Jazirat Badiyah, an islet, lies close offshore, 3 miles N of Ras Lulayyah. It is 58m high and joined to the coast by a causeway.

Beyond Jazirat Badiyah, the coast becomes more rugged, changing to rocky points separated by many sandy bays, with mountains rising abruptly a short distance from the shore.

Ras Diba (25°36'N., 56°22'E.) is a projecting point formed of moderately high cliffs. A cliffy sand bluff about 1 mile W of the point is conspicuous from N but not from E. An islet lies 0.5 mile NW of Ras Diba.

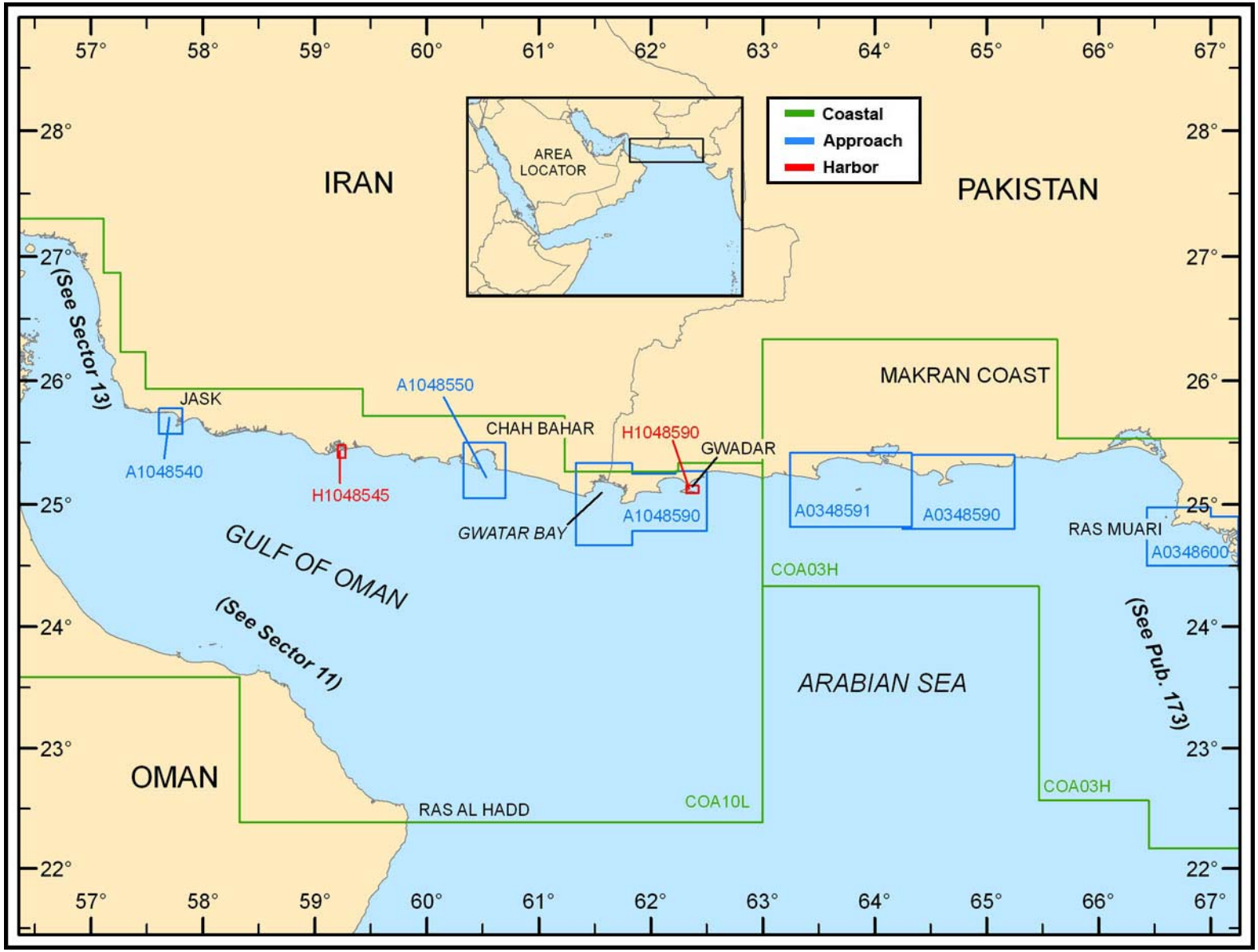
It is reported (2001) that a conspicuous radio mast stands on the point.

Caution.—An anchorage prohibited area, the limits of which may best be seen on the chart, extends up to 12 miles seaward between Khawr Fakkan and Ras Diba.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **12** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 03 and 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 12

PAKISTAN AND THE SOUTH COAST OF IRAN—RAS MUARI TO DAMAGHEH-YE KUH

Plan.—This sector describes the coast of Pakistan and the S coast of Iran between Ras Muari and Damagheh-ye Kuh (Ras al Kuh). The sequence of description is W from Ras Muari.

General Remarks

12.1 Winds—Weather.—The NE winds along the Makran Coast prevail from November to January. The onset of the Southwest Monsoon along this coast in early June brings increasing wind and more cloud, both of which persist until September, though with some annual variation in time and intensity.

Force 8 gales are infrequent but during December and January strong NW winds are common. About 30 per cent of the July monsoons may reach force 6 and occasionally force 8.

High winds are infrequent in the transition periods on the Makran Coast, except during brief squalls. Fog is rare here.

The land and sea breezes on the Makran Coast are prominent during winter. The sea breeze is often persistent, especially during the beginning of the season, that it overcomes the Northeast Monsoon winds during the day.

Depressions from W occasionally pass over Iran toward N India, accompanied by consequent wind shifts, during which S winds will likely be experienced.

During spring, winds over the NW part of the Arabian Sea are most likely SW or W. On the Makran Coast, light to moderate winds prevail, with considerable variation as to direction.

Along the W portion, the first effects of the Southwest Monsoon are usually felt in May.

During the summer season, the winds of the Southwest Monsoon of the Arabian Sea reach the Makran Coast. These winds are deflected by the coast into E or SE winds. However, a branch of this monsoon enters the Gulf of Oman and extends as far as Jask.

The time of the onset of the Southwest Monsoon varies considerably at different places along the Makran Coast. Its full effect is usually felt earlier on the W portion than on the E.

During early June, the Southwest Monsoon winds, which have already begun along the W Makran Coast, extend E and are prevalent along the entire coast. On the E coast, W to SW winds become fully established in July and blow with moderate strength.

Over the open sea off the Makran Coast, winds during June and July average force 5 or 6. Winds may reach gale force in occasional squalls.

During August there is a marked decrease in wind force, and in September there is a general recession of the Southwest Monsoon over the entire area.

Remnants of the monsoon may last along the W coast until the end of October.

After the withdrawal of the Southwest Monsoon and before the beginning of the Northeast Monsoon, which usually become established in November, winds are light and variable.

Tides—Currents.—The current pattern over the whole of the Arabian Sea varies continually. From January to March, these currents have a common tendency to set towards the W and NW.

Near the coast of Pakistan, a current setting to the SE becomes evident in late January or February and gains in constancy and strength during the next few months.

From February through mid-April, the transition period of the Northeast Monsoon and Southwest Monsoon, the ocean currents are extremely variable.

By the end of April, S and SW winds prevail and give rise to an E and SE drift that builds up to a maximum in July and August and decreases during September.

During November a general clockwise circulation is set up in the Arabian Sea as a result of the Northeast Monsoon.

In December, the NE winds prevail over the sea and the period of W drift begins. Tidal currents in the N part of the Arabian Sea attain a velocity of 1.5 knots.

Tides along the Makran Coast are diurnal, with a range of about 2m.

Aspect.—The coast between Ras Muari and the Pakistan-Iran border consists of long stretches of sandy shore backed by valleys or coastal plains, but these low-lying shores are interrupted in a number of places by stretches of cliffs backed by hills and mountains.

Farther inland are segments of mountain ranges, with elevations up to 915 to 1,220m, lying approximately 10 miles from the sea. The coast is largely uninhabited, there being only six or seven small coastal villages and no developed ports.

The seaward approaches to this coast are, in general, clear, with the exception of a group of islets, rocks, and shoals centering on Astola Island. Aside from the Astola Island group, there are only a few scattered dangers, most of which lie closer inshore.

The coast W from the Pakistan-Iran border is a low, almost barren, sandy coastal plain varying from less than 1 mile to about 50 miles wide, but is generally 2 to 20 miles wide; detached hill masses and tablelands are scattered along the plain. Many intermittent streams occur, with marshy areas and mangrove swamps near the coast in places. Spurs of coastal mountain ranges extend to within about 1 to 5 miles of the coast in places; the coastal range reaches heights of about 457 to 915m within 25 miles of the shore.

The offshore approaches are deep and generally clear. There are some scattered shoal patches near the coast in widely separated places. The shore is fringed in several locations by a sand or mud shoal extending up to about 3 miles offshore.

Depths—Limitations.—From a position about 10 miles SW of Ras Muari, the 50m curve follows the general trend of the coast to a position about 3 miles SE of Ras Nuh, the E extremity of Gwadar Head. All dangers are contained within this curve. Outside the 40m curve, the depths increase rapidly to more than 200m.

Because of volcanic disturbances long ago, vessels navigating along the N side of the Arabian Sea, between 66°00'E, and

61°10'E, are advised to keep outside the 50m curve. If it is necessary to navigate close to land, vessels should do so with caution, as the charted depths are reported to be unreliable.

Caution.—It has been reported (2007) that unannounced missile firing exercises may be conducted on the N side of the Gulf of Oman in an area bounded by lines joining the following positions:

a. 25°38'N, 58°00'E.
b. 25°18'N, 59°50'E.
c. 24°50'N, 59°50'E.
d. 25°00'N, 57°45'E.

Ras Muari to Gwadar Head

12.2 Ras Muari (Cape Monze) (24°50'N., 66°40'E.), rising to an elevation of 140m about 0.5 mile E, is a bluff sloping headland forming the SW extremity of the Jhil Range (Lakki Hills). This range, extending about 10 miles NE from Ras Muari, is a ridge with a nearly level crest, but it has some prominent hummocks, the highest being 237m. A shoal spit, with depths of less than 18m, extends about 4 miles SW from Ras Muari.

A light is shown from a prominent tower, 51m high, standing about 1 mile SE of the W end of the cape.

Nancowry Shoal, with a least depth of 10m, lies 2 miles SW of Ras Muari.

Beauchamp Reef (24°50'N., 66°35'E.), a ridge of sand and gravel with a least depth of 8.1m, lies 4 miles W of Ras Muari.

Sonmiani Bay (25°12'N., 66°38'E.) is entered between Ras Muari and Ras Kachari, about 60 miles NW. The shore of the bay for about 20 miles N of Ras Muari is indented between rocky points; then NW and W it is sandy and covered with low jungle.

The bay fronts a plain about 35 miles wide that is between the **Pab Mountains** (25°10'N., 66°40'E.) and the **Haro Range** (25°30'N., 66°05'E.), both over 914m high. A river, flowing through a swamp before entering the sea, drains the plain.

The **Hab River** (24°55'N., 66°40'E.), flowing into the sea about 4 miles NNE of Ras Muari, is salty for several miles within its entrance, except during freshets. A sandy spit extends from the N side nearly across the river entrance. The entrance channel of the river is tidal and nearly dries; it has a depth of 2.7m at HW and breaks across the entrance.

12.3 Churma Island (24°52'N., 66°36'E.), 4.5 miles NW of Ras Muari, is steep-to, barren, and uninhabited. From the S, its steep light-colored hills appear to rise to a peak, but from the W, the island appears flat-topped, with sloping sides. It is used as a bombardment target. There is a least depth of about 7.6m between the island and the mainland.

Except for sheltering small craft during the Southwest Monsoon, the island affords very little protection.

Khalifa Point (24°57'N., 66°40'E.), low and sandy, is fronted by shoal patches lying as far as 1.5 miles offshore. A bank, with depths less than 5.5m, lies up to 2 miles offshore for about 7 miles N of Khalifa Point. Above and below-water rocks lie on this bank.

Kaio (25°01'N., 66°41'E.), a rocky islet, lies on foul ground; a detached drying rock lies almost 1 mile NW of the islet. The coast for 3 miles N of Kaio is hilly; then to the entrance of Sonmiani Harbor, 22 miles NNW of Kaio, the coast consists of sand hillocks partially covered with grass and bushes.

Caution.—An explosives dumping area and a disused explosives dumping area, which may best be seen on the chart, lie, respectively, about 95 miles SW and 56 miles WSW of Ras Muari.

12.4 Sonmiani Harbor (25°25'N., 66°32'E.), used only by local craft, is entered between two sandy points. The harbor consists of a lagoon, which is generally shallow, with partially drying sand banks.

A shoal flat, drying in places, extends across the harbor entrance, forming a bar with a maximum depth of 1.5m. During the Southwest Monsoon, seas break heavily across the entrance.

The preferred channel is close to the E shore of the lagoon; it has a depth of 9.1m, decreasing considerably within 3 miles.

A vast swamp extending NW of the harbor to the foot of the **Haro Range** (25°40'N., 66°10'E.) is fed by a river discharging into its N part during heavy rains. The spring range of tide in the harbor is about 2.5m; the mean range is about 2m.

Anchorage can be taken outside the bar, in a depth not less than 9.1m, with Churma Island bearing about 173°.

The **Phor River** (25°25'N., 65°55'E.) lies about 28 miles W of Sonmiani Harbor; the intervening coast is low and interspersed with sand hills. Anchorage can be taken W of the river, in a depth of about 9m.

Chandra Gup (25°27'N., 65°52'E.), a landmark consisting of several white-colored conical hillocks about 104m high, stands about 9 miles W of the Phor River, at the E and of a detached group of low hills.

Ras Kachari (25°22'N., 65°44'E.) is located at the S end of some low cliffs, inland of which rises the detached group of low hills. The coast between Ras Kachari and Ras Malan, 30 miles W, appears from seaward as a succession of rugged mountains, light-colored, with lower whitish clay peaks known as "shur" fronting them.

Jazirat Chahardam (25°18'N., 65°38'E.) consists of some rocks, up to 9m, high lying off the coast. Boats can land inside the rocks. Between the rocks and **Jabal Hab** (25°20'N., 65°27'E.), 12 miles W, a ridge of high hills slopes down to the coast.

The Hingol River, entered 2 miles E of Jabal Hab, is used by small craft with a draft up to 1.8m. The river bed, drying in places, winds through Jabal Hab. The coast W of Jabal Hab is formed of low sand hills.

12.5 Ras Malan (25°19'N., 65°12'E.) is a prominent bluff, with a steep face on its seaward side and a level summit.

Clay cliffs rise abruptly from the sea to the summit of the bluff, 625m high, about 4 miles N. From seaward, the bluff appears as a long light-colored tableland ending in cliffs.

Anchorage can be taken NE of Ras Malan, in a depth of 7.3m, about 1 mile offshore with **Gurangatti** (25°36'N., 65°15'E.) bearing 000° and Ras Malan bearing 230°.

Gurangatti is a remarkable square-topped mountain, about 1,264m high, resembling a castle with bastions; its sides appear nearly vertical.

Jabal Hinglaj (25°30'N., 65°25'E.), wedge-shaped, rises 1,109m about 20 miles W of Ras Kachari.

Ras Ormara (25°10'N., 64°36'E.) is the SW point of a high peninsula which has cliffs on all sides and, when seen from S, appears wedge-shaped. The peninsula is accessible only from the S, where several valleys break the line of cliffs.

A sandy isthmus connects the middle of the peninsula with the mainland. The coast for 19 miles W of Ras Malan is cliffy, then to the isthmus it is sandy and low.

A river runs into a lagoon fronted by a bar about 6 miles W of Ras Malan.

Chandra Kup (25°21'N., 64°40'E.), a conspicuous, white cone with a mud crater, stands about 4 miles inland and N of Ormara. In certain lights, the cone may appear dark; strong winds may obscure it with blown sand. Several small, white mud volcanoes rise about 2 miles E of Chandra Kup.

Ormara (25°12'N., 64°38'E.), a village located on the SE side of the isthmus, consists of some stone houses, mosques, and mat huts. The village is the center of a shark-fishing industry. A conspicuous radio mast stands at the W side of Ormara. High sand dunes appear N of the village. A light is shown at the E end of Ormara.

12.6 Rodrigues Shoal (25°11'N., 64°45'E.), consisting of two rocky ridges with a least depth of 4.9m, are separated by a gully. A passage between the shoal and peninsula W has been swept to a depth of 8.2m. Depths from 5 to 10m extend about 11 miles E from East Point. Depths from 1 to 3.2m are charted up to 2 miles S of the coast between Ras Ormara and East Point. A dangerous wreck lies 1.5 miles S of the E extremity of the shoal.

Dimi Zarr (East Bay) (25°14'N., 64°43'E.), lying E of the isthmus of Ormara, is the usual anchorage in the area. Depths shoal regularly in the bay, which has a bottom of mud and sand, except inshore.

Dimi Zarr is open to E winds, which may blow strongly at least once during the Southwest Monsoon, and are accompanied by rain. Tidal currents are weak in the bay and set NE and SW, following the curve of the land.

During the monsoon season, and at any time after April, a long swell may round the E end of Ras Ormara, raising a surf on the beach and causing vessels at anchor to roll heavily.

Landing is best effected between Ormara and the sand dunes N of the village.

Anchorage can be taken, in 7.3m, with the E point of the Ormara peninsula bearing 177°, distant 2.5 miles, and the radio mast bearing 250°. Light draft vessels can anchor, in 5.5m, closer inshore. Chandra Kup, bearing 345°, leads into the bay through the swept passage between Ras Ormara and Rodrigues Shoal.

It has been reported (2002) that a Pakistani naval base is being developed in the East Bay.

12.7 Padi Zarr (West Bay) (25°14'N., 64°32'E.), a bay open to W and SW weather, provides shelter and anchorage during E winds, but landing ashore is more difficult than it is in Dimi Zarr.

Anchorage can be taken, in a depth of 5.5m, with the W end of Ras Ormara bearing about 180°.

Ras Sakanni (25°13'N., 64°26'E.) is the NW entrance point of Padi Zarr. From this point W, the coast is bordered by continuous light-colored cliffs which form the sea face of the Kangar Hills; a wide plain lies between the Kangar Hills and the Taalo Hills to the NE.

Between **Ras Basol** (25°17'N., 64°14'E.), at the W end of the cliffs, and **Khor Kalmat** (25°20'N., 64°04'E.), a large inlet, is a shallow bight with a low, sandy shore. A bar, with a depth of 2m and on which the sea breaks, fronts the entrance of the inlet.

Tidal currents are strong at the entrance and entry is difficult because of rocks lying 1 mile outside the bar.

Local craft, with a draft of 2.7m, are reported to enter the inlet through an E channel over the bar. There are depths over 7.5m in the inlet after clearing the bar.

12.8 The Makran Coast extends W from Khor Kalmat for nearly 140 miles to the frontier of Iran. Depths off this coast may be unreliable due to volcanic disturbances. For 12 miles W of Khor Kalmat, the coast is low, with depths of, less than 5.5m existing as far as 4 miles offshore. Farther W the coast rises and is backed by continuous ridges which extend to the barren N shore of Pasni Bay, where they are 300m high.

Navigation along this part of the coast is impeded by the land being obscured by dust haze, which is especially prominent from April to June. Vessels should sound continuously and remain in depths greater than 20m.

Astola Island (25°06'N., 63°50'E.) is table-topped and bordered by steep cliffs. There is a small boat harbor near the NW corner of this uninhabited island, which is visited only by religious people and fishermen during the Northeast Monsoon. A light is shown from the island. Sail Rock (Gurab) lies 0.5 mile S of the island. Passage between the island and rock is not recommended.

Caution.—Three newly-emerged islets were been reported (2013) to lie about 20 miles E of Astola Island; these islets have since submerged and are marked by shallow depths in the following positions:

1. Position 25°09'00.0"N, 64°15'24.0"E.—depth of 14.5m.
2. Position 25°10'19.8"N, 64°13'00.0"E.—depth of 13.0m.
3. Position 25°10'18.0"N, 64°12'18.0"E.—depth of 13.0m

Additional shoals have been reported in the vicinity of these positions.

Webb Bank, about 5 miles SSE of Astola Island, is a narrow rocky ridge, with a least depth of 5.7m. Breakers are reported between the bank and Sail Rock and at least 6 miles W of the bank.

The sea breaks on Webb Bank during the Southwest Monsoon and vessels approaching Pasni from SE should not close Astola Island and its adjacent dangers within 6 miles; any closer approach must rely on local knowledge.

12.9 Pasni (25°15'N., 63°28'E.), a small port with several thousand inhabitants, is located on the W shore of Pasni Bay, 3 miles N of **Ras Jaddi** (25°14'N., 63°30'E.), the W entrance point of the bay. The coast in the area is low, sandy, and without vegetation.

Landmarks consist of high white sand dunes SW of town, a conspicuous radio mast about 1 mile N of town, and a prominent white building about 0.5 mile S of the mast.

Gwadar Deep Water Port

Vessels on passage from the Persian Gulf will call occasionally. There are no landing facilities. Shadi Kaur is a large shallow creek entered 1.5 miles N of Pasni. Drying banks encumber the mouth of the creek, which can be entered by small craft at HW.

Jabal Zarrin (25°12'N., 63°30'E.), a conspicuous, high, brownish-colored hill shaped like a barn when seen from E or W, appears from the S as a long, notched ridge with sloping ends. In the bay between Ras Jaddi and Jabal Zarrin, there is a group of clay hills of fantastic shape which rise about 0.1 mile inland. A light is shown on Jabal Zarrin.

Anchorage can be taken, in a depth of 6.4m, sand, about 2 miles E of Pasni, with Ras Jaddi bearing 194°, or farther offshore, in a depth of 7m. During the Southwest Monsoon, a heavy ground swell occurs in Pasni Bay, which causes a considerable surf to break along the shores.

Ras Shamal Bandar (25°15'N., 63°06'E.), about 23 miles W of Jabal Zarrin, is the bluff W point of a bay bound by a low shore and fronted by a coastal bank. Small vessels can find shelter from W winds in the W part of the bay, but should not close the shore in a depth less than 11m.

12.10 Ras Kappar (25°13'N., 62°47'E.), about 18 miles W of Ras Shamal Bandar, is the S end of a table-topped hill, with bluff extremities about 211m high.

The coast between Ras Kappar and Jabal Sur, about 15 miles W, is sandy, rising to low hills with clay peaks.

Jabal Sur (25°13'N., 62°29'E.) is a wedge-shaped clay hill rising steeply, with a vertical cliff at its E end and a low isthmus connecting it with the mainland. This part of the coast is backed inland by a mountain range which ends abruptly at Gare-Kuh. This feature takes the form of two great vertical steps descending from a height of 450m and is a good landmark.

Jabal-i-Mehdi (25°13'N., 62°25'E.), a precipitous white clay ridge with vertical cliffs on its S side, rises abruptly from the plain at the root of the isthmus, about 3 miles W of Jabal Sur. A double peak is conspicuous about 2 miles W of this remarkable ridge.

Gwadar East Bay (25°10'N., 62°23'E.) is entered between Jabal Sur and **Ras Nuh** (25°05'N., 62°24'E.), a high cliff at the E end of Jumbel Kuh, a peninsula formed of high, white bluffs, prominent from the E and appearing as a wedge-shaped island. The W side of the bay is formed by a low sandy isthmus connecting the peninsula and mainland. A temple stands close to the cliff. Tidal currents in the bay are imperceptible.

Courtesy of Gwadar Port Authority

Gwadar Range Lights, with Batel Hill in the background

12.11 Gwadar (25°08'N., 62°18'E.) (World Port Index No. 48590) is a town near the S end of the isthmus. The port consists of Gwadar Deep Water Port, which handles general, bulk, container, and ro-ro cargo, and Gwadar Mini Port, which is used mainly by fishing vessels.

Future plans include the construction of three container terminals, with a total berthing length of about 2,000m; a bulk cargo terminal; a grain terminal, with a berthing length of 300m; a ro-ro/general cargo terminal, with a berthing length of 200m; and a two-berth oil terminal.

Gwadar Ports Authority Home Page

http://www.gwadarport.gov.pk

PSA Gwadar International Terminals Home Page

http://www.psagwadar.com

Depths—Limitations.—Gwadar Deep Water Port consists of three multi-purpose berths, with a total length of 602m and alongside depths of 14.5m, located on the N side of Jumbel Kuh. The berths are approached through a 4,500m-long channel, marked by lighted buoys, which is dredged to a depth of 13.8m. A turning basin with a diameter of 500m, also dredged to a depth of 13.8m, lies close NE of the berths.

Vessels up to 76,000 dwt, with a maximum draft of 12.5m, a maximum length of 300m, and a maximum beam of 33m, can be accommodated.

Gwadar Mini Port consists of a 410m-long jetty, with alongside depths of 3.5m. The approach channel has been dredged to a depth of 3.5m and is marked by beacons.

Aspect.—Wali's Fort, white and square, with a tall flagstaff at its SE corner, stands about 1.4 miles NNW of Gwadar Mini Port.

Prominent water tanks are located close W of the root of Gwadar Mini Port and about 0.5 mile W of Ras Nuh.

Batel Hill, 142m high, stands close W of the port facilities. The hill slopes down to the cliffs which face the peninsula on all sides.

Pilotage.—Pilotage is compulsory for all vessels of 200 nrt and over. Pilotage should be ordered 24 hours in advance. The pilot boards 1 mile E of Fairway Lighted Buoy.

Regulations.—Vessels should send their initial ETA, via their agent, no less than 72 hours prior to arrival. The ETA notification should include the following information:

1. Vessel name, call sign, and IMO number.
2. Flag.
3. Type of vessel.
4. Purpose of visit.
5. Local agent.
6. Nature of cargo.
7. Length overall.
8. Beam.

9. Maximum draft.
10. Gross tonnage and nrt.
11. Master's name.
12. Number of crew.
13. Last port-of-call.
14. Geared (yes/no).
15. Services required.

The ETA should be updated, via the agent, not less than 48 hours in advance, with a final confirmation sent 24 hours prior to arrival. Updates may be sent to the port via e-mail.

Vessels with an loa greater than 250m but less than 300m should have an operational bow thruster, otherwise the use of three tugs is mandatory.

Fishing and anchoring are prohibited in the designated charted areas surrounding the port.

Contact Information.—The port office can be contacted, as follows:

1. Call sign: PSA Gwadar
2. VHF: VHF channels 12 and 16
3. Facsimile: 92-21-35611962
4. E-mail: portcontrol@psagwadar.com

Anchorage.—Anchorage can be taken in the charted anchorage area, with charted depths of 15.3 to 26.0m, in Gwadar East Bay.

During the Southwest Monsoon season, a ground swell setting around Ras Nuh can cause vessels at anchor to roll heavily.

Directions.—If approaching the anchorage from the E, keep in depths of 20 to 25m until Ras Nuh is sighted; even if the weather is hazy, it should hardly be possible to miss seeing the cliffy peninsula.

If approaching the anchorage from W, it is inadvisable, especially in hazy weather, to enter depths less than 22m until Ras Nuh bears less than 350°.

Caution.—Vessels should note that the lighted buoys marking the approach channel to Gwadar Deep Water Port do not indicate the limits of the dredged area of the channel.

The approach channels to the two berthing facilities are under continuous maintenance dredging. Vessels should be aware that silting is liable to occur and local authorities should be contacted for the latest depths.

In hazy weather, if not bound for Gwadar, keep in depths greater than 37m. At night, watch out for fishing vessels with their nets out.

A rocky spit extending 1 mile S from Ras Nuh is marked by a ripple; during the Southwest Monsoon, it is marked by breakers.

A restricted area surrounds the Pakistani naval facility at Akram Jetty (25°06.3'N., 62°22.6'E.).

12.12 Gwadar West Bay (25°10'N., 62°16'E.) is entered between **Ras Kamaiti** (25°06'N., 62°16'E.) and **Ras Pishukan** (25°06'N., 62°05'E.). The bay recedes about 8 miles.

The shores of the bay are low, except near Toshdan Kuh, a range of low hills in the NW part of the bay. Ras Pishukan consists of narrow rocky cliffs, with a rocky spit on which the sea breaks, extending about 0.3 mile SE.

Anchorage can be taken in the bay, in a depth of 7.3m, with Ras Kamiti bearing 198°, distant 1.5 miles, or on the W side of the bay with Ras Pishukan bearing 182°, distant 3 miles, in the same depth.

Caution.—An newly-emerged islet, caused by an earthquake, has been reported (2013) to lie about 3.75 miles N of Ras Kamaiti. The new islet, which has a height of about 10m, is about 50m long and 20m wide. Vessels should navigate with caution in this area as shallower depths than charted can be expected.

Bandar Ganz (25°05'N., 61°53'E.) is entered between Ras Pishukan and Ras Ganz, about 9 miles WSW.

Anchorage can be taken by small vessels during W winds, about 1 mile offshore, in a depth of about 6m.

Ras Ganz (25°01'N., 61°50'E.) is the light-colored bluff E of a promontory which forms a very good landmark from the W. The village of Ganz is located 4 miles N of the point.

Katagar (25°04'N., 61°48'E.) is a high promontory which separates Bandar Ganz from Gwatar Bay to the W. Its S side is an unbroken line of cliffs, with sandy beaches at its foot.

12.13 Ras Jiwani (25°01'N., 61°43'E.) is the W point of Katagar. Remarkable hills with rugged peaks back the coast and extend nearly to the **Dasht Kaur** (25°10'N., 61°40'E.). The bottom off Katagar is very uneven in depths of less than 20m. An aero light, with a radiobeacon, is shown 5 miles NE of Ras Jiwani.

Gwatar Bay (Khalij-e Gavater) (25°05'N., 61°35'E.) is entered between Ras Jiwani and Damagheh-ye Pasa Bandar, a point about 15 miles WNW. The gradual decrease of soundings toward the coast S of the bay is a useful guide to vessels approaching at night or in thick weather.

The water in the bay and its approaches becomes discolored after heavy rains and there is much driftwood. Depths and dangers are best seen on the chart. Landing is good, even during the Southwest Monsoon, in a bay 1.5 miles N of the W end of Ras Jiwani and 1 mile S of the village of Jiwani.

There is a white rectangular stone fort close inland of the head of the bay, which has low shores backed by extensive mangrove swamps.

Dasht Kaur, the largest on the Makran Coast, empties into the NE part of the bay. A bar, on which the sea breaks at times, lies in the river mouth. The river is shallow except during flood.

Damagheh-ye Pasa Bandar (25°04'N., 61°25'E.), the W entrance point of Gwatar Bay, is a cliff at the E end of a low ridge. Two islets lie on foul ground about 2 miles E of this point, which is marked by a light.

Kuh-e Pushat (Castle Hill) (25°06'N., 61°23'E.) is a high square rocky hill lying about 4 miles N of Damagheh-ye Pasa Bandar. Its summit looks like a fort, but the hill does not show until bearing less than 340°.

The little village of **Gavater** (25°09'N., 61°30'E.) has a prominent white fort with two towers on its W side.

Anchorage can be taken in a small bay N of Damagheh-ye Pasa Bandar, in depths of 2.7 to 5.5m, mud.

12.14 Damagheh-ye Zarin Sar (Ras Bris) (25°08'N., 61°10'E.) rises at the W end of a range of conspicuous white cliffs which mostly backs the coast W of Damagheh-ye Pas Bandar. The coast is cliffy and fringed with a shoal which extends about 1 mile offshore in the vicinity of Damagheh-ye Zarin Sar.

From this point W, the coast consists of rocky hills and cliffs decreasing in height towards Damaghe-ye Chah Bahar.

Inland of these hills and cliffs is a vast plain which extends many miles to the W. Natural landmarks include Siah Kuh, a dark round hill about 233m high, with sheer cliffs on its seaward side.

Khaki Kuh (25°21'N., 60°55'E.) is a mountain range about 610m high, extending E and W with a vertical S face and deeply indented crest. This range, composed of white clay, is very conspicuous in the sunlight. From the W, the range shows a double peak with a bluff SE.

12.15 Khalij-e Chah Bahar (25°20'N., 60°32'E.) is entered between Damaghe-ye Chah Bahar and Ras Puzm, about 8 miles W. A mountain range parallels the coast within the head of the bay. Quoin, a 690m peak, and a sharp spiked peak about 10 miles W, are conspicuous from seaward.

A radio mast, standing at an elevation of 210m about 2 miles N of Chah Bahar, is very conspicuous.

Another conspicuous mast, 54m high, stands on the low ground about 1 mile ENE of Damaghe-ye Chah Bahar. A group of four masts, standing about 2 miles inland from the head of the bay, is also conspicuous.

It was reported (1998) that another prominent radio mast, 189m high, stands 0.4 mile inland at the head of the bay.

Damaghe-ye Chah Bahar (25°17'N., 60°36'E.) is a low rocky point surmounted by a tomb and some flat-topped buildings. A light is shown from a lattice tower, 9m high, standing on the point.

The point is fronted by a shoal which is marked by a lighted buoy moored about 0.8 mile W of the light.

Ras Puzm (Damaghe-ye Puzm) (25°17'N., 60°28'E.) is the end of a promontory, the sides of which are formed by low cliffs.

Konarak (25°21'N., 60°24'E.), a village, is located on the W shore of the bay.

12.16 Chah Bahar (Chabahar) (25°17'N., 60°38'E.) (World Port Index No. 48550) is a town with limited facilities but a climate healthful to Europeans due to the prevalence of SSE winds.

Winds—Weather.—The SSE winds cause a heavy sea to break on the shores around the bay except at the town, which is well-sheltered. From about mid-June to October, the harbor is closed due to swells from the Southwest Monsoon.

Depths—Limitations.—Shahid Beheshty Jetty extends about 0.5 mile N from the shore. Beach Jetty (Kalantari Jetty), close E of Shahid Beheshty Jetty, extends 0.6 mile NW from the shore and provides berths for small craft and barges, as well as container vessels. Berth information is contained in the accompanying table titled **Chah Bahar—Berth Information**.

A third jetty, which is approached by a channel marked by lighted buoys, extends about 0.5 mile W from the shore from a point about 1.5 miles NE of the root of Beach Jetty (Kalantari Jetty).

Aspect.—Besides the radio masts mentioned above in paragraph 12.15, no landmarks are particularly prominent. A mosque, with a somewhat prominent minaret, is located about 2 miles ENE of Damaghe-ye Chah Bahar.

A lighted buoy is moored near the head of Shahid Beheshty Jetty.

Pilotage.—Pilotage is compulsory for vessels anchoring or berthing. Pilots board in the designated anchorage area in the middle of the bay.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Chah Bahar Port Radio
2. VHF: VHF channels 13, 14, 16, 18, 24, and 25
3. Telephone: 98-545-2221511
98-545-2221512
98-545-2221513
98-545-2221514
4. Facsimile: 98-545-2221414
5. E-mail: info@cpa.ir

Anchorage.—A designated anchorage area, the limits of which may best be seen on the chart, lies in the middle of the bay, close within the entrance points, and has depths of 10.3 to 12.1m.

Another designated anchorage area, the limits of which may best be seen on the chart, is located WSW of Damaghe-ye Chah Bahar.

Anchorage can be taken by small vessels, in a depth of 7m, sand, about 1 mile NNW of Damaghe-ye Chah Bahar. Local craft can anchor, in a depth of 4m, about 0.5 mile off the town.

During the Southwest Monsoon (early June to late October) a heavy SSE swell rolls into the bay, but sheltered anchorage can be taken, with no swell, about 4 miles E of Konarak.

Chah Bahar—Berth Information

Berth	Length	Maximum draft	Remarks
Shahid Beheshty Jetty			
No. 1	150m	8.3m	General cargo and containers. Can accommodate vessels up to 25,000 dwt.
No. 2	150m	8.3m	Can accommodate tankers up to 25,000 dwt.
No. 3	150m	9.0m	General cargo and containers. Can accommodate vessels up to 25,000 dwt.
No. 4	150m	9.0m	General cargo and containers. Can accommodate vessels up to 25,000 dwt.

Chah Bahar—Berth Information			
Berth	**Length**	**Maximum draft**	**Remarks**
No. 5	262m	11.0m	Multipurpose. Being dredged to 16m in order to accommodate vessels up to 100,000 dwt.
Beach Jetty (Kalantari Jetty)			
No. 5	175m	10.3m	General cargo and containers. Can accommodate vessels up to 40,000 dwt.

12.17 Ras-e Rashedi (25°20'N., 60°12'E.) is the E extremity of an inaccessible table-topped promontory.

The coast between Ras Puzm and **Ras-e Puzm** (25°20'N., 60°17'E.), the E entrance point of Klalij-e Puzm, a small bay, is cliffy. Ras-e Rashedi is the W entrance point of the bay. The shores of the bay are low and sandy. Depths of less than 11m exist as far as 2.5 miles off the S side of Ras-e Rashedi.

Baklang (25°17'N., 60°13'E.), a steep-to rock with a depth of 0.8m, lies 2.5 miles SE of Ras-e Rashedi. When covered, the rock cannot be seen in calm weather, and should not be approached closer than depths of 30m at night. Approximately 0.5 mile to the SE of Baklang Rock is a shoal with a least depth of 8.3m.

Anchorage can be taken, in 7.3m, off Puzm, a fishing village on the E side of Khalij-e Puzm, close N of the point. Anchorage may also be taken in the center of Khalij-e Puzm, in a depth of 8m, sand.

Ras-e Tang (25°20'N., 59°52'E.) is a rocky promontory extending about 1 mile offshore and connected to the shore by a sandy isthmus. Vessels should not approach the point in depths of less than 20m, as soundings give little warning of the proximity of the point.

A 4m patch lies about 0.7 mile SE of the promontory's E end. Shoal patches, with depths of 2.4, 4, and 4.5m, lie respectively 1.5, 2, and 2.5 miles W of the promontory's W end. There is a bay between this point and Ras-e Rashedi; a village is located about 1 mile N of Ras-e Tang.

A group of brown hills, about 4 miles E of the latter point, make a good landmark. Kuh-e Kalat, a great range of white clay cliffs with a prominent outline, extends 22 miles WNW of Ras-e Tang. A 200m sheer cliff, which shows up well from S and SW, rises about 4 miles from the E end of Kuh-e Kalat.

Several high conical peaks rising NE and SW of **Ras-e Maki** (25°23'N., 59°35'E.) are excellent landmarks.

12.18 Khor Rapch (Khor Rabch) (25°27'N., 59°15'E.) is the mouth of a large tidal inlet encumbered with mud and sand flats. The entrance has very low sandhills on either side.

Anchorage may be obtained, in a depth of 8m, sand, about 3 miles S of the entrance.

Ras-e Meydani (25°23'N., 59°05'E.) is composed of white cliffs extending W for 3 miles. The terrain inland is a great plain extending W for about 60 miles. The coast W of Ras-e Meydani is very low, sandy and intersected by several streams, some of which are navigable by small craft at various stages of the tide. Local knowledge is necessary.

A lighted buoy, whose position is unreliable, marks the outer edge of the coastal bank which extends at least 3 miles off Ras-e Meydani. Care should be exercised when approaching this coastal bank, as the soundings in the area give little warning of its existence.

Ras-e Sadij (Damagheh-ye Sadich) (25°33'N., 58°41'E.) is a coastal point near which a river flows through swampy ground into a tidal creek fronted by a shallow bar. A range of bare, white hills of sand extends 6 miles W along the coast from Ras-e Sadij.

The low coast W of Ras-e Sadij is intersected by several inlets, off which small craft can anchor with local knowledge.

Mountain ranges rising inland are good landmarks and are best seen on the chart.

Guh Kuh (26°06'N., 58°25'E.), 36 miles NNW of Ras-e Sadij, rises to a height of 1,900m and appears to be nearly detached from the neighboring mountains. When seen from SE, its E side shows as a great bluff, but when seen from W, its summit appears round.

Anchorage can be taken off the mouth of the **Rud-e Gabrig** (25°36'N., 58°20'E.), in a depth of 9.1m, 2 miles offshore.

Ras-e Jagin (25°34'N., 58°07'E.) is a very low and sandy point. Swampy terrain and a low plain extend inland to low hills, so that the point is difficult to identify offshore. A drying spit extends at least 0.5 mile SW of the point.

Deep water lies 1 mile seaward of the spit, but depths in the entire area fluctuate and extreme caution is necessary.

12.19 Khalij-e Sharqi-ye Jask (East Jask Bay) (25°39'N., 57°54'E.) is entered between Ras-e Jagin and Ras-e Jask, about 18 miles WNW. The NE shore of the bay is low and fronted by sandy banks extending 0.5 mile offshore. The NW shore is rocky and level, with a sandy foreshore and low cliffs and ledges in places. Hills come to within about 1 mile of the head of the bay and terminate in a ridge of high, white cliffs. The best landing place is about 0.5 mile ENE of Ras-e Jask.

Anchorage, somewhat sheltered from W winds, can be taken, in depths of 11 to 14m, close off the NW shore of the bay, which is open SE and NE. The bay has a very light ground swell. During the Southwest Monsoon, the surf on the shore is heavy.

Ras-e Jask (25°38'N., 57°46'E.), marked by a light, is the end of a peninsula projecting SW from the coast. Two white-topped radar domes and several radio masts, 45m high, standing close NNE of Ras-e Jask are conspicuous. Two red and white checkered water towers, 50m high, standing 2.5 miles NE of Ras-e Jask, make good landmarks from about 5 miles offshore.

Gahha Shoal (25°42'N., 57°29'E.), a small detached steep-to patch, with a least depth of 2.4m, lies 3 miles offshore and

16 miles WNW of Ras-e Jask. An isolated shoal, with a depth of 18.2m, lies about 3 miles S of Gahha Shoal.

Vessels are cautioned not to approach the coast in depths of less than 50m between Ras-e Jask and Ras al Kuh, due to the presence of Gahha Shoal and other obstructions mentioned above.

Kuh-e Gikan (Jebel Dangiya) (25°50'N., 57°43'E.), a detached mountain peak, makes an excellent landmark and is radar conspicuous when approaching the peninsula from SE.

Par Kuh (25°56'N., 57°40'E.), rising to 920m, is separated from Kuh-e Gikan by a gap with precipitous cliffs. Par Kuh is serrated in outline and has a long slope W; on its S slope is a natural pillar of rock. This mountain is a conspicuous landmark.

The W side of this mountain forms a great bluff which shows up well except from the W. When approaching the peninsula, it appears like an island on radar until within 10 miles.

Jask (25°38'N., 57°46'E.) (World Port Index No. 48540), a small town, extends along the shore of the peninsula. A breakwater extends 0.3 mile NNW from the coast about 0.5 mile NNE of Ras-e Jask. A berth, 150m long, is situated on the E side of this structure. There is a naval facility in the town.

Anchorage, partially sheltered from S winds but open to the shamal, can be taken, in a depth of 7m, about 1 mile NNW of Ras-e Jask. Larger vessels can anchor, in a depth of 8m, mud, about 2.3 miles NW of Ras-e Jask.

Caution.—A submarine cable, which may best be seen on the chart, extends seaward from a point on the S shore of the peninsula, close ENE of Ras-e Jask.

Submarines exercise in the waters off of Ras-e Jask.

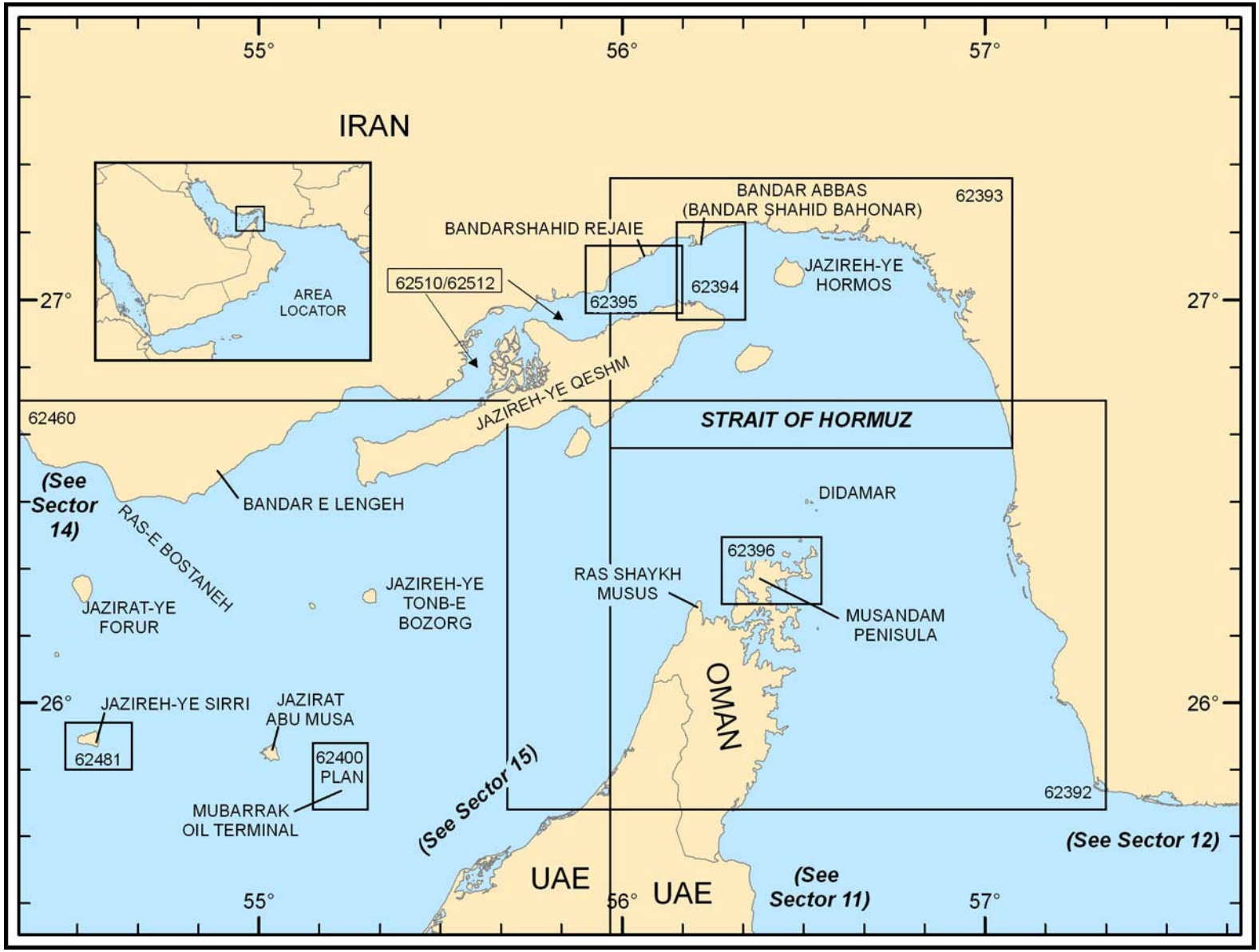
12.20 Khalij-e Jask (Jask Bay) (25°40'N., 57°45'E.), entered W of Ras-e Jask, has shores bound by sand hills up to 6m high.

Mason Shoal (25°37'N., 57°42'E.), lying 3 miles WSW of Ras-e Jask, has a least depth of 3.7m over coarse sand, coral, and shells. A shoal flat, with depths of 4.6 to 5.5m, extends at least 2 miles NW from Ras-e Jask. With local knowledge vessels can pass between the shoals.

Ras al Kuh (Damagheh-ye Kuh) (25°48'N., 57°18'E.) is a low sandy point lying about 26 miles WNW of Ras-e Jask. A lighted buoy is moored close W of the point. This entire stretch of coast is very low and is broken in places by several shallow inlets.

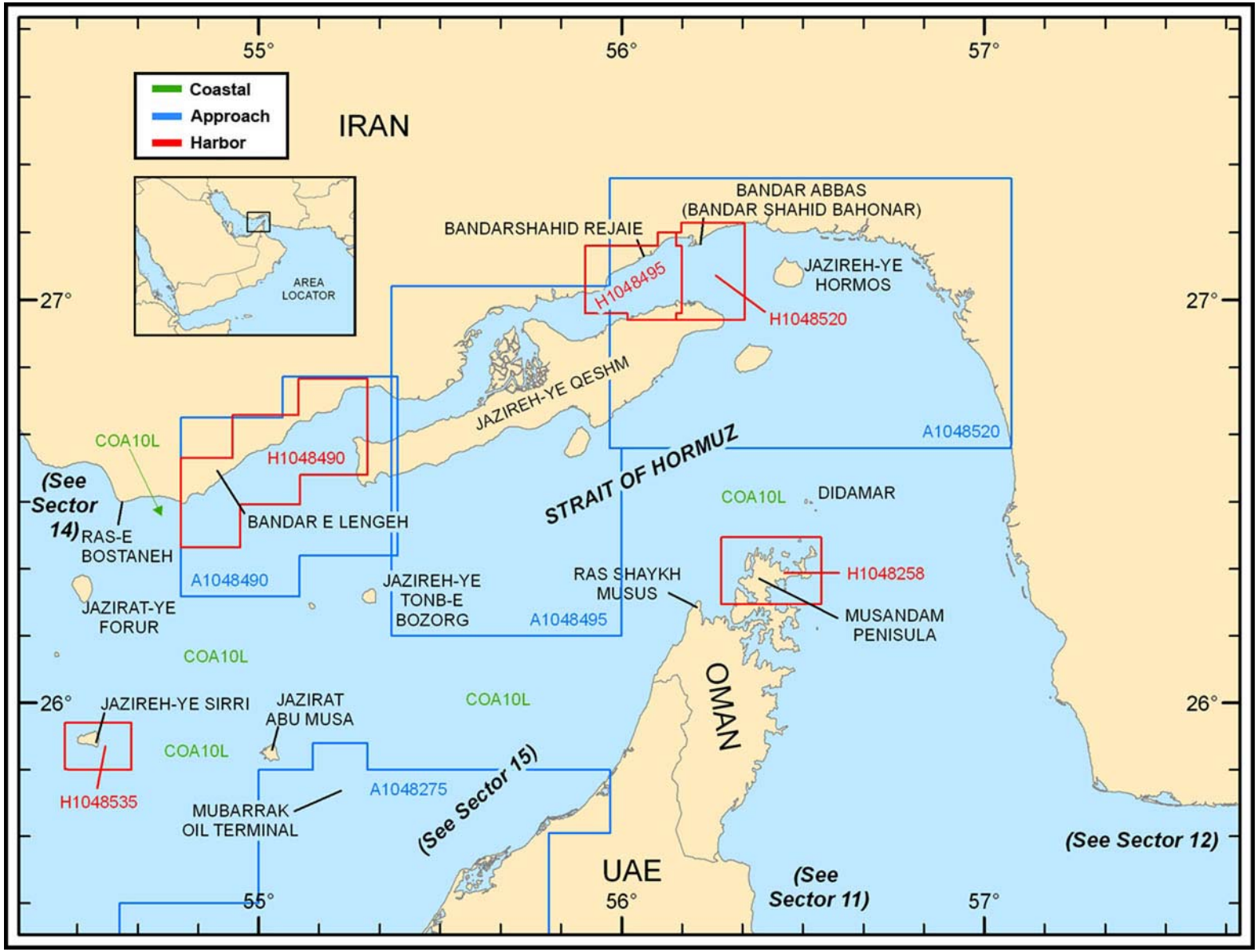
Tidal currents set E on a falling tide along the coast and W on a rising tide. Current velocities increase nearing Damagheh-ye Kuh. Coastal shoal flats extend at least 1.5 miles off the coast in places.

Caution.—An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, lies in the waters off Damagheh-ye Kuh. The area lying between the E separation limit and the coast has been designated as an Inshore Traffic Zone.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **13** — CHART INFORMATION



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SECTOR 13 — DNC LIBRARY INFORMATION

SECTOR 13

THE STRAIT OF HORMUZ AND THE ENTRANCE TO THE PERSIAN GULF

Plan.—Features of special interest to ships passing into the Persian Gulf via the Strait of Hormuz are described first. These features include the coasts of Ru us al Jibal and As Salamah wa Banatuha, the S side of Jazireh-ye Qeshm, and the islands and dangers SW of Jazireh-ye Qeshm.

The coast of Iran, N and W from Damagheh-ye Kuh to Ras-e Bostaneh, is then described.

General Remarks

13.1 Winds—Weather.—During the winter in the Gulf of Oman, the winds are mainly N with NW being the prevailing direction. The average wind speed is 7 to 11 knots. Calms are more frequent than in the Persian Gulf.

The Gulf of Oman is affected by W depressions; sometimes a secondary one of these depressions forms in the area of the Strait of Hormuz.

Strong squall winds from the E, accompanied by rain, are frequent. In the spring, the winds are variable.

In general, there is a decrease in the NW winds and an increase in the SW winds until May. The average wind speed is 6 to 10 knots.

In the month of June, NW and N winds are still comparatively frequent.

During July the prevailing winds are from the SE. On the N shores of the Gulf of Oman the early morning winds are from the E. During the day the winds veer, and by early evening they blow from SE to SW.

In June, before the Southwest Monsoon becomes fully established over the Arabian Sea, tropical cyclones occasionally form on the N boundary of the advancing SW winds. These storms have been known to reach the Gulf of Oman, giving rise to heavy gales.

In September and October, the frequency of SE winds in the Gulf of Oman gradually decreases, and that of the NW winds increases. The average wind speed is reported to be between 2 and 6 knots.

On the coast, the winds are for the most part light and variable, with frequent calms in the early morning.

In the Persian Gulf and the Strait of Hormuz, the hottest months of the year are July and August. While in the Gulf of Oman, the warmest month is June. Over the whole region, January is the coolest month.

Bad visibility in the Persian Gulf and the Gulf of Oman may be caused by early morning fog, salt haze, or dust. Of these dust is by far the most common.

Bad visibility caused by dust haze is more frequent on the S coast of Iran than in the Persian Gulf, and in the latter it occurs more often on the Arabian side.

Dust haze may occur in all seasons but is far less frequent during and immediately after the winter rains.

During the summer months when the rains cease and the temperature rises, the ground dries up and fine dust is carried up into the atmosphere.

Dust storms and sandstorms occur in all parts of the Persian Gulf and the Gulf of Oman in all seasons. They are most frequent during the months of June and July.

In winter, dust storms are associated chiefly with the passage of W depressions, and in summer with strong shamal winds.

Fog occurs at times near the shores of the Persian Gulf and may be dense. It is present only in the early morning and never lasts more than a few hours. It is associated with anticyclone weather during the winter months.

Tides—Currents.—In the Gulf of Oman, the general circulation is counterclockwise throughout the year. During the Southwest Monsoon, the current setting NE past Ra's al Hadd divides. The larger branch continues NE and E across the N part of the Arabian Sea; however, the smaller branch strikes the N coast of the Gulf of Oman and is deflected W. Some of the current passes through the Strait of Hormuz by the E coast of Ru us al Jibal, setting S and SE along the coast of the Gulf of Oman.

During the Northeast Monsoon, the currents setting W across the N part of the Arabian Sea turn SW and pass Ra's al Hadd. Some of the currents continue W into the Gulf of Oman along the Khalij Sawqarah coast.

A small portion of this current passes into the Persian Gulf through the Strait of Hormuz, but for the most part it is deflected by the E coast of Ru us al Jibal and turns S and SE toward Ra's al Hadd, joining the currents passing S of that point.

Through the Strait of Hormuz, there is a distinct inward flow from the Gulf of Oman during the Southwest Monsoon and a slightly outward flow during the remainder of the year.

During this latter period, some water continues to flow into the Persian Gulf. These currents tend to hug the Iranian side of the strait.

In the SE part of the Persian Gulf, there are sometimes strong currents setting between NE and E, especially in January and in April, May, and June.

The range of the tide in the Persian Gulf does not exceed 3m. In the S part of the Persian Gulf it is less than 2m.

Strong winds blowing in a constant direction for a long time can raise or lower the sea level, while causing a change in the direction and strength of the tidal current.

Aspect.—This section describes the waters and adjacent land areas of the passage into the Persian Gulf from seaward. The description begins in the N part of the Gulf of Oman between Ras Diba and Damagheh-ye Kuh, on the Iranian coast about 53 miles ENE.

This approach has adequate depths for large ships and leads first N to the vicinity of Didamar (Little Quoin), thence SW through the Strait of Hormuz, and thence W into the gulf passing among the islands that lie SW of Jazireh-ye Qeshm.

The sea distance along this approach is approximately 170 miles to a position SSW of Ras-e Bostaneh. Jazireh-ye Qeshm is an island bordering the NW side of the Strait of Hormuz.

The Ru us al Jibal promontory and the Musandam Peninsula, a N projection of the Western Hajar range, which divides the Gulf of Oman on the E from the Persian Gulf on the W, are

composed of dissected limestone mountains and are very steep, rugged, and barren.

The Musandam Peninsula is indented by numerous inlets. The coast of Iran included in this sector forms the E and N sides of this entrance into the Persian Gulf and extends from Damagheh-ye Kuh to Ras-e Bostaneh, a distance of about 210 miles. The shore and coastal terrain along this coast are heterogeneous in nature.

On the Gulf of Oman, the low sandy shores are interspersed with sea cliffs where tablelands reach the shore, and with areas of tidal inlets and mangrove swamps.

All these types of shore are backed by a narrow broken coastal plain, terminated on the N side by heavily-eroded coastal mountain ranges.

In the Strait of Hormuz, the islands are predominantly rough and volcanic, but there are stretches of low, sandy shores and some marshy regions. The mainland coastal terrain is mostly low and sandy, with occasional rocky stretches of shore and with several large marshy areas.

The coastal plain is, in general, narrow and backed by rough high mountains.

Regulations.—All vessels heading for Iranian ports should report to Bandar Abbas Port Control on passing **Ras al Kuh** (25°48'N., 56°17'E.), stating their ETA at the Strait of Hormuz and their destination. If clearance is not received before passing Bandar Abbas, vessels should proceed to the Bandar Abbas anchorage. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Two IMO-adopted Traffic Separation Schemes exist in the waters described by this sector; one lies E of the Musandam Peninsula, while the second passes N and S of Jazireh-ye Tomb-e Bozorg and Jazireh-ye Forur. Both are best seen on the appropriate chart.

Caution.—It has been reported that some charted oil production platforms in the Persian Gulf may have been removed. In many cases, all that remains of the platform are pipes from 3.1 to 6.1m above the waterline; these pipes do not show up well on radar and are a hazard to navigation.

Submarines, both surfaced and submerged, exercise frequently in the Strait of Hormuz.

It has been reported (2007) that unannounced missile firing exercises may be conducted in the N and E sides of the Strait of Hormuz in an area bounded by lines joining the following positions:

a. 26°46'N, 57°03'E.
b. 26°15'N, 57°06'E.
c. 26°15'N, 56°44'E.
d. 26°26'N, 56°45'E.
e. 26°45'N, 56°24'E.
f. 26°57'N, 56°28'E.

Coast of United Arab Emirates—Ras Diba to Ras Shuraytah

13.2 Ras Diba (25°36'N., 56°22'E.) has been previously described in paragraph 11.25.

Ru us al Jibal (25°50'N., 56°10'E.), a mountainous promontory of which the Musandam Peninsula is the N end, extends about 48 miles N from Ras Diba. This mountainous promontory has precipitous coasts, and overhanging cliffs in some places, but at the mouths of the valleys are many small sandy bays.

The E side, as well as the N part of the W side, of Ru us al Jibal is indented by numerous inlets in which for the most part the depths are considerable. The Musandam Peninsula has an especially irregular coastline. Except for scanty vegetation in some of the fissures of the hills and some date groves in a few of the small valleys, the land is barren.

The inhabitants of the promontory are herdsmen and fishermen. The mountains of Ru us al Jibal, when seen from E, appear to have two principal peaks.

Jabal Qawah, which has a small notch in its summit, rises to a height of 1,795m about 12 miles NW of Ras Diba.

Jabal al Harim (Jabal ash Sham), a small table-topped peak about 14 miles N of Jabal Qawah, is 2,057m high and has a small notch in its S part.

Winds—Weather.—The prevailing wind in the Gulf of Oman is W; also important is the NW shamal, which may be varied between June and September by the SE kaus. In this area there is sometimes a heavy swell and the sea may make up suddenly, especially, when the tidal current is strongly opposed by a shamal.

Depths—Limitations.—There is deep water close offshore along the E coast of Ru us al Jubal. The few detached dangers are well clear of shipping lanes and are described with related features.

13.3 Dawhat Diba (25°39'N., 56°18'E.) is a bay formed between Ras Diba and the coast 6 miles NW. Three spurs of a mountain range slope down to the bay, where depths of 27.4m decrease toward a sandy beach.

Diba, which has a harbor enclosed by breakwaters, is one of two villages located at the head of the bay.

Anchorage, open to E winds, can be taken in suitable depths throughout the bay and, in 21.9m, with **Ras Haffah** (25°44'N., 56°19'E.) bearing 067°, distant 0.3 mile.

Dawhat Haffah (25°44'N., 56°18'E.) is a constricted landlocked inlet not noticeable from seaward, as it lies behind a moderately high peninsula.

Two villages are located at the head of the inlet. Ras Haffah is the S entrance point.

The coast N of the point is formed of steep cliffs interspersed by small coves and backed by mountains, some detached and conspicuous from N.

Ghubbat Aqabah (Ghubbat Agabah) (25°55'N., 56°24'E.), a bay entered between two points, affords shelter to small craft from the nashi, the worst wind on this coast. These small vessels can anchor off the village of Agabah (Aqabah), located at the NW corner of the bay, whereas ships should anchor well offshore.

Limah (25°56'N., 56°26'E.) is a village at the head of a sandy bay entered between Ras Limah and a point about 2 miles NW.

Jazirat Limah, an islet, lies off Ras Limah. Strong currents flow through the deep channel between the point and the islet.

Mountains in the area are reported to rise abruptly to great heights.

Anchorage can be taken, in a depth of about 21.9m, off Limah but, the bay is open to E and NE winds. Landing is made on the S side of the bay.

13.4 Dawhat Qabal (26°02'N., 56°24'E.) is a deep-water inlet indented by coves and bound by steep cliffs. About 1 mile SW of the head of the inlet, the mountains rise abruptly to form a tremendous bluff.

From the N entrance point of Dawhat Qabal to **Ras Sarkan** (26°05'N., 56°28'E.), a vertical cliff, the coast consists of deeply-furrowed cliffs.

Khawr Habalayn (Ghubbat al Ghazirah) (26°07'N., 56°26'E.), entered between Ras Sarkan and **Ras Dillah** (26°08'N., 56°29'E.), is an inlet extending 9 miles WNW.

This deep-water inlet has a rocky bottom at the entrance but has a mud bottom inside. Ras Dillah, a sheer cliff with a conical top, is the extremity of a peninsula.

The shores of this inlet are high, precipitous, and deeply indented. The village of Habalayn is located at the head of the N arm of the inlet. A mosque with four arches is conspicuous at the E side of Habalayn. Depths of 20.1m in the inlet entrance decrease gradually to the sandy head of the inlet.

Anchorage can be taken in suitable depths throughout the inlet and also in 14.6m, sand, with the mosque in Habalayn bearing 191°.

Ghubbat ash Shabus (26°10'N., 56°28'E.), entered between Ras Dillah and **Ras Bashin** (26°12'N., 56°29'E.), has depths over 21.9m. The inlet has shores consisting of high steep-to cliffs and a few small sandy beaches. Ras Bashin is light red in color and steep-to.

A 12m high pinnacle rock lies 0.2 mile offshore, about 0.5 mile N of Ras Bashin. A reef, with a depth of 1.8m, is reported to lie close off the shore in the vicinity of the rock.

Jabal Sibi, a remarkable cone with a flat scalloped top, rises over 915m about 4 miles WNW of Ras Bashin.

There are several villages along the shores of the inlet.

13.5 Jazirat Umm al Fayyarin (26°11'N., 56°32'E.) is a light-colored steep-to islet lying 3.5 miles E of Ras Bashin. Landing may be made on its SE side.

From Jazirat Umm al Fayyarin, strong tidal currents entering the Persian Gulf on the flood tide usually set N along the coast as far as Jazirat Musandam and then continue NNW toward As Salamah wa Banat-ha and W toward Ras Shuraytah at a rate of 3 to 4 knots at springs.

Tidal currents flowing out of the gulf usually set in the opposite direction with a rate of 2 to 3 knots increasing to 4 knots at springs off Ras Musandam.

Dawhat ash Shisah (26°17'N., 56°27'E.) is a bay entered between Ras Khaysah (26°15'N., 56°30'E.) and **Ras Qabr al Hindi** (26°19'N., 56°31'E.). The shores of this deep-water bay are precipitous and steep-to. There are a few sandy beaches in several coves.

Jabal Khaysah, with a conical peak, is a prominent eminence rising 1.5 miles WSW of Ras Khaysah.

About 3 miles within the entrance lie three islets; the largest and S is known as Jazirat Hamra (Red Islet). There are villages located on the W and NW shores of the bay.

Ras al Bab (26°22'N., 56°30'E.), the NE extremity of the Musandam Peninsula, is a high sheer limestone cliff. This headland, together with all islands and islets off the N end of Ru us al Jibal, have been undermined by sea action.

Fakk al Asad (Bab Musandam) is a deep-water strait, about 0.2 mile wide and clear of dangers, that separates Ras al Bab and Jazirat Musandam.

Power vessels with local knowledge transit the strait; the NW flood tidal current sets against the W cliffs.

Jazirat Musandam (26°23'N., 56°32'E.) is a precipitous island, except on its E side, where landings can be made in small coves. Three peaks mark the S end of the island.

Bu Rashid (Tawakkul) (26°24'N., 56°29'E.) is a steep-to precipitous islet. Ruqq Suwayk, a 1.6m rocky patch, lies about 0.5 mile W of the islet.

13.6 As Salamah wa Banat-ha (26°30'N., 56°32'E.) is a group of three islets known as The Quoins. **Didamar** (26°29'N., 56°32'E.), also known as Little Quoin, is wedge-shaped. Both the N and S ends of the island form a bluff, with the S end being the higher. A light is shown from a position close by a radio tower located on the island.

Courtesy of IALA

Didamar Light

A reef extends about 0.5 mile N of the island. Ennerdale Rock, a sharp pinnacle with a least depth of 16m, lies about 2 miles SW of Didamar.

Fanaku (Gap Islet) (26°30'N., 56°31'E.), in the form of a peak with cliffs on all sides, lies about 1 mile NNW of Didamar. The area between the islets is encumbered with rocks, reefs, and shoals, on which overfalls occur.

As Salamah (Great Quoin) (26°30'N., 56°30'E.) is a wedge-shaped islet with the vertical side at its SE end. Landing can be made on its NW side. A reef, with a least depth of 3.7m, extends about 0.2 mile S from the islet; a detached above-water rock lies almost 91m from the N side of the islet.

The Inshore Traffic Zone for the Traffic Separation Scheme in the Strait of Hormuz encompasses the islands mentioned above, and may best be seen on the chart.

Tidal currents in the vicinity of As Salamah wa Banat-ha set NW and SE, attaining a rate of 3 to 4 knots at springs. Near Kachalu and Jazirat Tawakkul, their rate is strongest and they cause broken water.

In calm weather, at springs, the noise of the rips caused by these currents can be heard at a considerable distance.

Khawr Kumzar (26°20'N., 56°25'E.) is a deep inlet open to the nashi, which often blows hard in the winter.

Anchorage, secure and sheltered from the shamal, can be taken, in a depth of 42m, about 1 mile NNE of a fishing village located at the head of the inlet.

Two distinct peaks mark **Ras Mukhaylif** (Ras Mukhalif) (26°22'N., 56°25'E.). Jazirat Abu Sir, about 0.5 mile N of the headland, is a cliffy islet marked by a high peaked hill. A precipitous above-water rock lies in the strait between rock and the headland. Keshal Mushkan, a group of detached above-water rocks marked by a lighted beacon, lies about 0.6 mile NNW of Jazirat Abu Sir.

The Strait of Hormuz

13.7 The **Strait of Hormuz** (26°35'N., 56°15'E.), between the N and W sides of the Musandam Peninsula and the E part of Qeshm, is deep and clear of dangers.

Regulations.—The Omani authorities have issued regulations restricting the use of the Inshore Traffic Zone to vessels under 19.7m in length and sailing vessels.

An IMO-adopted Traffic Separation Scheme (TSS) exists in the waters of the Strait of Hormuz, and is best seen on the chart.

Additionally, the area S of the TSS has been designated as an Inshore Traffic Zone, which shall not normally be used by through traffic which can safely use the appropriate Traffic Lane of the adjacent TSS.

Directions.—See paragraph 13.27 for directions through the Strait of Hormuz.

Caution.—Deep-draft ships heading W in the Inshore Traffic Zone should avoid Ennerdale Rock.

Many fishing vessels operate in the W and S approaches to the TSS. At night, caution is necessary as some vessels may not show lights.

Coast of United Arab Emirates—Ras Shuraytah to Ras ash Shamm

13.8 **Ras Shuraytah** (26°23'N., 56°23'E.), located 2 miles WNW of Ras Mukhaylif, is the N end of a narrow promontory, on the S end of which is Round Hill.

The sides of the promontory are precipitous, except for a short sandy isthmus connecting it with the mainland. Makhbuk (Sakhr al Makhruq), a conspicuous rock having vertical N, W, and E sides, lies 137m N of Ras Shuraytah. Ruqq Shuraytah, a 3m shoal, lies about 0.4 mile N of Makhbuk.

The W side of the Musandam Peninsula, S of Ras Shuraytah, is deeply indented by several inlets and fronted by Jazirat al Ghanam.

From offshore and N of Musandam, Jabal al Harim, with its tabletop, is visible over the other mountains.

Tides—Currents.—The tidal currents in the N approach to Khawr al Quway set ENE and WSW; in the strait itself they normally set N and S at a maximum rate of 2 knots, but inshore there is a back eddy which runs in the opposite direction. In addition, there is normally a current setting N at a rate of 1 to 2 knots.

In Khawr al Quway itself, 0.5 mile S of Ras Salib, the combined current and tidal current at springs was observed to set in a SSW direction for only about 2 hours on either side of HHW setting NNE during the remainder of the tidal cycle, with the maximum rate at LW.

The tidal currents E of **Ras Shaykh Masud** (26°15'N., 56°13'E.) are weak, but NW of a line joining that point and the N end of Jazirat al Ghanam, about 11 miles NE, they set SW and NE at a rate of 1.5 to 2 knots.

Depths—Limitations.—Most of the coast is steep-to. The only off-lying dangers are Raqq Shuraytak, with a depth of 3m, lying 0.5 mile N of Makhbuk, and depths of 9.1m existing 1.5 miles offshore, in the vicinity of Al Jirri and Bakhah.

13.9 **Jazirat Umm al Ghanam** (26°22'N., 56°21'E.), located 1.5 miles SW of Ras Shuraytah, is a barren and uninhabited island, with a high hill dropping off to a sheer cliff at its S end.

Ras Salib (26°22'N., 56°22'E.) extends 0.2 mile E from the NE side of the island. A drying reef extends S of the point; another drying reef extends E from the root of Ras Salib.

A pier extends in a SE direction from shore at Ras Salib. A drying wreck, marked by a light, lies about 0.2 mile SSW of the end of the pier.

Khawr al Quway (26°21'N., 56°22'E.) is the strait between the W side of the N end of the Musandam Peninsula and Jazirat al Ghanam. It is deep in the fairway and has a least width of 0.2 mile.

A rock, with a depth of less than 1.8m, lies 46m off the S end of Jazirat al Ghanam. A high white cairn, standing at least 0.5 mile SW of Ras Salib, is conspicuous when entering the strait from the N.

There are two villages at the E end of the strait and several landing beaches along its sides, with a stone pier in shallow water at Salib beach.

Anchorages are available throughout Khawr al Quway, in depths of 23 to 31m, sand and gravel. The strait should be entered from the N, allowing for tidal currents in the approach.

Ships should not anchor within about 0.7 mile of the S entrance of the strait because of strong eddies and the velocities of the N currents.

The S entrance is considered better to enter at night, as **Ras Qabbah** (26°19'N., 56°21'E.), the W entrance point of Khawr Bustan, is a good radar target at 13 miles distant.

Anchorage can be taken 137m off the head of the pier at Ras Salib or, in 11m, about 183m from the head of **Khawr Bustan** (26°19'N., 56°22'E.).

13.10 **Ras Musandam Naval Base** (26°22'N., 56°22'E.), an

Omani naval facility, is located on the W side of the N part of Khawr al Quway. Entry is restricted to authorized vessels only. Vessels must contact the base on VHF channel 74 when 5 miles from the base. Authorized vessels must also obtain permission, on VHF channel 74, to use the Inshore Traffic Zone prior to entering the area.

An L-shaped jetty, with two berths on its inner face and two berths on its outer face, can accommodate vessels up to 100m long, in an alongside depth of 7m. It has been reported (2007) that four additional berths have been constructed along the shore about 0.2 mile SE of the L-shaped jetty.

A restricted area, which includes all of Khawr al Quway, the N and S approaches to Khawr al Quway, and the W coast of Jazirat Umm al Ghanam, is bounded by lines joining the following approximate positions:

a. 26°23'25.8"N, 56°22'44.4"E. (Sakhr al Makhruq)
b. 26°22'39.6"N, 56°20'57.6"E.
c. 26°21'07.2"N, 56°20'23.4"E.
d. 26°19'00.6"N, 56°20'11.4"E. (Ra's Khutaymah)

No vessel over 20m in length may enter this area without prior approval from the Royal Navy of Oman. Vessels are also required to contact Ras Musandam Naval Base on VHF channel 16.

The base can be contacted, as follows:

1. Call sign: A4N
2. VHF: VHF channels 11, 16, and 74
3. Telephone: 968-26341605
   968-26341699
4. Facsimile: 968-26341661
   968-26341690

Khawr Ghubb Ali (26°17'N., 56°21'E.) is a narrow inlet almost 4 miles long, that is deep and clear of dangers. The entrance lies between high cliffy hills; the inlet provides shelter from all winds except the shamal.

A drying reef lies 91m offshore and 183m N of the N entrance point. Jabal Sibi, within the head of the inlet, is a good landmark.

Anchorage can be taken, in 21.9m, sand, with the 335m peak rising 0.3 mile SE of the village at the head of the inlet bearing 132°, distant 1 mile.

13.11 The **Shamm Peninsula** (26°15'N., 56°20'E.) separates Khawr ash Shamm from Khawr Ghubb Ali. The coast of the peninsula is cliffy. There is a village midway along the coast between the inlets.

Jabal Shamm is an 888m peak located about 2 miles NNE of the S end of the peninsula.

Ras Shakhs (26°13'N., 56°17'E.), with its conspicuous white sandy beach, forms the W entrance for the constricted channel leading into Khawr ash Shamm.

A spit, with a depth of 2.8m at its outer end, extends about 0.3 mile N from Ras Shakhs.

The entrance has strong tidal currents at springs, is scarcely perceptible from close offshore, and has a least depth of 23.8m. Jazirat Seghir lies on the S side of Khawr ash Shamm, about 2 miles ESE of the S end of the Shamm Peninsula.

Several villages, some inhabited during the summer months only, are located at the head of coves indenting the shores of Khawr ash Shamm. Sibi, the largest village, is located in a cove at the SE corner of the inlet.

Shamm village is situated in a cove on the N side of the inlet, about 2 miles NE of the S end of the Shamm Peninsula.

Anchorage can be taken N and S of Jazirat Seghir, in depths of 27.4 to 32.9m, in the cove N of Jazirat Sibi, about 0.5 mile from the head of the inlet. There is sheltered anchorage 0.5 mile off Shamm village, in a depth of 5.5m.

13.12 Khawr Khasab (26°12'N., 56°15'E.) (World Port Index No. 48259) is entered between two points, on one of which stands a square fort, in ruins. Khasab, a town at the head of the inlet, is barely visible from seaward except for the fort, which is prominent.

A harbor, used only by local vessels, is formed by a breakwater extending about 201m ENE from the inlet's W shore and contains two quays; one is 90m long and the other is 60m long, both of which have an alongside depth of 4m. A drying sand bank extends about 0.5 mile N from the head of the inlet.

Landing at HW is best effected on the W end of the beach at Khasab. At LW, keep E of the fort and proceed up the creek that runs along its W wall.

Tidal currents at the inner anchorage are variable in direction and strength, but farther offshore the velocities increase.

Pilotage is not available. Vessels should contact the harbor 30 minutes before arrival on VHF channel 67.

Port Control can be contacted (call sign: Khasab Port Control) on VHF channels 16 and 67 and by telephone (968-26730559). The Port Authority can be contacted by telephone (968-26730557).

Anchorage can be taken, in summer, in a depth of 12.8m, good holding ground; however, during winter, anchorage should be taken in not less than 18.3m.

The inlet is well-sheltered from the shamal, which blows from SW in this vicinity; it is open to strong N winds in winter, but they are rare and short in duration. A vessel can anchor, in 14.6m, with the fort bearing 193°, distant about 0.3 mile.

Caution.—It has been reported (2003) that facilities for cruise ships, as well as for container and general cargo vessels, are under construction.

Numerous fish traps exist in the approaches to Khasab. They are usually located within 5 miles of the coast; their positions are subject to frequent change.

13.13 Khawr Hanah (26°14'N., 56°13'E.), a cove, affords anchorage outside its entrance, in depths of about 34 to 40m, with Ras Shaykh Masud bearing about 306°, distant 1.5 miles.

Ras Shaykh Masud (26°15'N., 56°13'E.), a conspicuous cliffy headland marked by a light, has two small coves with white sandy beaches on its N side.

The terrain rises gradually from the point to Jabal al Harah (Fine Peak), rising about 1,400m, 9.5 miles S. When seen from N, the peak has a rounded top, but from E or W, it appears as a cone with a long slope on its N side.

Anchorage.—A circular anchorage area, with a radius of 1 mile and charted depths of 36 to 110m, is centered on position 26°17.5'N, 56°15.0'E, about 3 miles NE of Ras Shaykh Masud.

The coast SSW of Ras Shaykh Masud is open to the shamal, from which there is no shelter.

Ras al Jirri (Ras al Jari) (26°13'N., 56°11'E.) is a conspicuous salient cliff when seen from the NW or SW.

Al Jirri (Al Jari) is a fishing village located along a sandy

beach at the foot of some hills.

Al Jadi, another village, is located about 3.5 miles farther SSW.

Bukha (26°09'N., 56°09'E.), a village, stands on the shore of an open bight. Depths of less than 5.5m are charted up to 1.5 miles NW and up to 0.5 mile NE of the town.

A prominent white fort with a tower at one corner stands on the W entrance point. Another fort stands at the head of the bight, while a third fort is located 0.5 mile E of the village.

Anchorage can be taken, in a depth of 40m, with the fort on the W entrance point bearing 160°, distant 1 mile. In this position the tidal currents set parallel to the coast.

Bukha Oil Field (26°15'N., 56°03'E.), marked by a lighted production platform, is located about 7.7 miles NW of Bukha. A submarine oil pipeline extends 18 miles S from the platform to the shore close S of Mina Saqr. This pipeline is not buried and may reduce charted depths by up to 2m. A submarine gas pipeline extends S from the platform to Ras ash Sham,

West Bukha Oil Field, marked by a light and racon, is located about 9 miles NNW of Bukha Oil Field. Two submerged gas pipelines connect the platform to Bukha Oil Field. Two lighted platforms, best seen on the chart, stand NNW of West Bukha Oil Field.

The coast between Bukha and Ras ash Sham, about 6 miles SW, is steep, rocky, and interspersed with small sandy beaches.

There are several fishing villages reported at the various beaches. Ras ash Sham is described in paragraph 15.2.

The Strait of Hormuz—South Side of Jazireh-ye Qeshm and Adjacent Islands

13.14 Jazireh-ye Qeshm (Qeshm) (26°44'N., 55°40'E.), the largest island in the Persian Gulf, extends about 59 miles WSW from its E extremity at the town of Qeshm. The island, lying nearly parallel with the coast of Iran, is separated from the mainland by Toreh-ye Khowran (Khuran) (Clarence Strait). The light-colored table-topped hills on the island have precipitous sides that are remarkable in appearance.

There are just a few towns and villages on Jazireh-ye Qeshm. From the hills W, behind the town of Qeshm, a low plain extends across the island for several miles; farther W are some table-topped hills, precipitous on their seaward sides.

An eminence, with a white conical top located about 15 miles SW of Qeshm, rises between a long plateau and a very high whitish hill with a cone at its S end.

Jabal Biscoe (26°49'N., 55°54'E.), with a high-peaked summit, is prominent. All heights show up well from offshore.

Qeshm (26°58'N., 56°17'E.), a town located at the NE extremity of the Jazireh-ye Qeshm, is fairly level and well-built, but earthquakes have destroyed a large part of it. There are several domed water tanks close S of town. A fort standing in the NE part of town, with a seven-arched building close N of it, are good landmarks from E.

The terrain behind and S of the town rises gradually to a hill with a flat summit and steep N and W sides. There is a long boat pier N of town. A coastal shoal and drying flats front the town and extend as far as 1.5 miles offshore.

Tidal currents over the shoals and flats attain a rate of 2 knots at springs.

Shoal patches, with depths of 3.4 to 4.7m, are charted 1.5 miles ENE to 1.5 miles SE of the town.

Anchorage.—To the N of the town of Qeshm is a good berth, in a depth of 11m, about 2 miles offshore. Vessels can anchor closer in, draft permitting, in depths of 6.4 to 8.2m, mud, with the fort bearing 180°, distant about 0.5 mile.

The anchorage near the town is well-sheltered from the shamal, and the nashi does not raise a heavy sea; however, the tidal currents cause a vessel at anchor to lie broadside to the prevailing wind and to ride uneasily.

Qeshm Bunkering Anchorage (26°33'N., 55°45'E.), used by ocean-going vessels undergoing ship-to-ship bunkering operations, lies in the Qeshm Free Area (QFA) about 8 miles SW of Jazireh-ye Qeshm and is best seen on the chart. It has been reported (2005) that the vessel's ETA should be sent72 hours, 48 hours, and 24 hours in advance; QFA authorities can be contacted on VHF channel 71 or 72.

13.15 Jazireh-ye Larak (26°51'N., 56°21'E.), barren and consisting of many high rugged hills, has generally steep-to shores. The island is similar in appearance to Jazireh-ye Hormoz (see paragraph 13.30) when seen from the SE at night; however, soundings are deeper from the former island at equal distances offshore.

About 1 mile SW of the highest peak on Jaziret-ye Larak is the perfectly conical light-colored peak which is one of the best landmarks in the area as seen from NW or SE.

An old fort and small village lie on the N coast of the island; a sandy beach lies 2 miles W of the village.

A light with a racon is shown from the N end of the island.

Anchorage.—Between the village and the low sandy point on the N coast, anchorage can be obtained about 0.5 mile offshore and 0.3 mile from the edge of the drying sands, in a depth of about 24m.

Off the village the bottom is rock, and in this vicinity the coastal reef extends about 183m offshore. The anchorage is sheltered only from the shamal and is not recommended.

Caution.—Many anchored vessels, a significant number of which are conducting bunkering operations, can be found off the E and N coasts of Jazireh-ye Larak.

13.16 Ras-e Khargu (26°41'N., 55°56'E.) is a low rocky point, marked close E by a white cairn, about 25 miles SW of the town of Qeshm. Most of this stretch of coast consists of rocky patches and sandy beaches. This coast is open to the shamal, which blows from between SW and WSW. Small craft obtain shelter in various shallow coves.

Suza (26°47'N., 56°04'E.) and **Masen** (26°44'N., 56°00'E.) are two small villages on this coast. A remarkable isolated crag, which shows up well from the E, rises W of Masen.

13.17 Jazireh-ye Hengam (26°39'N., 55°53'E.), lying about 1 mile SW of Ras-e Khargu, is barren and rather dark-colored. Hills decrease in height from the N end to the S end.

Mitre Hill, about 2 miles from the N end of the island, has a conspicuous double peak. Table Hill, about 0.5 mile NW of Mitre Hill, is also conspicuous on some bearings. A light is shown from a square tower at the E side of the island.

A submerged well head is charted 11 miles ESE of the light; a radio mast lies about 3 miles N of the same light. There are two villages, one on the W side, and Hengam-e Qadim, the

larger one, on the S side of the island.

Hengam Sound (26°41'N., 55°54'E.) is the strait between the NE side of Jazireh-ye Hengam and Jazireh-ye Qeshm.

Maundrell Shoal (26°41'N., 55°57'E.), with a least depth of 4.8m, lies in the outer entrance of the strait.

Vessels should not pass between the shoal and Jazireh-ye Qeshm. Shoals at the E entrance constrict the fairway to 0.5 mile, with a least depth of 9.6m; the W entrance has a least depth of 9.6m.

White Point (26°40'N., 55°55'E.) and **Ras-e Masheh** (26°41'N., 55°53'E.) are the E and N points of Jazireh-ye Hengam. A cairn marks the former, while the latter is marked by a beacon. Rocky shoals fringe the sides of Hengam Sound and several shoal patches lie as far as 1 mile off the N and S sides of the sound.

Tidal currents set NW and SE in the E entrance to Hengam Sound and attain a rate of 2.5 knots at times. Landing can be made at a shallow pier near Ras-e Masheh.

Anchorage can be taken NW of Ras-e Masheh, but the best position appears to be in 12.8 to 16.5m, with the beacon on that point bearing not less than 124°, distant about 0.3 mile. The depths in this vicinity are irregular, and the bottom is sand and mud. This anchorage is partially sheltered from the shamal, which in this vicinity blows from SW.

A convenient berth is about 0.5 mile N of Ras-e Masheh with the beacon bearing 183°, distant about 0.3 mile, but, although the holding ground is good, this position is open to a strong shamal and slight sea. This anchorage is not recommended during the winter months. During the hot weather, cool wind there is said to be felt in this position. Sheltered anchorage can be obtained NE of Ras-e Masheh, but the bottom is hard. Strong tidal currents and eddies are found here.

13.18 Ras-e Salakh (26°41'N., 55°45'E.), about 10 miles W of Ras-e Khargu, is a sandy point with a rocky beach.

The hills inland of the point form a plateau. There is a village about 1 mile inland of Ras-e Khargu and Quoin Hill, about 8 miles NW of the point, is a conspicuous wedge-shaped eminence.

The coast between Ras-e Salakh and **Ras-e Tarkun** (26°38'N., 55°36'E.) is low, sandy, and backed by cliffs facing N with high, broken hills farther inland. Shoals and rocks front this stretch of coast. A high black chimney close E of Ras-e Tarkun is conspicuous, except when seen from the E. A pier, which dries, is located in front of the chimney.

Anchorage can be obtained about 0.5 mile off Ras-e Tarkun, in a depth of 7.3m. It should be approached with the chimney bearing 013° in order to avoid a dangerous rock off that point.

Landing is bad because a ridge of sand, which nearly dries, lies about 183m off and parallel with the beach. The best place is reported to be a short distance W of the path leading to the main building of the oil company located near the conspicuous black chimney previously described above.

Kish Kuh (26°41'N., 55°32'E.), about 397m high, is conspicuous about 4 miles WNW of Ras-e Tarkun. A range of dark red hills runs in a N to S direction a few miles W of Kish Kuh. These hills exude salt, which dries, leaving a noticeable brine deposit on the plains between the hill and coast.

A stone hut, located 7.5 miles WSW of Ras-e Tarkun, is reported to be useful for fixing the position of a vessel approaching the inshore channel around the W end of Jazireh-ye Qeshm.

13.19 Ras Kakun (26°34'N., 55°22'E.) and **Ras-e Dastakan** (26°32'N., 55°18'E.), the latter forming the low rocky SW extremity of Jazireh-ye Qeshm, are separated by two shallow bights.

A light is reported to be shown from a white beacon on Ras-e Dastakan.

Close SW of Ras Kakun is a conspicuous islet, about 3m high, while close off the point separating these two bights is a flat rock, which dries about 1.5m and shows up well.

Another rock lies close offshore, about 0.6 mile NW of the flat rock. An overhanging rock, resembling a shark's jaw, is located about 1 mile NNW of Ras-e Dastakan.

The Hummocks (26°35'N., 55°18'E.), nearly 3 miles NNE of Ras-e Dastakan, are three prominent hills. The W hummock is table-topped, the middle one has a rounded summit, and the E and highest is 141m high and table-topped.

The latter hummock is almost joined to a tableland, which extends in an E to W direction for about 4 miles and terminates E in a bluff.

The S sides of The Hummocks, as well as the S side of the tableland, are precipitous.

The Flat (26°30'N., 55°18'E.), an extensive shoal area with depths of 3.7 to 5.5m, lies off the SW end of Jazireh-ye Qeshm, from which it is separated by a navigable channel.

The outer edge of The Flat lies about 9 miles off the S coast of the island and 5.5 miles off the W coast.

Discolored water, at times almost dark brown, extends for a considerable distance outside The Flat.

The Strait of Hormuz—Islands and Dangers Southwest of Jazireh-ye Qeshm

13.20 An IMO-adopted Traffic Separation Scheme (TSS) lies in the waters SW of Jazireh-ye Qeshm, and is best seen on the appropriate chart. The westbound lane passes N of Jazireh-ye Tonb-e Bozorg and Jazireh-ye Forur, while the eastbound lane passes S of both islands.

Vessels are reminded that the International Regulations for Preventing Collisions at Sea apply, and that vessels not using a Traffic Separation Scheme shall avoid it by as wide a margin as is practicable.

Jazireh-ye Tonb-e Bozorg (Tunb al Kubra) (26°16'N., 55°18'E.), brownish-colored and level in outline, is enclosed by the 20m curve, which lies up to 1.5 miles S of the island. A small peaked hummock near the SE end of the island is conspicuous when seen from the NE or SW. The E side of the island consists of low cliffs, whereas the N and S ends are sandy beaches.

Foul ground, on which lies above and below-water rocks, extends at least 1 mile off the SW side of the island. A shallow stony spit extends about 0.5 mile from the SE end.

A military camp is located close inland of the SW end of the island, which is reported to be a good radar target at a distance of 15 miles. There is a boat jetty at the SW end of the island.

Mariner Shoal (26°22'N., 55°12'E.), with a least depth of 6.9m, lies with its least depth about 7 miles NW of Jazireh-ye Tonb-e Bozorg. Depths off this shoal are irregular and the area

should be avoided.

13.21 Coote Rock (26°17'N., 55°24'E.), with a least depth of 8.2m, lies with its shallowest part about 5 miles E of the NE extremity of Jazireh-ye Tonb-e Bozorg. Tidal currents of 2 to 3 knots cause strong tide rips over this rock.

Detached patches, with depths of 34 and 19.7m, lie about 2.5 miles N and 3.7 miles W, respectively, of the N extremity of Jazireh-ye Tonb-e Bozorg; tide rips form over these features.

A bank, with a least charted depth of 12.6m, extends up to 7 miles S of the island.

Anchorage, sheltered from the shamal but open to the nashi, can be taken, in 14 to 20m, off the E side of Jazireh-ye Tonb-e Bozorg, where the tidal currents are not so strong as S of the island.

There is anchorage off the S side of the island, in 11 to 13m, but the tidal currents here set strongly E or W. During strong SE winds, sheltered anchorage can be taken about 0.4 mile off the NW side of Jazireh-ye Tonb-e Bozorg, in depths of 13 to 15m, with the light structure bearing 098°.

Allowance should be made for the tidal current when a ship is approaching this anchorage. The best landing place, except when the nashi is blowing, is on the beach of the bight N of the SE extremity of the island.

Landing can also be made on a sandy beach, on the NW side of the island or, without difficulty, on the rocks off the village on the S side.

Saleh Oil Field (26°10'N., 55°42'E.), located about 28 miles E of Jazireh-ye Tonb-e Bozorg, is surrounded by a restricted area and can best seen on the chart. A submarine pipeline extending SE from the oil field to an offshore oil berth can best seen on the chart; the berth, known as **Hulaylah Oil Terminal** (25°59'N., 55°24'E.), is described in paragraph 15.4. From the berth, the pipeline continues to the shore.

Caution.—A dangerous wreck, with a least charted depth of 18.8m, lies about 19 miles ESE of the light on Jazireh-ye Tonb-e Bozorg.

13.22 Jazireh-ye Tonb-e Kuchek (Tunb as Sughra) (26°14'N., 55°09'E.), marked by a light, is a small, barren, and uninhabited island. On its NW side is a dark hill with two small peaks. The island is steep-to except on its W side, where there is an above-water rock, and on its SE side, where a reef extends about 1 mile offshore. Anchorage can be obtained, in depths of less than 20m, about 0.5 mile offshore, in most places around the island.

Jazireh-ye Abu Musa (25°53'N., 55°02'E.) is mostly low, but there are numerous hummocks, some of which are dark brown in color due to iron oxide. A ridge of high hills rises on the W side of the island. Jabal Halwa, a conspicuous hill of light-pinkish color, from which a light is shown, rises abruptly in the N part and is visible in all directions.

The N part of the island rises to a prominent reddish-colored hill with two peaks. The ruins of a large house are visible in the NE part of the island. Two rocks, which break in moderate weather, lie near the edge of shoals which extend as far as 0.4 mile off the E side of the island.

Drying flats extend up to 0.5 mile off the three bights forming the S side of Jazirat Abu Musa. A sunken rock and foul ground, with a least depth of 3.7m, lie about 0.5 mile SW of the village on the island's W point; lesser depths lie SSW and SE of this shoal.

The W side of Jazireh-ye Abu Musa is fronted by islets and above and below-water rocks and reefs. This coast should not be approached closer than 1 mile.

Anchorage, sheltered from the shamal, can be taken, in a depth of 12.8m, sand, near the S end of the E coast of the island.

Anchorage can also be taken, on very good holding ground off the S part of Jazireh-ye Abu Musa, with Jabal Halwa bearing 352°, distant 2.5 miles. Tidal currents at the anchorages set SW and NE, with a rate of 1 knot at springs.

Torlesse Rock (25°54'N., 55°01'E.), with a depth of 1.8m, lies 1.5 miles W of the N extremity of the island. The sea breaks heavily on this rock in rough weather. A bank, with a least depth of 15.1m, lies about 6 miles NNW of the N extremity of Jazireh-ye Abu Musa. The bank is marked on its E side by a lighted buoy.

13.23 Mubarek Oil Terminal (25°49'N., 55°00'E.) (World Port Index No. 48268) is located about 9 miles ESE of Jazireh-ye Abu Musa. Within the restricted oil field there are numerous oil well heads and associated structures, some exhibiting lights, together with unlighted obstructions and submarine pipelines. A production platform stands in the center of the oil field, with a flare structure standing 0.3 mile NE.

Depths—Limitations.—There is an SPM located about 0.7 mile SW of the production platform. A tripod drilling platform stands about 2 miles NNE of the SPM. The SPM, lying in 49.7m, is designed to handle tankers of up to 275,000 dwt.

Vessels are normally moored during daylight hours only, but may sail at any time.

Pilotage.—Pilotage is compulsory for tankers using the terminal. A Mooring Master will board in the tanker anchorage located about 6.5 miles ENE of the Floating Oil Storage Vessel; a helicopter boarding may be used. The Mooring Master remains on board until the vessel's departure.

Regulations.—Tankers should send their ETA 72 hours, 24 hours, 12 hours, and 4 hours in advance or at any time a change of 1 hour in the original ETA occurs. It should be stated whether the ETA is UTC or local time.

The 72-hour message should contain the following information:

1. ETA.
2. Last port of call.
3. Any sickness on board?
4. Does the vessel have a clean bill of health?
5. Cargo quantity and grade to be loaded (in long tons).

The 12-hour message should include whether the vessel is ready to load. The 4-hour message should give the precise ETA.

Tankers are moored during daylight hours only, but may unmoor at any time.

When within range, contact the terminal on VHF channel 71. Mooring Masters only, when aboard ship, may transmit messages via radiotelephone. There are no facilities at the terminal, but stores and provisions can be obtained from Ash Shariqah or **Dubbayy** (25°16'N., 55°17'E.).

Contact Information.—The terminal can be contacted, as follows:

1. Call sign: Mubarek Terminal

2. VHF: VHF channels 16, 17, 33, and 71
3. Telephone: 971-6-5727000
4. Facsimile: 971-6-5726000
5. Telex: 893-68015 CRESPT EM

Anchorage.—Tankers can anchor in a circular area 1 mile wide, with depths of about 40m, located close outside the SE limit of the restricted area.

Caution.—Tankers should navigate with caution in the vicinity of the oil field and may not enter this restricted area without a Mooring Master aboard.

13.24 Jazireh-ye Forur (26°17'N., 54°31'E.) rises in dark-colored volcanic hills to a table-topped conical peak. The island is steep-to on its N, E, and S sides.

Several detached above and below-water rocks lie close off the W side of the island. Ships approaching Jazireh-ye Forur during poor visibility should do so with caution, as the tidal currents set strongly past the island and soundings give no warning as to its proximity.

The island is a good radar target, with an echo range of 16 miles under normal conditions. The rocky coast of the island is backed by cliffs. There are a few sandy bays where landing can be made in the vicinity of former villages located at the S and E sides of the island.

Anchorage can be taken, in 49m, sand and shells, about 0.3 mile offshore with the village on the E side of the island bearing about 240°. Anchorage has also been obtained, in 37m, with the village bearing about 257°. Anchorage can be taken in a small bay at the S end of the island, in a depth of 31m, sand and shells.

In suitable weather, landing can be made on the E part of a steeply shelving beach. Anchorage can be taken off the W side of the island, in a depth of 12.8m, rock and sand, with the summit bearing 090°, distant about 2 miles.

Forur Shoal (26°26'N., 54°32'E.), located 6.5 miles N of Jazireh-ye Forur, is described in paragraph 14.2.

Jazireh-ye Bani Forur (26°07'N., 54°27'E.), about 8.5 miles SSW of Jazireh-ye Forur, is an island with a conspicuous dark-colored saddle hill on its E side. A light is reported to be shown from a beacon on the SE side of the island.

A rocky reef, partly above-water and sometimes marked by breakers extends about 1 mile NNW from the island.

An unexamined depth of 14.6m lies about 2 miles SSW of the island. Lesser depths may exist over this shoal.

13.25 Jazireh-ye Sirri (25°55'N., 54°32'E.) (World Port Index No. 48535) has several small hills on the N part of the island where there are houses and small date groves.

Depths—Limitations.—Sirri Oil Loading Terminal is reported to be a T-type jetty, with a berthing face 190m long and an alongside depth of 24m, located on the SE end of the island. The following limitations apply at the berth:

1. Minimum size—80,000 dwt.
2. Maximum size—330,000 dwt.
3. Minimum length—240m.
4. Maximum length—365m.
5. Maximum sailing draft—23.77m.

Vessels berth port side-to, with the bow facing any wind. Tidal currents are reported to run strongly at the loading terminal, making berthing difficult at times.

Aspect—Landmarks.—Two islets, together with some rocks, awash, lie as far as 0.5 mile off the W and N sides of the island; the E and SE sides are steep-to. There is a village, with a tower nearby, about 2 miles from the SE extremity.

Pilotage.—Pilotage is compulsory and is available 24 hours. The pilot boards about 2 miles E of the terminal.

Regulations.—The vessel's ETA should be sent via facsimile (98-212-2664295) to the Iranian Offshore Oil Company (addressed to Production and Planning and Export Coordination, attention Sirri Marine) 96 hours and 48 hours in advance.

Vessels should start contacting the terminal (call sign: Sirri Marine) on VHF channel 16 beginning 4 hours before arrival.

Vessels may not enter the port limits without a pilot on board.

Anchorage.—Anchorage for vessels awaiting a berth at the terminal may usually be obtained, in a depth of 60m, more than 1.5 miles E of Sirri Light. Anchorage off the island is indifferent, as the holding ground is bad; N and W of the island it is considered unsafe.

Due to the existence of submarine pipelines, anchoring is prohibited within 1 mile of Sirri Oil Terminal and also within the pipeline area marked on the chart extending SW from the island.

Caution.—An unsurveyed wreck was reported in 50m about 2 miles E of Jazireh-ye Sirri.

13.26 Sirri Oil Field A (25°45'N., 54°08'E.) is located about 24 miles WSW of Jazireh-ye Sirri. Nasr Oil Field is located close E of Sirri Oil Field A. A pipeline connects Sirri Oil Field A to Nasr Oil Field. Gas and oil pipelines connect Nasr Oil Field to Jazireh-ye Sirri. Sirri Oil Field E lies about 11 miles SE of Jazireh-ye Sirri and is connected to it by a pipeline. The locations of all these oil fields are best seen on the chart.

Caution.—Submarine pipelines, submerged well heads, and various other obstructions, both above and below-water, exist in this area. The oil and gas pipelines are not buried and may reduce charted depths by as much as 2m.

The area between Jazireh-ye Sirri and **Jazirat Halul** (25°41'N., 52°25'E.) has not been thoroughly surveyed and uncharted shoals have been reported.

The Strait of Hormuz—Directions

13.27 If approaching the Strait of Hormuz from the Gulf of Oman and westbound, vessels should enter the appropriate lane of the Traffic Separation Scheme E of the Musandam Peninsula.

Proceeding as safe navigation permits, enter the appropriate lane of the Traffic Separation Scheme between Jazireh-ye Tonb-e Bozorg and Jazireh-ye Forur. If eastbound, observe the Traffic Separation Schemes as listed above.

Keep a good eye out for traffic, especially for southbound vessels at either end of the latter Traffic Separation Scheme. If Eastbound or westbound, and passing S of the Traffic Separation Scheme off Jazireh-ye Tonb-e Bozorg, take care to avoid Saleh Oil Field, the dangers associated with it, and the wreck charted about 10 miles SW.

If passing N of Jazireh-ye Abu Musa and Jazireh-ye Sirri, take care to avoid the 15.1m shoal N of the latter island and Jazireh-ye Bani Forur.

If passing S of both islands, proceed as safe navigation permits, keeping in mind Mubarak Oil Field, Fath Oil Field, and Sirri Oil Field, and that depths are irregular E and S of Jazireh-ye Abu Musa. The strong tidal currents present here should be guarded against.

Coast of Iran—Damagheh-ye Kuh to Bandar Abbas

13.28 Ras al Kuh (Damagheh-ye Kuh) (25°48'N., 57°18'E.) is described in paragraph 12.21. Shoal water, steep-to on the outer edge, extends 1 mile off the point.

The small inlet NW of Ras al Kuh is frequented by local craft. There is a village reported about 3 miles NE of the point.

The entire coast for over 100 miles between Ras al Kuh and Bandar Abbas is very low, with a plain extending inland to the foot of mountain ranges.

Tidal currents off the E shore of the Gulf of Oman set N and S. The currents E of Ras al Kuh are weak, but N along the coast they attain a rate of 2 knots at springs.

Anchorage can be taken, in 11.0 to 18.3m, about 1 mile SW of Damagheh-ye Kuh and 0.5 to 0.7 mile offshore. This anchorage is open to the shamal.

Caution.—Caution should be exercised when approaching this stretch of coast as it is not well known and soundings and radar are of little aid.

13.29 Kuh-e Mobarak (25°51'N., 57°19'E.), a remarkable, isolated 101m high light-colored rock, is located in a swampy plain, 0.5 mile inland and 3 miles N of Ras al Kuh. In its upper E corner is a small hole, which appears open when seen from NW or SE. A light, with a racon, is shown from a framework tower, 20m high, on the rock.

The rock is conspicuous when seen against the light-colored hills behind it. When the rock is seen from NW or SE and the low land is not in sight, it appears as an outlying rock. It is reported that Kuh-e Mobarak is radar conspicuous under normal conditions.

Several inland ridges extending parallel to the coast have features which are conspicuous from offshore.

Proserpine Rock (25°57'N., 57°16'E.), close offshore, is 16m high and wedge-shaped, with the bluff on its W end. An inlet close N of the rock leads to a village.

Karai Jump (26°10'N., 57°16'E.) is a conspicuous light-colored high hill which appears as a peak with nearly precipitous sides when seen from NW or S.

Kuh-e Zangiak (26°12'N., 57°33'E.), a prominent mountain, appears conical in shape when seen from the S or NW.

Ras-e Shir (Ras osh Shire) (26°01'N., 57°12'E.) is a low point off which a mud flat of less than 5.5m extends as far as 3 miles offshore.

Rudkhaneh-ye Gaz (26°26'N., 57°04'E.), a river entered from seaward, has an entrance hard to identify. There is a conspicuous double-peaked hill rising about 10 miles ESE of the river mouth; however, the peak is often obscured by haze.

Bandar-e Sirik (26°29'N., 57°05'E.) is difficult to see from seaward due to the low coastline and sand dunes. Sirik village, located inland, is scarcely visible. Landing can be made about 0.5 mile N of Bandar-e Sirik.

A light is shown from a beacon about 0.5 mile NE of Bandar-e Sirik.

Kuhestak (26°47'N., 57°02'E.), a village, may be identified by a large conspicuous white fort standing on a hill close E of the village.

The shamal blowing from the WSW raises heavy seas along the coast N of Kuhestak. The hills in the vicinity of Kuhestak recede, leaving a wide plain expanding for 20 miles or more until they reach mountain ranges.

A very high needle-pointed hill, rising about 9 miles ESE of Kuhestak, is an excellent landmark along this coast.

An overhanging peak, 820m high, rising about 20 miles NE of Kuhestak, appears as two peaks when seen from the SSW. This peak is located at the S end of a range which extends NNW.

Khowr-e Minab (27°08'N., 56°49'E.), a salt water mangrove river, is the port for Minab, which is situated about 15 miles ENE of the entrance.

From Khowr-e Minab to Bandar Abbas, about 28 miles WNW, the coast is low, swampy and fronted by mud flats for at least 2 miles offshore.

13.30 Jazireh-ye Hormoz (27°04'N., 56°28'E.) (World Port Index No. 48530), lying with its N extremity about 3 miles off the coast of Iran, consists mostly of rugged hills of various colors. Tthe highest of some white-peaked hills in the middle of the island is very sharp, with a long slope on its E side. The S and SW coast are cliffy. Various colored earth cover the hills, which are formed of rock salt.

A fort, in ruins, stands on the N extremity of the island; close S of the fort is Hormoz, a village consisting of mat huts.

About 0.2 mile S of the fort is a minaret, about 21m high. Red oxide, brought from the interior of the island, is loaded into dhows near the fort for transfer to vessels at the anchorage. The NE side of the fort presents a remarkable appearance when seen from seaward, as it is a red purplish color from the oxide dust.

Pilotage is compulsory for ships proceeding to the anchorage.

Ships must first anchor off Bandar Abbas to obtain pratique, clear customs, and embark a pilot and labor gang. Ships can sail without a pilot. The vessel's ETA is given to Bandar Abbas 48 hours prior to arrival. Landing at the jetty near the fort is not easy, as it dries at LW.

A stone pier, about 183m long and with a depth of 3.7m at its head, is located about 0.5 mile ESE of the fort. The pier is used for loading lighters.

Shoal flats, with depths of less than 4.8m, extend between 2 and 4 miles off the W side of the island.

Euphrates Patch (27°02'N., 56°24'E.), lying at the SW extremity of the island, has a depth of 2.4m and is marked S by a lighted buoy.

A constricted channel separates the shoal flats extending N of Hormoz from the shoal flats fronting the mainland; channel depths may best be seen on the chart.

Anchorage can be taken in the channel N of the island, in depths of 12 to 14m, mud, with the ruined fort bearing about 231°, distant 0.5 mile. Small vessels can anchor near the village. During the E winds of the nashi, vessels may shift to the W side of the N extremity of Jazireh-ye Hormoz. Tidal currents set WNW and ESE at a rate of 1.5 to 2 knots.

Directions.—From a position about 2 miles E of the E side of the island, a vessel should steer NW until the fort on the island bears about 262°. Then steer W, passing close S of the lighted buoy moored ENE of the island. When the fort bears 228°, change course and steer on this bearing to the anchorage.

Vessels proceeding W from the anchorage should pass about 0.4 mile N of the fort, the track is 085° and will lead through the channel in a least depth of about 6.4m. When the high peak of Jazireh-ye Larak bears 188°, course may be changed W or SW as required.

Bandar-e Shahid Banohar (Bandar Abbas) (27°09'N., 56°12'E.)

World Port Index No. 48520

13.31 Bandar-e Shahid Banohar (Bandar Abbas) is located on an open bay about 5 miles W of the town of Bandar Abbas, and is the main base for the Iranian Navy. The port is protected by a breakwater.

Winds—Weather.—See paragraph 13.1 for further information.

Tides—Currents.—Spring tides rise about 3m at Bandar-e Shahid Banohar, while the neap rise is about 2.1m. At the merchant anchorage, the flood sets WNW while the ebb sets ESE, both attaining rates of 2 to 3 knots. Off Bandar-e Shahid Banohar, the currents set E and W, with rates up to 3 knots. Within the breakwaters, the currents are negligible.

Depths—Limitations.—The approaches to the merchant anchorage have a least charted depth of 14.6m, but shoal ground which has already been described lies off the land and islands along the route.

An obstruction, with a depth of 21.5m, is charted about 5 miles SSW of Jazireh-ye Hormoz.

Bandar-e Shahid Banohar is entered through a channel dredged (2014) to a depth of 10.5m. The channel leads to a turning basin of the same depth, which provides access to the remainder of the port. Silting can be expected in the port.

A berth, which can accommodate vessels up to 14,000 dwt, lies on the W side of the turning basin.

The Commercial Basin, dredged (2014) to a depth of 10.5m, lies N of the turning basin and provides six berths, with a total length of 1,050m, along its W face, although there are charted depths of 10.6 to 11.6m along the range line; A T-headed oil pier, which can accommodate a vessel with a maximum draft of 10.0m, lies off the E side of the entrance to the Commercial Basin, while a bulk solid berth lies close N of the oil pier.

The Naval Basin, E of the turning basin, was dredged (2014) to a depth of 10.5m. Several berths are devoted to military use. The piers along the E side of Commercial Basin are also reported to be military installations. Use caution when berthing here, as problems have been reported.

Under normal circumstances, vessels with a maximum length of 183m and a draft of 10m can be accommodated. Vessels with a draft of up to 10.4m can enter at HW.

Aspect.—The town of Bandar Abbas stands on a bare sandy plain, rising to higher ground one or two miles inland.

A conspicuous white hotel stands on the shore SW of the town, with a pier carrying a sewage outfall extending 0.2 mile seaward of it.

A conspicuous wreck is charted about 4 miles SSE of the pier. A red and white checkered tank, showing red lights, stands 2.5 miles NNW of the harbor entrance. A conspicuous water tower stands about 2 miles NNE of the harbor entrance.

A prominent water tank and several silver-colored tanks stand on the NW and NE corners of the Commercial Basin.

Two conspicuous chimneys, painted red and white in bands, stand about 6 miles WNW of the harbor entrance. Three conspicuous cranes stand alongside the drydock on the N side of the Naval Basin.

Pilotage.—Pilotage is compulsory. Vessels are usually boarded about 1 mile off the Bandar-e Shahid Banohar breakwaters. The port office requires 48 hour notice prior to arrival.

It is recommended that, due to the existence of unlighted and unmanned vessels lying in or near the port approaches, a pilot should be embarked in the outer approaches to the port before entering the anchorage areas.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for regulations pertaining to vessels in Iranian waters.

Upon arrival at the anchorage, vessels should contact Port Control on VHF channel 13 or 16 and forward arrival information.

All cargo documents (manifests, bills of lading, etc.) should indicate the discharge port as either "Shadid Rajaee Special Economic Zone" or "Shahid Rajaee SEZ."

Anchorage.—Merchant vessels can find anchorage in the Merchant Vessel Anchorage, charted 5 miles SE of the harbor, in charted depths of 11.7 to 21.0m. Naval vessels anchor in the charted areas SW of Bandar-e Shahid Banohar harbor entrance, in charted depths of 7.0 to 11.6m. Anchorage is prohibited in an area, best seen on the chart, off the town of Bandar Abbas.

Directions.—The pilot boarding ground or the anchorages may be approached from seaward by passing either side of Jazireh-ye Larak, keeping in mind the foul ground in the area and the strong sets encountered here.

Take care when using the 000° entrance range for Bandar-e Shahid Banohar, as the range beacons are reportedly difficult to see until about 0.5 mile off the harbor entrance.

Caution.—Prolonged periods of winds from the N or NE can reduce the sea level by as much as 1m.

A hovercraft approach area, best seen on the chart, lies close W of the port. Mariners should proceed with caution in this area due to the possible presence of hovercraft.

A new basin, currently (2012) unsurveyed, has been dredged on the W side of the harbor close W of the charted turning basin.

13.32 Bandar-e Shahid Rejaie (27°06'N., 56°04'E.) (World Port Index No. 48495) is situated about 8 miles WSW of Bandar Abbas.

Bandar-e Shahid Rejaie Home Page

http://shahidrajaeeport.pmo.ir

Ports and Maritime Organization Home Page

http://www.pmo.ir

Depths—Limitations.—The port is approached via a 4-mile long and 250m-wide channel. The channel, which is marked by lighted buoys and a lighted range, has a least charted depth along its centerline of 15.5m.

Container, ro-ro, and bulk vessels up to 100,000 dwt, with a maximum length of 245m and a maximum draft of 12.5m can be accommodated.

The bunker terminal, on the E side of the harbor close N of the Petroleum Pier, has a depth of 9.7m alongside.

Berth information is given in the accompanying table titled **Bandar-e Shahid Rejaie—Berth Information**.

Extensive land reclamation is underway in the vicinity of Basin No. 3. The charted 14m maintained depth along the quay head between Basin No. 2 and Basin No. 3 has been discontinued; lesser depths have been reported (2009) in this area.

Bandar-e Shahid Rejaie—Berth Information

Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
Petroleum Pier					
No. 1	210m	14.0m	190m	11.2m	Can accommodate vessels up to 70,000 dwt.
No. 2	210m	14.0m	220m	11.5m	Can accommodate vessels up to 70,000 dwt.
Basin No. 1					
No. 3	200m	11.5m	200m	10.2m	Vegetable oil and general cargo.
No. 4	200m	12.0m	290m	12.0m	Containers.
No. 5	200m	12.5m	290m	12.5m	Containers.
No. 6	200m	12.5m	290m	12.5m	Containers.
No. 7	200m	12.5m	290m	12.5m	Containers.
No. 8	200m	14.0m	290m	11.7m	Containers.
No. 9	200m	5.5m	140m	4.5m	Containers and ro-ro. Can accommodate vessels up to 45,000 dwt.
No. 10	200m	9.8m	290m	10.5m	General cargo. Can accommodate vessels up to 45,000 dwt.
No. 11	200m	11.5m	290m	10.5m	General cargo. Can accommodate vessels up to 45,000 dwt.
No. 12	200m	10.3m	290m	10.5m	General cargo. Can accommodate vessels up to 45,000 dwt.
No. 13	200m	11.5m	290m	10.5m	General cargo. Can accommodate vessels up to 60,000 dwt.
No. 14	200m	11.5m	290m	10.5m	General cargo. Can accommodate vessels up to 60,000 dwt.
Quay head between Basin No. 1 and Basin No. 2					
No. 15	200m	11.0m	290m	12.5m	Bulk cargo. Reported (2012) depth alongside of 12.9m. Can accommodate vessels up to 60,000 dwt.
No. 16	200m	10.0m	290m	12.5m	Bulk cargo. Can accommodate vessels up to 60,000 dwt.
No. 17	200m	10.0m	290m	12.5m	Bulk cargo. Can accommodate vessels up to 45,000 dwt.
No. 18	200m	10.0m	290m	12.5m	Bulk cargo. Can accommodate vessels up to 45,000 dwt. Reported (2012) depth alongside of 12.6m.
Basin No. 2					
No. 19	200m	10.0m	290m	10.5m	General cargo. Can accommodate vessels up to 45,000 dwt.

Bandar-e Shahid Rejaie—Berth Information					
Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
No. 20	200m	10.0m	290m	10.5m	General cargo. Can accommodate vessels up to 30,000 dwt.
No. 21	200m	11.5m	290m	10.5m	General cargo.
No. 22	200m	11.5m	290m	10.5m	General cargo.
No. 23	200m	11.5m	290m	10.5m	Vegetable oil and general cargo.
No. 24	200m	11.0m	190m	10.2m	General cargo.

Hormozgen Steel Marine Complex Terminal (27°07'N., 56°07'E.), which handles bulk steel products and crude oil, is situated 3 miles NE of Bandar-e Shahid Rejaie. The terminal consists of a trestle jetty extending 1 mile SE from the shore. The jetty head provides berthing length of 312m and can be approached from the E through a channel dredged to a depth of 15m and marked by a directional light on a bearing of 272°. Vessels up to 60,000 dwt can be accommodated. A restricted area, as shown on the chart, has been established close N of the dredged channel. It has been reported (2009) that the terminal lies about 500m W of its charted position and two jetties have been constructed W of the facility.

Bostanu Shipyard (27°03'N., 55°58'E.) is a new shipyard being constructed in a protected basin about 5.5 miles WSW of the entrance to Bandar-e Shahid Rejaie.

It has been reported (2007) that a new container terminal, which will have an alongside depth of 14m, is under construction on the W side of Basin No. 2.

Aspect.—Lights are shown at the harbor entrance.

Pilotage.—Pilotage is compulsory. Pilots board, as follows:

1. Large vessels—in the Merchant Vessel Anchorage charted SE of Bandar-e Shahid Banohar.
2. Smaller vessels—near Fairway Lighted Buoy.

Small vessels, with prior arrangement, board the pilot near the breakwaters.

Regulations.—It was reported that vessels should anchor in the Merchant Vessel Anchorage off Bandar Abbas to pick up port officials.

Upon arrival at the anchorage, vessels should contact Port Control on VHF channel 13 or 16 and forward arrival information.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Bandar-e Shahid Rajaie Port Radio
2. VHF: VHF channels 13, 16, 18, 19, 21, and 25
3. Telephone: 98-761-5563966
   98-761-5563967
4. Facsimile: 98-761-5564056
5. Telex: 88-214278 BNDR IR
   88-214287 BNDR IR

Caution.—Prolonged periods of winds from the N or NE can reduce the sea level by as much as 1m.

Coast of Iran—Bandar Abbas to Ras-e Bostaneh

13.33 Toreh-ye Khowran (Clarence Strait) (26°58'N., 55°44'E.), which separates Jazireh-ye Qeshm from the coast of Iran, is contracted near its center to a width of about 2 miles between **Ras-e Pahel** (26°59'N., 55°45'E.) and **Ras-e Laft** (26°57'N., 55°44'E.).

A submarine gas pipeline is laid across the strait adjacent to the points. The E half of the strait as far as Ras-e Laft is navigable by vessels of moderate size, with the least depth in the fairway appearing to be 8.2m. To the W of Ras-e Laft, the first part of the strait is divided by an island into two channels, with the passage leading E of the island being the recommended one.

From the juncture of these two passages, at the SW end of this island, the channel to the W end of Toreh-ye Khowran is known as Khowr-e Jafari.

The strait W of Ras-e Laft appears to have a least depth in the fairway of 5.1m, which is found in the W entrance. With good visibility, and sounding continually, transit of the strait is possible for a shallow draft vessel with local knowledge.

The passage should be made in daylight and will take 8 or 9 hours. If possible, negotiate the narrow center of the strait at LW and slow speed so the banks will be visible.

Caution is advisable in attempting transit as there are no buoys, surveys are unreliable, and currents are strong.

A mountain range extends W for about 50 miles from Ras-e Pahel. This range is separated from the main range N by a wide valley. In it are mountains attaining heights over 1,220m. From Finger Peak, located about 5 miles inland from the shore of **Bandar-e Biscoe** (26°55'N., 55°52'E.), a range trends N to within 1.5 miles of the coast, where it turns W and forms a coastal range of low, irregular hills.

Sugar Loaf Hill, near its W end, is the only conspicuous summit of this range. Shaikh Musa, a detached hill, rises 1.5 miles W of Sugar Loaf Hill. The S side of this hill is sheer, forming a good mark for vessels approaching from E.

Ras Miln (Ras Milne) (27°00'N., 56°10'E.) is a bold and conspicuous promontory. Jabal Salsul is a peaked, precipitous hill rising 0.5 mile SSE of Ras Miln.

Caution.—A dangerous wreck, marked close E by a lighted buoy, lies in the E approach to Toreh-ye Khowran, about 4.5 miles ENE of the E extremity of Jazireh-ye Qeshm.

13.34 Jabal Horton (26°59'N., 56°06'E.) is a conspicuous wedge-shaped hill backing a low point. A detached patch of sand and rock, with a depth of 2.7m, lies about 2 miles W of Jabal Horton.

Ras-e Kuveh (26°57'N., 55°59'E.) is a steep-to well-defined point backed by a high plateau. There is a water tank near the

point. Zaynabi is a high tableland which parallels the coast WSW of Ras-e Kuveh.

It has been reported (2004) that a 600m long jetty has been built at Ras-e Kuveh. The jetty is approached from NE using a channel, marked by lighted buoys, lying off the N coast of Jazireh-ye Qeshm and passing S of Bostanu Patches. Depths of as little as 10.7m exist in this marked channel.

Sheltered anchorage can be taken, in 8.2 to 12.8m, good holding ground, between **Bostanu** (27°05'N., 56°01'E.), a village, and **Bostanu East Bank** (27°04'N., 56°05'E.).

Laft Qadim (26°57'N., 55°46'E.), a small rocky point with a pier nearby, has a mosque and water tank in the vicinity that are fairly conspicuous. There are villages between Laft Qadim and a plateau inland. A shoal, with a depth of 4.6m, lies 0.5 mile NNE of Ras-e Laft.

Sheltered anchorage can be taken, in a depth of 11 or 7.5m, about 0.3 and 0.2 mile, respectively, NW of Ras-e Laft. Tidal currents set W on a rising tide and E on a falling tide.

Caution.—An overhead power cable, vertical clearance unknown, crosses the channel E of Ras-e Laft, in the general vicinity of charted prohibited anchorage area. The cable is supported in its center by a tower.

13.35 Khowr-e Guran (26°53'N., 55°43'E.), although tortuous, is the preferred channel, entered close W of Ras-e Laft, that leads through the W part of Toreh-ye Khowran. The least depth in the channel is 7.3m in the very constricted passage about 3 miles N of **Guran** (26°43'N., 55°37'E.).

Mangroves mark the sides of the channel; a beacon marks the S side of the channel at its entrance W of Ras-e Laft.

Laft (26°54'N., 55°46'E.) is a small town at the foot of a high hill which rises from the beach to the cliffs. A fort, in ruins, with three former towers, and a very high hill 1 mile ENE, are both prominent.

13.36 Khowr-e Jafari (26°44'N., 55°34'E.), in the W side of Toreh-ye Khowran, extends W for 16 miles, from the junction of the N channel and Khowr-e Guran, the preferred channel described above, to Ras-e Basa idu.

The mainland on the N side of the channel is low and fronted by an extensive sand bank; the S side of the channel is fringed by mud flats, which partly dry in places and extend as far as 1 mile offshore.

A middle ground, with a depth of 2.7m, lies in the channel NE of Ras-e Basa idu and N of **Gumri** (26°38'N., 55°21'E.).

Gumri and **Dar Kuh** (26°39'N., 55°24'E.) are villages with date groves that can be seen from the channel. The channel S of Ras-e Basa idu is reported to have a least depth of 6.4m, but charted depths are considerably less than this.

Directions.—From a position about 3 miles WSW of **Guran** (26°43'N., 55°37'E.), proceed through the fairway by keeping about 0.5 to 1.5 miles off the S shore until N of **Kunar Siah** (26°40'N., 55°25'E.).

Then change course S and proceed along the S edge of the extensive sand bank on the N side of the channel in a depth of 7.4m until past the middle ground, when course is changed SW for the anchorage off Ras-e Basa idu.

Ras-e Basa idu (26°39'N., 55°16'E.), on which the ruined village of Basa idu is located, is a cliff, about 6.1m high, with a level summit. A building, in ruins, is conspicuous when approaching the cliff from the SW.

Beacon Shoal (26°38'N., 55°14'E.), partly drying in places and marked by a lighted buoy, consists of rock at its NE end and sand elsewhere. A white wooden beacon, with a cross topmark, stands on the NE end of the shoal. There is a sand spit extending over 3 miles S of the shoal and mud flats between the shoal and the shore to the E.

The Gut (26°40'N., 55°16'E.), an area about 183m wide and at least 20.1m deep, lies about 0.4 mile NW of Ras-e Basa idu.

Anchorage can be taken, in depths of 9.1 to 12.8m, good holding ground of clay, about 0.3 mile NW of Ras-e Basa idu, or farther NE. This anchorage is sheltered from the shamal by Beacon Shoal. Care should be taken to avoid anchoring in The Gut.

Vessels lying to a single anchor, when the wind direction is in opposition to the tidal current, ride very uneasily. The tidal current rate is 3 knots at springs.

Caution.—The roadstead off Ras-e Basa idu is not recommended for vessels with a draft over 6.1m, and those drawing more than 5.1m should not enter the roads until the tide has risen above mean sea level. At night, vessels should anchor, in about 11m, off the W edge of The Flat and await daylight.

13.37 A range of mountains extends W from the coast on the N side of the SW entrance of Toreh-ye Khowran. The E end of this range is a rounded eminence about 10 miles N of Ras-e Basa idu.

Grubb's Notch (26°50'N., 55°00'E.) is a prominent mountain of the range with a saddle-shaped summit 900m high. Jabal Lengeh, a conspicuous mountain, which rises to a.height of 1,190m, stands 12 miles W of Grubb's Notch. This eminence is light brown in color, appears dome-shaped, and is visible 45 miles on a clear day.

The terrain between this mountain and Kuh-e Bostaneh, about 19 miles SSW, is an extensive plain which becomes swampy after rains.

The coast extending SW from the low point located about 5 miles NNW of Ras-e Basa idu is both low and hilly. A mountain rises 405m about 5 miles W of the point. A long light-colored ridge and a table-topped hill, rising 7 and 9 miles SW of the mountain, are conspicuous.

Bandar-e Hamiran (Bandar-e Homeyran) (26°41'N., 55°06'E.) is a bight bound SW by **Ras osh Shavari** (26°39'N., 55°04'E.), a low, sandy point. A shoal, with a least depth of 3.2m, lies l.5 miles off the head of the bight.

Anchorage can be taken, in a depth of 7.3m, between the shoal and coast.

Bandar-e Kong (26°35'N., 54°56'E.) is a town extending along the sandy coast which contains many fine houses and mosques. The coastal waters along this entire stretch of coast is imperfectly surveyed and should be approached with caution.

Landing on the beach near the town is bad at LW, as the sand dries out in ridges for about 0.5 mile, with depths of 0.3 to 0.6m between the ridges.

Anchorage, sheltered except from SW squalls, can be taken, in a depth of 9m, mud, about 2 miles off the town.

13.38 Bandar-e Lengeh (26°33'N., 54°53'E.) consists of many formerly well-kept houses standing on a narrow strip of foreshore which is clearly visible in the forenoon.

A conspicuous tall minaret, painted in yellow with a green top, stands at the SW end of town. Also prominent are a white water tower and radio masts marked by obstruction lights.

Anchorage can be taken, in 10.1m, good holding ground of clay, about 0.5 mile SE of the customhouse. Small craft can anchor closer inshore, in depths of 7.9m. The anchorage is sheltered except from the squalls, which raises a heavy sea. A conspicuous stranded wreck lies about 5 miles E of the town.

Ras-e Kharyu (26°31'N., 54°51'E.), a low and sandy point with a rocky beach, is reported to show up well on radar.

Shenas (26°31'N., 54°50'E.) is a bight located between Ras-e Kharyu and Ras-e Shenas, a low and sandy point about 3.25 miles further SW. Shoals of less than 5.5m lie as far as 0.5 mile off the shores of the bay. A village is situated about 3 miles inland. About 1 mile WNW of Ras-e Shenas are high, white sand hills rising near the beach.

Tidal currents off the bay attain a rate of 1.5 knots, causing the water to be discolored.

Anchorage, sheltered from the shamal, can be taken, in depths of 9 to 12.8m, in Khalij-e Shenas. The nashi does not raise a heavy sea as the bay is protected by The Flat and Qeshm.

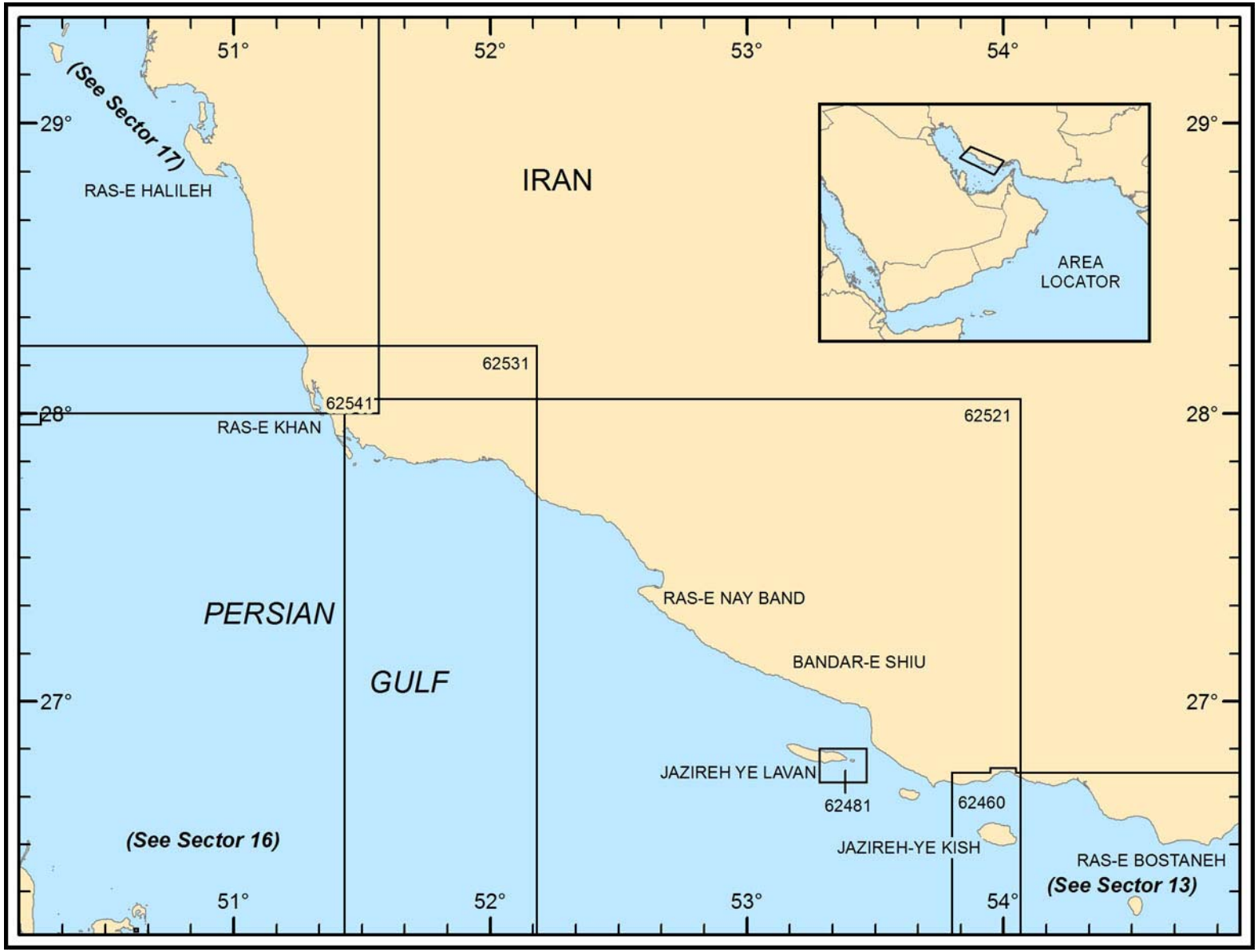
13.39 Ras-e Bostaneh (26°30'N., 54°37'E.) is a low point, brown in color, located at the W end of a slight recession of the coast, which is fronted by a rocky beach and shoals of less than 5.5m lying as far as 0.5 mile offshore.

A light is shown from a beacon on the point. There is a fishing village 2 miles E of the point, off which anchorage can be taken, in depths of 7.3m.

Kuh-e Bostaneh (26°34'N., 54°41'E.) is a prominent detached group of dark volcanic hills of very irregular outline. The highest part is a ridge reported near the middle of the group. Near the S end of this ridge, about 5 miles NE of Ras-e Bostaneh, is a peak, about 533m high, which resembles a tower. The peak is conspicuous, especially when seen from E or W.

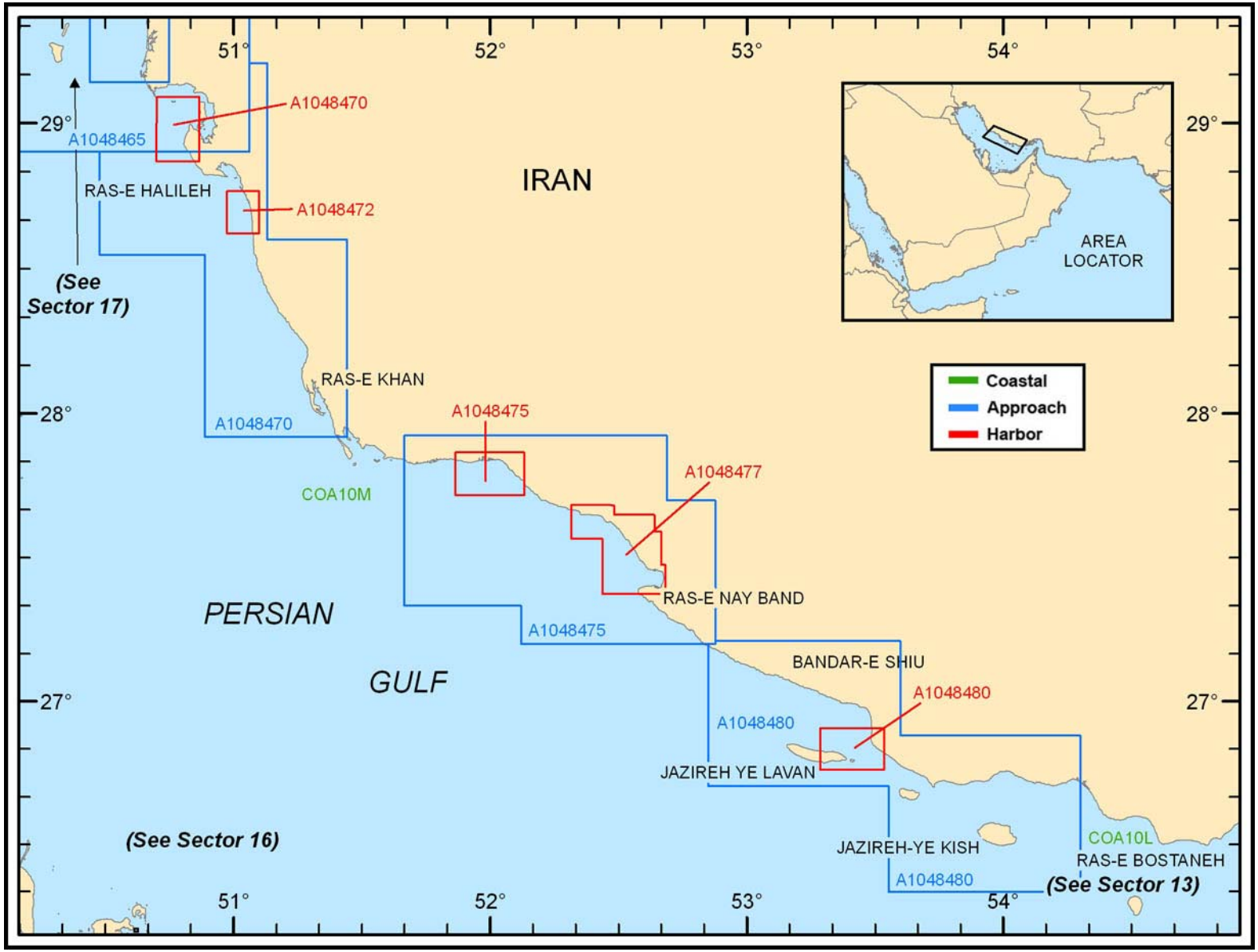
Between Kuh-e Bostaneh and the hills NW of Bandar-e Lengeh, the land rises in a gentle slope from the coast to a height of about 91m, but then falls in cliffs to the S edge of the low plain between that mountain and Jabal Lengeh.

Behind Kuh-e Bostaneh are several dark-colored summits; the peak situated about 17 miles NNW of that mountain is about 457m high, haycock-shaped, and conspicuous.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **14** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 14

THE PERSIAN GULF—IRAN—RAS-E BOSTANEH TO BUSHEHR

Plan.—This sector describes the coast, islands, and dangers along the NE side of the Persian Gulf from Ras-e Bostaneh to Bushehr. The sequence of description is WNW and NW from Ras-e Bostaneh.

General Remarks

14.1 Winds—Weather.—The shamal is the most common wind in this area and blows from between WNW and NNW. The winter shamal is often squally and more violent but of shorter duration than the summer shamal. The latter is a persistent NW wind which blows for several days at a time in June and July, with lulls at night.

The shamal normally slackens considerably in August. The kaus is a SE wind. The topography or shape of the land in any particular area has a tendency to affect or modify wind direction and velocity. Strong and generally irregular currents are reported off several coastal areas.

Aspect.—The NE side of the Persian Gulf between Ras-e Bostaneh and Bushehr includes about 355 miles of mainland coast and several small off-lying islands. In general, the maximum offshore depths range from about 56 to 92m. The coastal plains are mostly narrow and are backed by ranges of high rough mountains which generally run parallel to the coast.

Regulations.—All vessels heading for Iranian ports should report to Bandar Abbas Port Control on passing **Ras al Kuh** (25°48'N., 56°17'E.), stating their ETA at the Strait of Hormuz and their destination. If clearance is not received before passing Bandar Abbas, vessels should proceed to the Bandar Abbas anchorage. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Anchorage.—The entire coast, which trends NW, is exposed to the shamal or the kaus. None of the anchorages along this coast afford shelter, except for small craft, from both these winds.

Anchorage can be taken offshore along a considerable part of this coast. Bottoms are mostly mud with some variations of sand, coral, and gravel.

Caution.—It has been reported that some charted oil production platforms in the Persian Gulf may have been removed. In many cases, all that remains of the platforms are pipes extending from 3.1 to 6.1m above the waterline. These pipes do not show up well on radar and are a hazard to navigation.

It has been reported (2007) that unannounced missile firing exercises may be conducted SW of Bushehr in an area bounded by lines joining the following positions:

a. 28°37'N, 50°31'E.
b. 28°43'N, 50°55'E.
c. 28°11'N, 51°17'E.
d. 28°11'N, 51°03'E.

Ras-e Bostaneh to Ras-e Nakhilu

14.2 Ras-e Bostaneh (26°30'N., 54°37'E.) is described in paragraph 13.38. The coast for about 160 miles NW is indented by several open bights, with villages located along the shores at the head of the bights.

The major off-lying islands off this coast are inhabited, except for **Jazireh-ye Shotur** (26°48'N., 53°25'E.), and support sparse scattered cultivation. All of the islands have gentle slopes rising to inland plateaus.

The coastal area in the SE part of this stretch consists of a low plain, from which rise disconnected rough hills backed by mountainous foothills.

From the plain which backs Bandar-e Charak to the plain which backs Bandar-e Nakhilu, there is a narrow coastal plain closely backed by steep rough ridges paralleling the coastline.

From NW of Bandar-e Nakhilu, the coastal plain, where existent, is broken, narrow, and closely backed by steep rugged ridges and hill masses.

Near Ras-e Nay Band, the cliffy shore is backed by an almost flat plateau. Many small fishing villages are found along the coast. Anchorages of varying size and degree of shelter from the shamal and other winds are available along the coast and off the islands.

The most important anchorages, all open to the shamal, are in the bights fronting the villages of Bandar-e Moghuyeh, Bandar-e Charak, and Nakhilu; those off Chiruyeh, Jazireh-ye Kish, and Jazireh-ye Lavan are all sheltered from the shamal.

Khalij-e Moghuyeh (26°35'N., 54°32'E.), an open bay, has low sandy shores backed by broken ground.

Shoal flats, with depths of 5.5m, front the shores of the bay and extend at least 2 miles off **Ras-e Yarid** (26°35'N., 54°26'E.), where its outer edge is steep-to and marked by discolored water.

Kad Forur (Forur Shoal) (26°26'N., 54°32'E.), with a least depth of 4.1m, is composed of coral, rock, shell, and sand. Between this shoal and Ras-e Bostaneh, the tidal currents are strong over irregular depths, causing tide rips in places.

14.3 Bandar-e Moghuyeh (26°36'N., 54°30'E.), a large village at the head of the bay, has several towers and a fort with three conspicuous, square towers located behind the village.

Anchorage can be taken on the E side of the bay, about 1 mile offshore and in front of the village. There are depths of 7.3m, clay, at the anchorage, which is considered dangerous during the shamal, but affords good shelter from the kaus. The bay is open to the suahili, which probably raises a heavy sea, but the holding ground is good at the anchorage.

Bandar-e Hasineh (26°39'N., 54°22'E.) is a village with a large fort fronting it. The terrain backing the village rises to a rugged group of hills terminating in **Kuh-e Namaki** (26°40'N., 54°26'E.). Anchorage, which is open to the shamal, can be taken off the village.

Bandar e-Charak (26°44'N., 54°17'E.), a coastal town with several towers, has a customhouse. The house of the local ruler and the ruins of a fort standing on a hill are prominent. A water tank is conspicuous on the S side of a hill rising 1.5 miles W of town.

Two rocky points lie 2 and 3 miles WSW of Bandar e-Charak; **Ras-e Tahuneh** (26°42'N., 54°12'E.), on which is the village of Bandar-e Tahuneh, is 1.5 miles farther WSW. The foreshore between the points is rocky.

14.4 Bandar-e Korzeh (26°45'N., 53°58'E.), a village at the head of a small bay which is steep-to, is located on a plain which extends to the foot of a range. Anchorage, sheltered from the shamal, can be taken about 2 miles SSE of the village.

Kalat (26°43'N., 53°54'E.) is a fishing village with a conspicuous, round tower standing in a fort on a hill behind the village. Other towers stand in Kalat; about 1 mile E are several water tanks.

Anchorage can be taken, in about 7m, sand, close offshore S of Kalat, with the W extremity of the land bearing 260°. The anchorage is sheltered from the shamal and partially from the nashi, about 0.5 mile offshore, little shelter will be obtained.

Landing at the village is reported bad and often impracticable. Depths in the anchorage may be less than charted.

Chiruyeh (26°43'N., 53°45'E.) is a village on the W side of a bay whose W entrance point is **Sar-e Chiruyeh** (26°42'N., 53°44'E.). The sea breaks on a flat extending offshore between Kalat and Sar-e Chiruyeh.

The village has a conspicuous fort with a square tower at each corner and a prominent tower standing on the shore 0.4 mile NE of the fort. Sare Chiruyeh is low and steep-to on its S and E sides.

A 5.5m shoal extends off the point for about 0.5 mile and less water than is charted is reported 1.5 miles SW of the point. Landing can be made on the steep-to sandy beach opposite the village.

Anchorage, open to E winds but sheltered from the shamal, can be taken off the village, in a depth of 14.6m. The coast between Sar-e Chiruyeh and **Ras-e Nakhilu** (26°51'N., 53°29'E.) rises steeply to hills, which decrease and level off as the latter point is reached.

The shore NW of Sar-e Chiruyeh is fronted by a sandy shoal of 5.5m which extends at least 1 mile offshore and is marked by discolored waters. Local craft anchor on this shoal but the area is open to E weather.

Ras-e Nakhilu is low and poorly defined, but is marked by a lighted beacon. The coast in this vicinity should not be approached in depths of less than 30m.

Off-lying Islands and Dangers

14.5 Jazireh-ye Qeys (Jazireh-ye Kishl) (26°32'N., 53°59'E.), an island light brown in color, is difficult to distinguish at night. The shores of the island are low and consist of sandy beaches between rocky points. Inland the terrain rises to a plateau about 44m high, with the E and W ends of the island formed of low cliffs. There are villages along the N side of the island; a light is shown on the S side. Two conspicuous water towers stand near the point. Near the center of the island there are two prominent radar domes.

Reefs fringing the island are mostly steep-to, extending as far as 1 mile offshore in places. A conspicuous stranded wreck, lying off the W side of Jazireh-ye Qeys, provides a good radar target. Vessels passing S of the island should keep in depths greater than 36m; passing N of the island is not recommended at night unless visibility is good, and even then vessels should keep at least 2 miles offshore unless proceeding to an anchorage.

Tidal currents in the passage between Jazireh-ye Qeys and the mainland are reported to be strong and very irregular.

Sare Masheh (26°34'N., 54°01'E.), the low sandy NE point of the island, has a spit, with a depth of 6.4m, extending nearly 0.5 mile offshore. A ruined fort with two towers stands on the point.

Masheh (26°33'N., 54°02'E.) is a village strung out for 1 mile along the coast S of the point. There is a military post in the village, several large buildings, and a jetty. This jetty has three berthing faces, with a total berthing length of 600m. The N face is 200m long and can accommodate a maximum draft of 5.5m at HW. Vessels up to 2,500 dwt, with a maximum length of 60m, can be handled at the jetty. Pilotage is not available.

In summer, good anchorage can be taken, in 14.6 to 16.5m, mud, off the N part of the village with the fort on Sar-e Masheh bearing between 283° and 294°.

In winter, anchorage can be obtained in the above position or N of Sar-e Masheh, in 18.3m, with the fort bearing 180°, distant about 0.5 mile. The latter position is partially sheltered from the shamal, which in this locality blows from W.

Anchorage can also be taken, in 19.5m, about 2 miles off the N side of the island, but it is exposed to the prevailing winds.

A prohibited anchorage area, located NE of Jazireh-ye Qeys, is bounded by lines joining the following positions:

a. 26°40'27"N, 54°11'00"E.
b. 26°43'35"N, 54°15'44"E.
c. 26°43'37"N, 54°15'50"E.
d. 26°43'02"N, 54°16'58"E.
e. 26°39'05"N, 54°11'00"E.

Sambarum Bank (26°34'N., 53°44'E.), steep-to, with a depth of 10m at its S end and marked on its S side by a lighted buoy, lies about 9 miles W of Jazireh-ye Qeys.

14.6 Jazireh-ye Hendorabi (26°40'N., 53°38'E.), a brownish-colored island, is difficult to distinguish at night. The E and W extremities of the island consist of low cliffs. Reefs fringe the greater part of the island, extending as far as 1 mile offshore in places.

There is a village midway along the N coast. Tidal currents setting toward the island and coast in its vicinity are reported to be strong N of the island.

Anchorage, open to the shamal, can be taken off the village, in depths of 10 to 15m, rock.

Jazireh-ye Shotur (26°48'N., 53°25'E.) is a very small island lying 0.5 mile E of Jazireh-ye Lavan. The island is fringed with reef extending up to about 0.1 mile offshore; a bank, with depths of less than 11m, extends about 1 mile S and the same distance E from it.

A 12.9m patch is about 4 miles ESE of Jazireh-ye Shotur. A light is shown from the island.

During NW winds, anchorage can be taken, in 7.3m, about 0.8 mile SSE of the E end of the island.

Jazireh-ye Lavan (26°48'N., 53°18'E.), a brownish-colored island, rises to hummocks from its low E and W extremities.

There is a prominent tower standing in Lazeh, a village located 1 mile NW of the E end of the island. A red-and-white painted radio mast, showing red obstruction lights, stands on the E end; another mast stands about 0.5 mile WSW.

The installations of an oil terminal are located in the E part of Jazireh-ye Lavan, where several flares, oil tanks, and conspicuous yellow towers can be seen. At night, the glare from the flares may obscure the navigational lights.

A spit, with depths of 3.7 to 4.6m, extends off the E end of the island.

The passage between Jazireh-ye Lavan and Jazireh-ye Shotur should not be used except by small craft. About 5 miles W of the cliffy SE end of the island is a low sandy point, on which stands the village of Qort, marked by a tower. The coast between Qort and the W end of Jazireh-ye Lavan consists of rocky cliffs fringed by reefs.

Landing can be made in a small bight located 2 miles E of the NW end of the island. Cliffs bordering the N coast of Lavan are reef-fringed. A bank, with depths of less than 10m, extends 1.5 miles N and W from the W extremity of the island.

Anchorage.—During SE winds, sheltered anchorage can be taken, in 7 to 13m, sand and rock, about 0.5 mile NE of Lazeh.

With the onset of a strong shamal it is necessary to get underway as the wind then blows from WNW.

Caution.—Jazireh-ye Lavan is extremely difficult to distinguish in hazy weather and soundings are of little use when approaching it. Vessels using the passage between the island and the coast in the vicinity of Ras-e Nakhilu should not close the coast in depths less than 27m. Tidal currents are quite strong between the islands and the coast.

Jazireh-ye Lavan Oil Terminal (26°48'N., 53°25'E.)

World Port Index No. 48480

14.7 The L-shaped pier of the oil terminal is located 2.5 miles W of the E end of the island.

Winds—Weather.—For most of the year, the wind is from NW, but sometimes, particularly during the winter, strong SE winds, sometimes lasting for several days, may occur. The loading pier is sheltered from NW winds but is exposed to winds from the S. Berthing may not be possible during SE winds.

Tides—Currents.—Tidal currents at the oil terminal change at about 1 to 2 hours after HW and LW; there are only short periods of slack water. During springs, rates of up to 2 knots are common. Sometimes unberthing is difficult during full ebb.

Depths—Limitations.—Tankers can berth alongside both sides of the outer arm of the pier, which is 378m long.

At No. 1 Berth, on the S side of the pier, tankers of 150,000 to 225,000 dwt, with a minimum length of 168m and a maximum departure draft of 19.2m, can berth alongside.

At No. 2 Berth, on the N side of the pier, tankers of 25,000 to 65,000 dwt, with a minimum length of 168m, a maximum length of 259m, and a maximum departure draft of 10.0m, can berth alongside.

The underkeel clearance required by the terminal is 0.9m at all times. Mariners are to be cautioned that the above-mentioned limitations are maximums and are subject to clearance.

Three submarine oil pipelines are landed 0.4 mile W of the root of the oil pier. The E pipeline is laid S for 75 miles to the Sassan Oil Field; the center pipeline is laid SSW for about 57 miles to the Rostam Oil Field. The latter pipeline passes 0.5 mile E of **Stiffe Bank** (26°25'N., 53°08'E.). The W pipeline is laid SW for 50 miles to the Bahram Oil Field, 7 miles SSE of Shah Allum Shoal.

Aspect.—Two sets of range lights, in alignment bearing 001.5° and 057°, mark the limits of the pipeline landing area.

Lights are reported to be shown from the head and elbow of the pier. Range lights, shown about 0.5 mile W of the oil pier, in alignment bearing 304°, lead to the pier.

Range lights, shown 0.5 mile W of the E extremity of the island, aligned 325.7°, lead to the cargo ship anchorage. A boat harbor, with depths of about 3.7m, is located at the SE end of the island.

Pilotage.—Pilotage is compulsory. A Mooring Master will board ships S of the terminal buoy, which is located about 2 miles SE of the loading dock. No ship may enter the terminal port area, which is identical with the prohibited anchorage area, unless a Mooring Master is aboard. Tugs are available.

Regulations.—The vessel's ETA must be sent via facsimile (98-212-2664295) to the Iranian Offshore Oil Company (addressed to Production and Planning and Export Coordination, attention Lavan Marine) 96 hours and 48 hours in advance. The message should include cargo, bunkers required, deballast time, and the size and number of connections for cargo or bunkering.

Vessels should begin calling the terminal (call sign: Lavan Marine) 4 hours before arrival on VHF channel 12.

Anchorage.—It is recommended that ships waiting to berth at the oil terminal anchor S of the E end of the island, about 3 miles SE of the terminal jetty, in depths of 27.4 to 36.6m. The holding ground is poor. Deep-draft ships should keep the E end of the island bearing more than 000° to avoid shoal water SW and S of Jazireh-ye Shotur.

The range lights, in line bearing 325.7°, will indicate the position for letting go the first anchor. Anchorage is prohibited within about 0.3 mile of either pipeline and within an area extending 0.5 mile offshore in the vicinity of the landing places of the pipelines and the oil pier.

14.8 **Stiffe Bank** (26°25'N., 53°08'E.), with a least charted depth of 27m, sand, shells, and coral, lies about 28 miles SW of Jazireh-ye Hendorabi.

A shoal, with a least depth of 10.4m, lies about 16 miles SE of Stiffe Bank.

Shah Allum Shoal (26°25'N., 52°30'E.), a steep-to, dangerous, and rocky shoal, with a least depth of 2.7m, lies about 34 miles W of Stiffe Bank and is marked by a light. A wreck, with a depth of 14.1m, lies S of the light. The shoal lies near the N end of a bank, over which the general depths are less than 37m.

Balal Oil Field (26°18'N., 52°33'E.), a lighted platform, stands about 9 miles SSE of Shah Allum Shoal. A submarine pipeline extends NE from the platform to Jazireh-ye Lavan.

Cable Bank (26°46'N., 52°32'E.) has a least charted depth

of 25m. A wreck, with a least depth of 35m, lies about 29 miles SW of the bank.

Caution.—Shah Allum Shoal should be given a wide berth.

Ras-e Nakhilu to Bushehr

14.9 Bandar-e Nakhilu (26°54'N., 53°30'E.), a coastal village located 4 miles N of Ras-e Nakhilu, affords anchorage, sheltered from E winds but open to the shamal, off the shore fronting the village.

Bandar-e Maqam (26°58'N., 53°29'E.), a village, has a conspicuous square fort and a triangular high cliff N of the village.

Anchorage can be taken, in 11m, mud, with the fort bearing 058° and about 0.5 mile off, or close off the edge of the bank in 7.3m with the fort bearing 063°, distant about 1 mile.

Bandar-e Shiu (27°05'N., 53°09'E.), a coastal village, has a large, square mosque with a fort close E.

There is a peaked hill about 0.5 mile ESE of the village; a prominent saddle-shaped hill rises 122m about 3 miles E of the village.

Paps (27°05'N., 53°12'E.) is a conspicuous mountain and landmark, especially when seen from the W. A boat harbor is located at the SE end of the village.

Anchorage can be taken, in about 9.1m, sand, about 0.5 mile S of the boat harbor.

Bustanu (27°06'N., 53°02'E.) is a village at the head of a small bay. A high rock ridge with a tower on its S end abuts the sea E of the village. Landing can be made at the SE end of Bustanu.

14.10 Shahin Kuh (27°07'N., 53°05'E.) is a flat-topped remarkable mountain, with a high S bluff and precipitous sides.

Anchorage, probably the best in the area, can be taken, in a depth of 12.8m, about 0.6 mile off Bustanu. There are depths of 9.1m lying 0.5 mile offshore and 3.7m close offshore.

This anchorage is well-protected against the shamal. A high conspicuous brown-colored slope appears on the coast close SE of the village of **Amariyeh** (27°08'N., 52°57'E.).

The coast extending NW to Ras-e Nay Band is bold, steep-to, and rocky, with low cliffs. There are no anchorages and scant shelter.

Ras-e Nay Band (27°23'N., 52°35'E.) is faced with a white rocky cliff. Southeast of the point, the coast rises gradually to the summits of white precipitous flat-topped cliffs. Tidal currents around the point and adjacent bay are weak. The point is marked by a light.

Khalij-e Nay Band (Bandar Nay Band) (27°26'N., 52°37'E.) is entered between Ras-e Nay Band and a low point about 5 miles NNE. Depths of 5.5m are general throughout the bay, with lesser depths existing as far as 2 miles offshore.

There is a reef off the N entrance point and another reef about 2 miles within the S entrance point. To enter the bay, pass S of a 5.5m rocky patch lying 1.5 miles SW of the N entrance point. The head of the bay is backed by high, steep hills, with a mountain range running parallel farther inland.

Anchorage in the bay is sheltered from the kaus but open to the shamal, which raises a heavy sea. There is anchorage, in 11m, with Nay Band, a village on the S shore of the bay about 3 miles E of Ras-e Nay Band, bearing between 135° and 180°, distant about 1 mile; poor holding ground is reported.

Anchorage, reported to be partly sheltered from the shamal, can be taken, in 5.5m, good holding ground, with a square house W of **Bid Khun** (Beyzeh Khan) (27°28'N., 52°39'E.) bearing 019° and a tower located 2.5 miles SE of the village bearing 086°. Landing can be made anywhere in the bay except during N or W winds, which raise a heavy surf.

14.11 The coast for about 40 miles NW of Khaluj-e Nay Band is backed by a range of mountains, the seaward side of which appears to be precipitous and mostly barren.

In several places, long valleys extending inland interrupt the coastal ranges.

Tidal currents, with a rate of 0.5 to 1 knot, generally parallel the coast. There are many villages along this coast.

Jabal Sir-i-Yalfal (Qolleh-e Siri) (27°33'N., 52°37'E.) is a conspicuous summit which appears as a great step, except from W, when it looks like a sharp notch.

Jabal Siri (Siri Ayanat) (27°49'N., 52°13'E.) is a prominent barn-shaped peak when seen from the offing, but is obscured by the coastal range when close inshore.

Asaluyeh (27°29'N., 52°36'E.) is a village marked by a ruined tower and extensive date groves. A reef, with a depth of 9.1m close seaward, extends 0.5 mile offshore from the point fronting the village. This reef should not be approached in depths of less than 13m.

Anchorage off the village is open to the shamal and the holding ground is poor. A vessel has anchored, in 12.8m, with the tower in the village bearing 090°.

14.12 Bandar-e Pars Terminal (27°32'N., 52°32'E.) (World Port Index No. 48475) consists of two harbors (Logistics Port and Petrochemical Port) and two SPMs.

The Petrochemical Port consists of seven solid-product berths and eight liquid-product berths. The berths have a reported alongside depth of 15m and can accommodate vessels up to 80,000 dwt.

The Logistics Port has a total berthing length of 2,600m, with alongside depths of 11 to 15m.

SPM No. 1, about 1.3 miles WSW of the entrance to the Petrochemical Port, is moored in a depth of 41m and can accommodate vessels up to 250,000 dwt. The SPM is surrounded by a restricted area with a radius of 1,000m.

SPM No. 2, lying about 1.25 miles SSW of SPM No. 1, is moored in a depth of 49m and is also surrounded by a restricted area.

The pilots for the SPMs board about 2 miles W of SBM No. 1. Pilots for the harbors board in the vicinity of the safe water lighted buoy (27°32.2'N., 52°28.1'E.).

Navigation without a pilot on board is prohibited within 2 miles of the SPMs.

The port can be contacted, as follows:

1. Telephone: 98-77-31376331
2. Facsimile: 98-77-31372312
3. E-mail: info@pseez.ir

An anchorage area is located about 3.5 miles NW of SBM No. 1. Anchorage is prohibited in the restricted areas best seen on the chart.

The anchorage area, SBMs, and port area are approached from the SW. The harbors are approached from the SSE and are entered between E and W breakwaters.

Taheri (27°40'N., 52°21'E.), a village at the head of a small bay, extends up the side of a hill. A large fort with two towers stands on a hill W of the village. Depths in the bay shoal gradually from 14.6m about 0.5 mile offshore.

Anchorage, partially sheltered from the shamal but exposed to the kaus, can be taken close offshore, in about 11m, good holding ground, with the W entrance point of the bay bearing 284°.

14.13 Bandar Taheri Offshore Terminal (27°39'N., 52°21'E.) (World Port Index No. 48533) consists of an SPM located W of the village. The minimum depth at the berth is 16m; a 2m underkeel clearance is recommended. Vessels up to 40,000 dwt, with a maximum length of 200m, can be accommodated.

Pilotage is compulsory and is available 24 hours; the berthing master boards 1 mile S of the SPM.

Vessels send their ETA 72 hours in advance by telex, through the agent, with confirmation sent 48 hours, 24 hours, 12 hours, and 6 hours prior to arrival. The ETA message should also be forwarded by telex (88-226755 NIGC IR) to the National Iranian Gas Company (NIGC).

The ETA message should contain the following information:

1. ETA.
2. Summer dwt.
3. Arrival displacement.
4. Cargo required.
5. Deballasting time.
6. Height of manifold when vessel is fully loaded.
7. Maximum arrival/departure draft.
8. Length overall.
9. Loading rate.
10. Distance from bow to center loading connections.
11. Derrick capacity.
12. Master's name.
13. Number of crew.
14. Consignee/charterers.
15. Flag.
16. Destination/last port.
17. Gross tons/nrt.
18. Call sign.

The terminal can be contacted, as follows:

1.	VHF:	VHF channels 6, 12, and 16
2.	Telephone:	98-21-84877172 98-21-84877173
3.	Facsimile:	98-21-84877788
4.	Telex:	88-226755 NIGC IR
5.	E-mail:	info@nigc.ir
6.	Web site:	http://www.nigc.ir

Anchorage is available 1.3 miles S of the SPM, in 35m, although the holding ground is not good, especially in SW winds and swells.

Anchorage is reported to be prohibited within 1 mile of the terminal.

14.14 Akhtar (27°42'N., 52°14'E.), a small village almost hidden by date groves, has a large round conspicuous mosque.

Anchorage, exposed to the kaus, can be taken, in 20m, good holding ground, about 0.5 mile SW of the mosque. Reefs lie about 0.5 mile and 0.7 mile offshore; they run parallel to the coast and form a channel in which small craft can anchor.

Anchorage, reported to be indifferent during a shamal, can be taken, in 18m, off **Tombak** (Ayanat) (27°44'N., 52°11'E.).

Kangan (27°50'N., 52°04'E.), an important town located behind a sandy beach, has a tower at its N end. There is a harbor, protected by stone breakwaters, with a pier, 150m long, for the use of local craft.

Anchorage can be taken, in 9m, about 0.5 to 0.7 mile off Kangan. The anchorage is partially sheltered from the shamal, but some swell rolls in and it is exposed to the kaus.

From NW of Kangan, a coastal range rises 610 to 915m, which at a distance appears to form part of the main range, but which obscures the latter from view when vessels are close inshore.

The mountains forming it are rugged, precipitous, and very irregular in outline.

A valley extends NW from the coast W of Kangan and separates the mountain ranges from a detached group of mountains between them and the sea.

Kuh-e Darang (28°05'N., 51°36'E.), the summit of this group, rises to 1,240m about 25 miles NW of Kangan.

Depending upon the direction from which it is seen, the mountain appears to have one peak or from three to five hummocks of equal height. When seen from SW, the hummocks are in range and a great bluff appears on the N side of the mountain.

Funnel Hill (27°52'N., 51°36'E.) is situated about 13 miles SSE of the summit of Kuh-e Darang and about 3 miles inland. It is table-topped, about 244m high, and has a small natural pillar that is a good landmark.

Deyyer (27°50'N., 51°56'E.), a village located on a low sandy stretch of coast, has a square fort with two towers, with a white two-story house nearby. A conspicuous isolated light-gray rock stands about 1 mile W of town. From a distance, the rock appears as a square tower.

Anchorage, good holding ground, can be taken off Deyyer, in a depth of 7m, with the fort bearing 000°, distant 0.5 mile. The anchorage affords much better shelter from the shamal than off Kangan, but it is exposed to the kaus. Large vessels should anchor, in 14 to 18m, mud, farther offshore.

At springs, the tidal currents attain a velocity of 1 to 2 knots at the anchorage. A small point, consisting of low cliffs, projects from the coast about 3 miles W of Deyyer; some sunken rocks, within which is a landing place, lie about 183m off the point.

Anchorage, in about 11m, can be taken about 0.5 mile off the point.

14.15 The coast for about 45 miles W and NW of Deyyer is fringed by swamps and fronted by shoals, which makes an approach hazardous.

Omm ol Karam (Qurma) (27°50'N., 51°33'E.) and **Nakhilu** (27°49'N., 51°28'E.) are low islets lying on an extensive shoal. Nakhilu is recognized by a square, stone tomb in the middle of the islet. A shoal, with a least depth of 3.7m, extends about 18 miles SE from Nakhilu. A drying bank of sand over rock, of which Ras ol Motaf is the extremity, lies on this shoal.

This drying bank has been reported to extend further W and S than charted.

Khowr-e Khan (27°48'N., 51°39'E.), with depths of 3.7 to 12.8m, is a channel between the mainland and the bank on

which lies Ras ol Motaf. The principal entrance, with depths of 4.6 to 11m, is N of the end of the bank.

A cairn on the NE end of Nakhilu aligned with the tomb on the same islet leads through the channel, which has no outlet at its NW end, but departure is effected N of Nakhilu in a depth of 1.5m.

14.16 Jabrin (27°52'N., 51°26'E.) is a low narrow sandy island marked by a light.

Tidal currents set W and E over the bank, whereas SW of it the currents appear to set NW and SE. During the SE setting of the current, a perceptible inflow into the area E of Ras ol Motaf has been observed. At springs, the currents attain a velocity of at least 2 knots.

Anchorage can be taken, in 7 to 9m, with local knowledge, off the E end of the bank on which lies Ras ol Motaf, with Funnel Hill bearing 330° and Jabal Siri bearing 073°. This anchorage affords the only good shelter from the shamal between it and Bushehr; more than 90 miles N, however, it is exposed to the kaus.

Vessels rounding the bank to reach the anchorage should not approach it in less than 20m; at night or in thick weather, vessels should not approach it in less than 27m. Lesser depths show discolored water.

Lights are shown, and fog signals are sounded, from some of the several gas structures situated within **Kangan Gas Field** (27°58'N., 51°15'E.), which extends up to 10 miles offshore between Ras-e Jabrin and Ras-e Khan. Mariners are cautioned to keep well clear of the area.

A well, with a least depth of 0.5m, has been reported to lie about 33 miles SW of Jabrin.

Ras-e Khan (28°00'N., 51°20'E.) is the S end of a very low sandy ridge that nearly covers at HW. The coast N and S of the ridge is extremely low and should not be approached in less than 26m.

Anchorage, affording indifferent shelter from the shamal to small craft, can be taken, in 3.7 to 4.6m, in a small bay SE of Ras-e Khan.

Khowr-e Ziarat (28°10'N., 51°19'E.) is a small creek lying 9 miles N of Ras-e Khan.

Anchorage, unsheltered, can be taken, in a depth of 7.3m, mud, about 2 miles off the entrance of Khowr-e Ziarat.

Balangestan (28°18'N., 51°15'E.) is a small village. About 2 miles NNW of this village is a conspicuous village situated on the bluff of a high sandy hill. There are two square towers.

A rough breakwater protects a small boat area which is subject to drying. When approaching the village from the NW, two prominent sickle-shaped peaks, with points opposed, are visible.

Anchorage can be taken about 0.5 mile offshore, in a depth of 5.5m, with the sickle-shaped peaks bearing 107°.

14.17 The coast NNW of **Kalat** (28°24'N., 51°09'E.) is low, sandy, and has numerous, small points affording protection from NW winds. Tidal currents are weak off the coast. Inland, running parallel to the coast, are mountain ranges, many with prominent peaks.

Kuh-e Sehtanj (28°29'N., 51°11'E.), rising 6 miles NE of Kalat, consists of two pinnacles close together with a small peak N, and is a good mark.

Kuh-e Khurmuj (28°43'N., 51°28'E.), 21 miles NE of Kuh-e Sehtanj, is 1,960m high and is visible above all parts of the coastal range. From SW, it appears as a long convex ridge, but from WNW, the ridge is end on and the mountain appears as a fine peak.

Baraki is the collective name of several villages along the Tangestan coast NNW of Kalat. A cultivated plain between the villages extends inland to the coastal ranges.

Good but open anchorage can be taken, in 7.3m, about 0.5 mile off **Karri** (28°25'N., 51°09'E.). Most of the coastal villages have at least one prominent square tower and some have mosques.

Bu ol Kheyr (28°32'N., 51°05'E.), with a prominent round tower at its N end, affords anchorage, in 5.5m, about 0.5 mile offshore.

Rostami (28°35'N., 51°05'E.) is identified by a high, round tower and a mosque S of the village. Low cliffs extend along the coast N of this village.

A dangerous wreck, marked by a lighted buoy, the position of which is approximate, lies 19 miles WSW of Rostami. Another dangerous wreck, the position of which is approximate, lies 2.5 miles NE of the above wreck.

14.18 Khalij-e Halileh (28°49'N., 51°00'E.), open S, has low sandy shores and general depths of less than 3.7m, mud. A large creek draining an extensive swamp empties into the NW part of the bay.

From the creek mouth to **Ras-e Halileh** (28°49'N., 50°58'E.), the coast consists of a ridge of sand about 1.5m high. A rocky spit extends almost 0.5 mile SW of low Ras-e Halileh. The village of Halileh is located almost 0.5 mile NNW of the point.

Anchorage, protected against the shamal, can be taken, in 5.5m, about 0.5 mile offshore, with Ras-e Halileh aligned 329° with the tower in the village.

Caution.—Dangerous wrecks, marked by lighted buoys except where indicated, which are best seen on the chart, lie about 8 miles SSE, 8 miles SW (unmarked), 6.5 miles W, and 12.5 miles NW of Ras-e Halileh.

14.19 Damagheh-ye Rishahr (28°54'N., 50°49'E.) is a cliffy point at the end of a plateau between coast and marshes. A small bay close E of the point has cliffy shores, on which are the conspicuous ruins of a white house surmounted by a white staff and triangle. The ruins of a large fort stand SE of the house. Telegraph buildings and conspicuous radio towers stand 0.5 mile NNE of the point.

Emamzadeh (28°54'N., 50°50'E.), which is comprised of a conspicuous 46m high domed mosque surrounded by a village, stands on the highest part of the land, about 2 miles E of Damagheh-ye Rishahr.

There is a prominent house standing 0.5 mile S of the mosque. There are depths of less than 6m as far as 1.5 miles SW of Damagheh-ye Rishahr.

Anchorage can be taken, in 7.3m, with fair holding ground, about 2 miles W of the radio towers.

Caution must be exercised during a shamal to avoid dragging anchor. A prohibited anchorage area, best seen on the chart, lies SW of Damagheh-ye Rishar.

Between Damagheh-ye Rishahr and Bushehr, about 5 miles N, the coast is fringed by a reef extending as far as 0.5 mile offshore; in many places, drying boulders lie on the outer edge of the reef. A small clump of date palms is about 1 mile NNW of Damagheh-ye Rishahr; about 0.7 mile further N is Ras-e Shokhab, the W extremity of a low sandy projection.

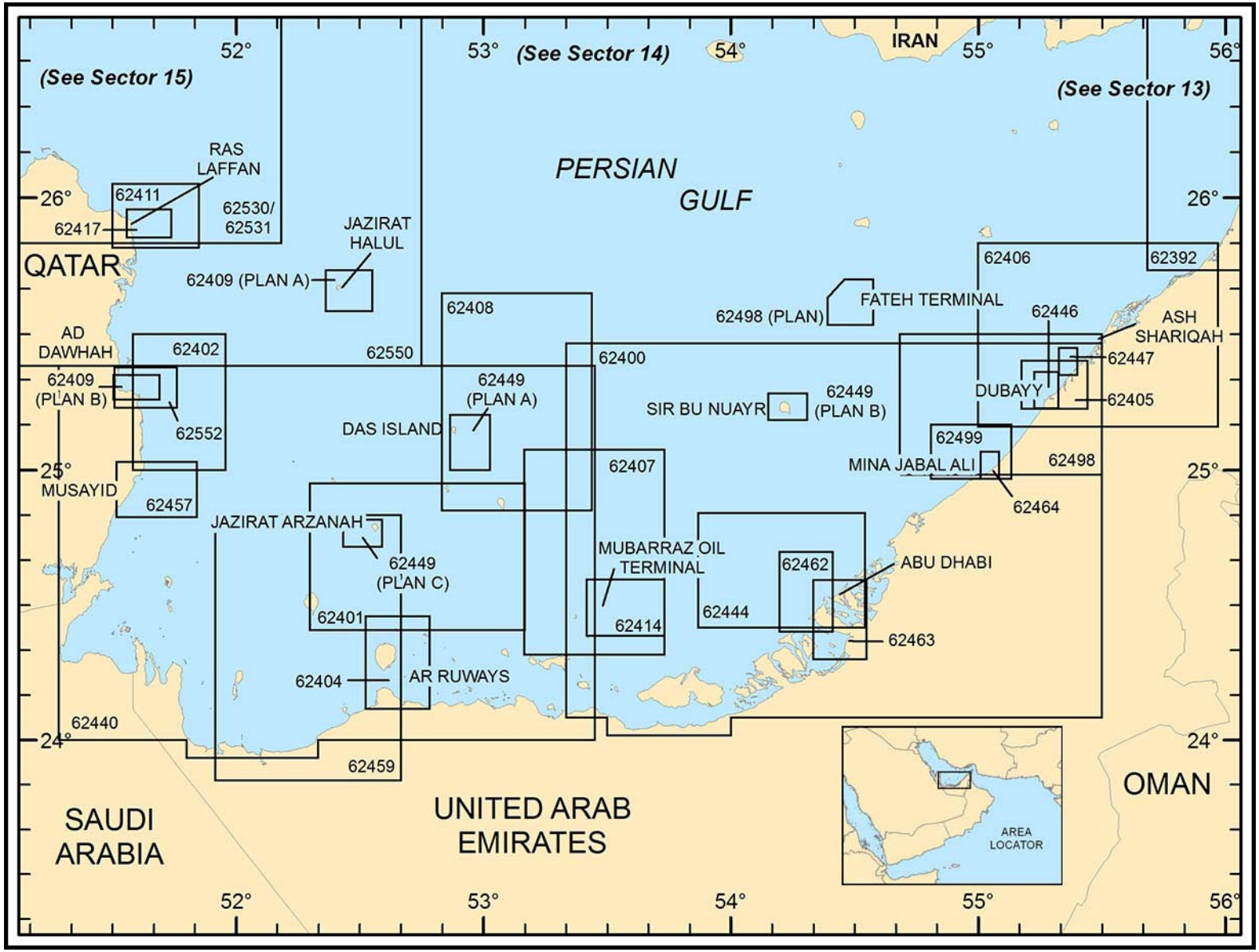
From here for 3.5 miles N, the coast is low and sandy; from that point 5m high cliffs continue to the outskirts of Bushehr.

14.20 Moqkeh (28°57'N., 50°49'E.), a small fishing village about midway between Ras-e Shokhab and Bushehr, has a boat harbor formed by a break in the coastal reef.

A building, with high arched windows, and three towers stand at the S end of Moqkeh; two radio masts stand about 2 miles ESE of the building. An airfield lies between Moqkeh and the radio masts. A remarkable building with two towers, encircled by an extensive wall, is located 1.5 miles NNE of Moqkeh.

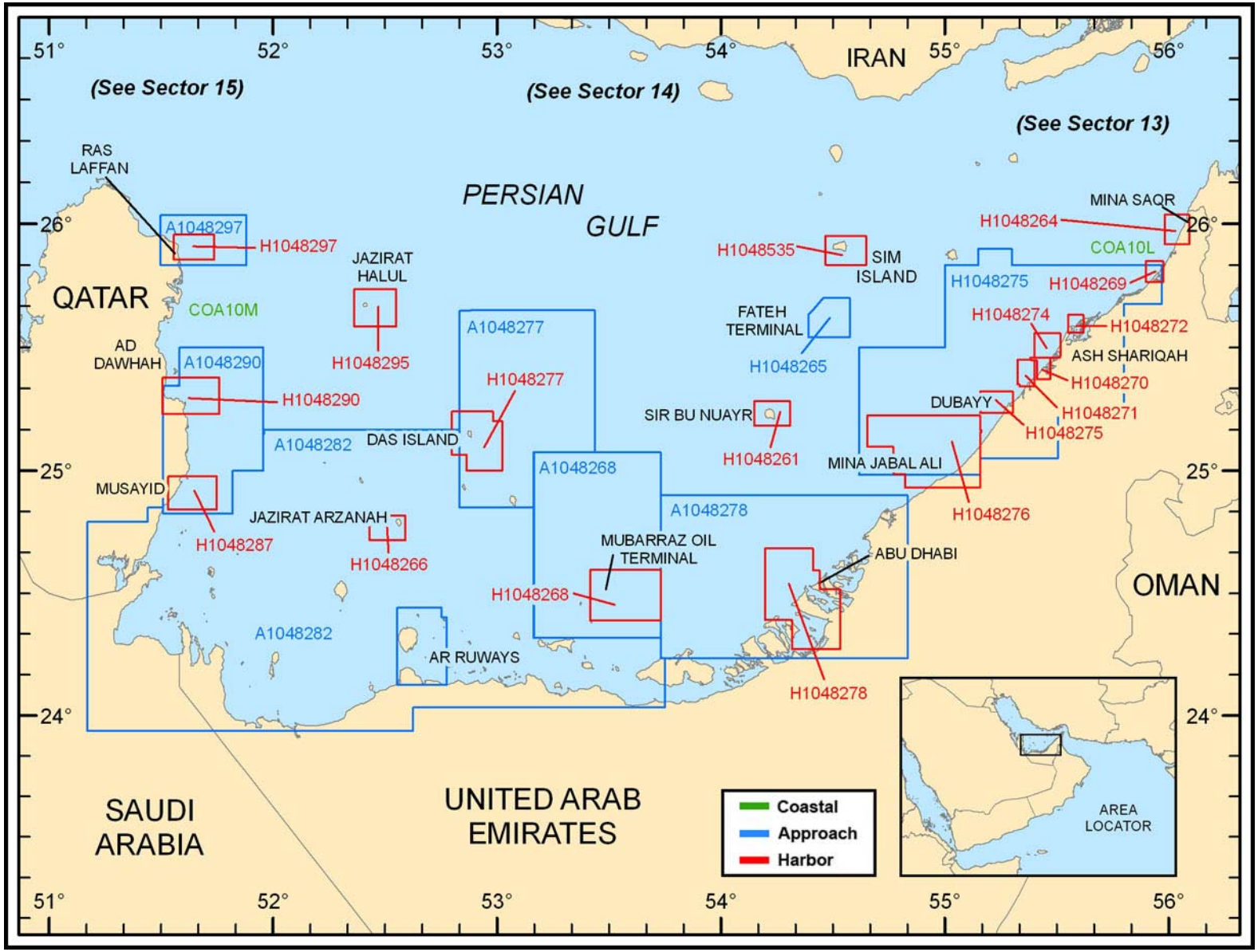
The roadstead of Bushehr consists of Outer Anchorage and Inner Anchorage. The former, for deep-draft vessels, is in the vicinity of the 10m curve, about 6 miles WSW of Bushehr.

Inner Anchorage encompasses an area about 3 miles NW of the town. Detailed information on Bushehr is given in paragraph 17.3.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **15** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 15 — DNC LIBRARY INFORMATION

SECTOR 15

THE PERSIAN GULF—UNITED ARAB EMIRATES AND QATAR—RAS ASH SHAM TO RAS RAKAN

Plan.—This sector describes the coast, islands, and dangers along the S side of the Persian Gulf between Ras ash Sham and Ras Rakan. The sequence of description is SW, W, and NW from Ras ash Sham.

General Remarks

15.1 The approaches to the S coast of the Persian Gulf are generally shallow, with a few offshore reefs and islands. Inside the 40m curve, which comprises roughly the area of Great Pearl Bank, the depths are irregular because of the reefs and shoals which extend offshore for many miles and bar access to the coast, except at a few points.

The coastline is only partially surveyed, and some shoals and reefs are reported to be uncharted. Coral reefs and rocks, however, are generally discernible as dark patches, and sand bars and shoals can be easily identified as yellowish green patches near the shore area. The bottom is usually visible in depths of 6.5 to 9.2m.

In the Persian Gulf, the sea makes up quickly and is characterized by choppy waves, which are often all out of proportion to the wind force; the sea quickly subsides after a gale.

In the Strait of Hormuz, at the entrance of the gulf, the tidal current is often greatly opposed by a strong NW wind, at which time the sea becomes troublesome and breaks heavily. Currents off the coast are variable but are not strong generally.

The prevailing wind is the NW shamal, but in winter it is often interrupted by winds from varying directions. Squalls are common throughout the year. A high degree of refraction or mirage occurs along all of this coast, especially in the early morning. The land features become greatly distorted, villages sometimes appear as clumps of rounded trees, and small uncharted hillocks or dunes assume a considerable height.

The whole of the coastal strip is desert plain, with a few small isolated hills and scattered tablelands, and is backed by alternating regions of drifting sand and patches of rock and salt flats. There are many salt creeks and tidal backwaters, the entrances of which are often changed by the wind, swell, and tidal scour.

The towns are all very similar in appearance. Because of the hard bottom in many places, anchorage off the whole E portion of the Trucial Coast is poor. On the approach of a winter shamal, which in this vicinity blows from WNW or even from W, vessels should leave their anchorage. In winter, vessels should anchor farther offshore than in summer.

Winds—Weather.—The prevailing wind during the summer months is the NW shamal, but between October and March, the shamal is often interrupted by the SE kaus, the NE nashi, or the SW suahili.

From June to September, the shamal blows over the whole area of the Persian Gulf, producing rough seas, stirring up dust clouds that affect visibility at sea, and reaching a considerable force which lasts for several days at a time.

Winter storms which pass through the gulf region are generally preceded by S winds and seas, which usually veer to NW behind the storm.

Cold fronts occasionally penetrate the area with these storms, accompanied by squalls and seas of variable direction, and are followed by a shamal. Summer winds and seas seldom vary from a NW direction.

The climate of the Arabian Peninsula as a whole is dry and hot. Average annual rainfall is minimal, except in some of the higher areas. Precipitation is erratic; long droughts are common but may be broken by intense downpours which result in flash floods.

Temperatures are moderate in winter but high in summer and are reported extremely high in the interior on summer afternoons. Evening temperatures are low enough to offer relief from oppressive daytime heat.

Relative humidity at coastal locations is high throughout the year; it is greatest in the early morning and lowest in the afternoon, except at some places on the coast, where the afternoon sea breezes bring moist and cooler air over the land area.

Tides—Currents.—The currents in the Persian Gulf have a predominantly counterclockwise circulation throughout the year. In that part of the gulf covered by this sector, there are sometime strong currents in the SE part which set between NE and E, especially in January and in April, May, and June.

Their speed has been observed to be from 0.4 to 0.8 knot in January, and from 0.6 knot to 1.7 knots in April. Through the Strait of Hormuz there is a distinct inward flow from the Gulf of Oman during the Southwest Monsoon and a slight outward flow during the remainder of the year.

In the latter period, some water continues to flow into the Persian Gulf, but these currents trend more to the N side of the gulf. Any notable local peculiarities in tides and currents are described with the related features.

Caution.—Several offshore oil fields are located within the area covered by this sector, some offering offshore petroleum berths and some lying within charted limits or restricted areas; all are best seen on the appropriate chart.

Caution should be exercised when navigating within the vicinity of these oil fields as production platforms, submarine pipelines, and various other hazards, both above and below-water, may be present.

The following oil fields are surrounded by restricted areas, into which only authorized vessels may enter and are centered approximately, as follows:

1. Dalma Oil Field (24°31'N., 52°23'E.).
2. Bu Jufair Oil Field (24°41'N., 52°26'E.).
3. Jarnain Oil Field (24°46'N., 52°20'E.).
4. Al Bunduq Oil Field (24°31'N., 52°23'E.).
5. Bu Haseer Oil Field (25°00'N., 52°57'E.).
6. Zarkouh Oil Field (24°52'N., 53°03'E.).
7. Yaser Oil Field (25°18'N., 53°01'E.).
8. Nasr Oil Field (25°19'N., 53°28'E.).

9. Al Khair Oil Field (25°34'N., 54°03'E.).
10. Al Mubarraz-1 Oil Field (24°26'N., 53°40'E.).
11. Al Mubarraz-2 Oil Field (24°35'N., 53°44'E).
12. Al Mubarraz-3 Oil Field (24°32'N., 53°50'E.).
13. Abu al bu Khoosh Oil Field (25°30'N., 53°09'E.).
14. Arzannah Oil Field (24°42'N., 52°54'E.).
15. Jazirat Das Oil Field (25°10'N., 52°53'E.).
16. Satah Oil Field (24°55'N., 52°33'E.).
17. Umm ad Dalkh Oil Field (24°37'N., 54°09'E.).
18. Umm Shaif Oil Field (25°12'N., 53°13'E.).
19. Zaqqum Oil Field (24°50'N., 53°37'E.).
20. Al idd Ash Sharqi Oil Field (25°30'N., 52°25'E.).
21. Karkara Oil Field (25°08'N., 52°28'E.).
22. Maydan Mahazam Oil Field (25°36'N., 52°32'E.).
23. Mahazam Bul Hanine Oil Field (25°26'N., 52°44'E.).
24. Az Zorah Oil Field (25°36'N., 55°13'E.).

Mariners are advised to contact the Critical National Infrastructure Authority (CNIA) at Abu Dhabi in advance to obtain the necessary permission to enter the restricted areas. The CNIA can be contacted, as follows:

1. Telephone: 9712-6550900
   9712-6550909
2. Facsimile: 9712-6550919

It has been reported that some charted oil production platforms in the Persian Gulf may have been removed. In many cases, all that remains of the platform are pipes extending from 3.1 to 6.1m above the waterline; these pipes do not show up well on radar and are a hazard to navigation.

An IMO-approved Traffic Separation Scheme exists in the waters covered by this sector and is best seen on the appropriate chart.

United Arab Emirates—Ras ash Sham to Abu Zaby

15.2 **Ras ash Sham** (26°04'N., 56°05'E.) rises gradually to the summit of a mountain, about 705m high, which has a notch and is a good mark from SW and N. The coast to Abu Zaby is low and sandy.

In clear weather, the mountains of Ruus al Jibal are visible until the vessel has passed Dubayy, about 64 miles SW of Ras ash Sham. The terrain consists of stony desert, with small detached groups of volcanic hills; on the coast are low cliffs.

Between Ras ash Sham and the town of **Ash Sham** (26°02'N., 56°05'E.), the coast is fringed by shoals and backed by a cultivated plain. There is a prominent mountain, 701m high, about 1 mile SE of Ras ash Sham, a notch in the mountain makes it a good mark from SW and N.

Depths are very uneven W of Ash Sham, varying from 18.3 to 36.6m from 0.5 to 3 miles offshore.

Mina Saqr (Ras al Khaimah) (25°59'N., 56°03'E.)

World Port Index No. 48264

15.3 Mina Saqr (Ras al Khaimah) is an artificially-constructed harbor with deep water. The port limits include Khawr Khuwayr (Hanna). General cargo, bulk cement, container and ro-ro cargo, and petroleum products are handled in the port.

Winds—Weather.—See paragraph 15.1 for details.

Tides—Currents.—The tidal rise here is 1.4m.

Mina Saqr Port Authority Home Page

http://www.saqrport.com

Depths—Limitations.—Loaded vessels up to 60,000 dwt, with a maximum length of 200m and a maximum draft of 11.5m, can be accommodated.

Twelve berths have lengths of between 150 and 200m with depths alongside of 12.2m. The inner approaches are dredged to a depth of 12.2m. The main basin is dredged to a depth of 12.2m but there are isolated depths of only 12.0m.

It has been reported (2008) that construction of new container berths, with a total length of 800m and an alongside depth of 16.5m, is scheduled to begin in 2010.

Ras al Khaimah Maritime City, a new maritime free zone operated by the Mina Saqr Port Authority, has over 5,000m of available berthing space with alongside depths of 7m. The facility is approached through a channel with a depth of 9m.

Aspect.—The breakwaters protecting the port are reported to be radar conspicuous. There are two prominent silver-gray silos in the vicinity of the harbor. Two conspicuous chimneys rise from the cement factory 1 mile ESE of the harbor area.

A prominent flare stack stands near the coast 2 miles S of the harbor entrance. It is reported to be visible for some distance offshore. Two oil tanks stand close S of the flare stack.

A sector light, leading through the harbor entrance, stands on the S breakwater.

A red warning light, which flashes in the vicinity of the sector light, indicates helicopters are operating from a nearby heliport.

Pilotage.—Pilotage is compulsory and is available 24 hours. The pilot boards about 2 miles N of the head of the W breakwater.

Regulations.—The vessel's ETA and draft should be sent to the vessel's agent or the Port Authority control tower 24 hours in advance on VHF channel 14, with any amendments sent 2 hours prior to arrival. The ETA message should include the vessel's maximum draft.

A berthing request should be submitted to the control tower by facsimile or e-mail 24 hours prior to arrival, stating the following information:

1. Vessel name.
2. Vessel type and IMO number.
3. Official number.
4. Year built.
5. ETA.
6. Flag.
7. Length overall.
8. Beam.
9. Gross tons.
10. Net tons.
11. Class.
12. Arrival/sailing draft (fore and aft).
13. Number of hatches/holds.
14. Last/next port of call.
15. Owner.
16. Purpose of call/cargo information.
17. Shipper.

18. Consignee.
19. Charterer.
20. Arms and ammunition declaration.
21. Number of crew/passengers.

Vessels alongside and at anchor should maintain a continuous listening watch on VHF channels 14 and 16.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 971-7-2056000
2. Facsimile: 971-7-2668533
3. E-mail: info@saqrport.com

The Port Authority control tower can be contacted, as follows:

1. Call sign: Saqr Port Authority
2. VHF: VHF channels 9, 14, and 16
3. Telephone: 971-7-2056161
   971-7-2056162
   971-7-2056163
   971-7-2056164
4. Facsimile: 971-7-2668051
5. E-mail: controltower@saqrport.ae

The harbormaster can be contacted, as follows:

1. Telephone: 971-7-2056000
2. Facsimile: 971-7-2668533
3. E-mail: gm@saqrport.ae

Anchorage.—Four designated anchorage areas, best seen on the chart, are located NW of the harbor entrance and are designated for use, as follows:

1. Anchorage Zone I—for vessels less than 50m loa, barges, and small craft.
2. Anchorage Zone II—for vessels greater than 50m loa.
3. Anchorage Zone III—for bunkering vessels only.
4. Anchorage Zone IV—adjoining Anchorage Zone III.

Caution.—Pipelines, best seen on the chart, extend N and NW from the shore close SW of the Khawr al Khuwayr.

Caution is necessary when using Anchorage Zone I as an obstruction, marked N and S by lighted buoys and best seen on the chart, is located in the center of the area.

15.4 Hulaylah Oil Terminal (25°59'N., 55°56'E.) (World Port Index No. 48280), lying about 6 miles W of Mina Saqr, consists of a storage tanker moored to an SPM.

Depths—Limitations.—A submarine pipeline connects the SPM to Saleh Oil Field to the NW, and to the shore. The depth of water at the buoy is 30.5m.

Vessels of 150,000 to 300,000 dwt, with a maximum length of 400m, a maximum beam of 55m, and a maximum draft of 21.5m, can be accommodated.

An underkeel clearance of 9.2m must be maintained.

Pilotage.—Pilotage is provided by a mooring master. The mooring master boards at the anchorage area located 3 miles WSW of the SPM.

Regulations.—The vessel's ETA should be sent either directly to the terminal or via the agent 72 hours, 48 hours, and 24 hours in advance. Changes in the ETA of more than 1 hour are to be reported. The 72-hour message should contain the following information:

1. Vessel's name.
2. ETA (state whether local time or UTC).
3. Master's name.
4. Estimated arrival draft fore and aft and arrival displacement.
5. Other information as required by the operators.

When within range, the terminal should be contacted on VHF channel 16.

Vessels are berthed during daylight hours only; unberthing may be done at any time.

Contact Information.—The terminal can be contacted, as follows:

1. Call sign: Hulaylah Terminal
2. VHF: VHF channels 16 and 73
3. Telephone: 971-7-2668364
4. Facsimile: 971-7-2668088
5. Telex: 893-99155 RAKNOC EM
6. E-mail: info@rakgas.ae

Anchorage.—An anchorage area, within a circle of radius 0.5 mile, is established 3 miles WSW of the SPM.

Caution.—A marine farm area, best seen on the chart, is located approximately 4 miles S of the terminal.

15.5 Ras al Khaimah Maritime City (25°57'N., 56°03'E.), a new port and free zone, lies about 1 mile S of Mina Saqr.

Ras al Khaimah Maritime City Home Page

http://www.rakmaritimecity.ae

Depths—Limitations.—The entrance channel and the harbor are dredged (2010) to 7m. The harbor has 5,000m of quay wall. Pilots board 2 miles WNW of the harbor entrance.

Aspect.—The following landmarks are conspicuous in the approach:

1. Minarets, about 0.25 mile SE of the breakwater head.
2. A radio tower, about 0.35 mile SSE of the breakwater head.
3. The port control tower, about 0.5 mile SSE of the breakwater head.

Pilotage.—Pilotage is compulsory and is available 24 hours. The vessel's ETA can be sent to Saqr Port Pilots via the Saqr Port Authority control tower.

Pilots board in position 25°58'42.0"N, 56°00'33.6"E.

Regulations.—The vessel's ETA should be sent to the vessel's agent or the Mina Saqr Port Authority Control Tower 24 hours in advance, including the vessel's draft, on VHF channel 69, with any amendments sent 2 hours prior to arrival. The ETA message should include the vessel's maximum draft.

A berthing request should be submitted to the control tower by facsimile or e-mail 24 hours prior to arrival, stating the following information:

1. Vessel name.
2. Vessel type and IMO number.
3. Official number.
4. Year built.
5. ETA.
6. Flag.
7. Length overall.
8. Beam.
9. Gross tons.
10. Net tons.

11. Class.
12. Arrival/sailing draft (fore and aft).
13. Number of hatches/holds.
14. Last/next port of call.
15. Owner.
16. Purpose of call/cargo information.
17. Shipper.
18. Consignee.
19. Charterer.
20. Arms and ammunition declaration.
21. Number of crew/passengers.

Vessels alongside and at anchor should maintain a continuous listening watch on VHF channels 16 and 69.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 971-7-2056000
2. Facsimile: 971-7-2668533
3. E-mail: info@rakmaritimecity.ae
   bdm@saqrport.ae

The Mina Saqr control tower can be contacted, as follows:

1. Call sign: Saqr Port Authority
2. VHF: VHF channels 16 and 69
3. Telephone: 971-7-2215258
4. Facsimile: 971-7-2215259
5. E-mail: controltower@rakmaritimecity.ae

The harbormaster can be contacted, as follows:

1. Telephone: 971-7-2056000
2. Facsimile: 971-7-2668153
3. E-mail: gm@saqrport.ae

Ar Rams (25°53'N., 56°03'E.), a town located 5 miles SSW of Mina Saqr, lies on the SE side of a lagoon, the entrance of which is obstructed by a bar on which the sea breaks. The lagoon is used by dhows.

The coast between Mina Saqr and Ar Rams is fronted by a bank with numerous sandy shoals, whose positions probably change under the effect of the shamal. Vessels should not close the coast in depths of less than 11m. Ar Rams can be identified by a round fort at the SW end of town and a minaret at the NE end of town.

The lagoon gives access to a creek which trends S towards Khawr Ras al Khaymah.

15.6 Ras al Khaymah (Khor Port) (25°48'N., 55°57'E.), located about 7 miles SSW of Ar Rams, stands on the W side of Khawr Ras al Khaymah.

Marid (Muayrid) (25°48'N., 55°58'E.) is a town located close NE of Ras al Khaymah. The sand spit on which Ras al Khaymah stands has been breached between the two towns to provide access to Khawr Ras al Khaymah.

In the vicinity of Ras al Khaymah, the coastal plain is about 6 miles wide, but S this width increases rapidly so that when seen from N the town appears to be located where the mountains end.

South of Ras al Khaymah, the N end of the high red sand hills affords a guide to the locality.

Depths—Limitations.—The channel between the training walls was dredged to a depth of 3m. Vessels drawing up to 3.3m, with a maximum length of 46m, have entered the harbor at HW, but entry should not be attempted without local knowledge.

New Customs Quay, 91m in length, with a depth of 5m alongside, is located at the S end of the entrance channel, on its E side. Fish Quay lies on the W side.

Aspect.—A hotel, which is conspicuous, is situated about 2 miles SW of the town.

A prominent tower stands about 1 mile SW of the town; another prominent tower stands close ESE of the hotel.

The buoyed entrance channel into the inlet lies between two training walls, 183m apart, which extend 0.4 mile NNW from the coast.

Pilotage.—Pilotage is compulsory and is available 24 hours. Pilots board in the vicinity of the Approach Lighted Buoy. The pilots monitor VHF channel 16.

Regulations.—The vessel's ETA should be sent to the vessel's agent or the Khor Port Authority Control Tower 24 hours in advance, on VHF channel 71, with any amendments sent 2 hours prior to arrival. The ETA message should include the vessel's maximum draft.

A berthing request should be submitted to the control tower by facsimile or e-mail 24 hours prior to arrival stating the following information:

1. Vessel name.
2. Vessel type and IMO number.
3. Official number.
4. Year built.
5. ETA.
6. Flag.
7. Length overall.
8. Beam.
9. Gross tons.
10. Net tons.
11. Class.
12. Arrival/sailing draft (fore and aft).
13. Number of hatches/holds.
14. Last/next port of call.
15. Owner.
16. Purpose of call/cargo information.
17. Shipper.
18. Consignee.
19. Charterer.
20. Arms and ammunition declaration.
21. Number of crew/passengers.

Vessels at anchor or alongside should maintain a continuous listening watch on VHF channels 16 and 71.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 971-7-2288230
2. Facsimile: 971-7-2288250
3. E-mail: om@khorport.ae

The Khor Control Tower can be contacted, as follows:

1. Call sign: Khor Port Authority
2. VHF: VHF channels 16 and 71
3. Telephone: 971-7-2281190
4. Facsimile: 971-7-2281192
5. E-mail: tower@khorport.ae

The harbormaster can be contacted, as follows:

1. Telephone: 971-7-2338858
2. Facsimile: 971-7-2288250
3. E-mail: om@khorport.ae

Anchorage.—Anchorage can be taken near Approach

Lighted Buoy, moored 3 miles WNW of the training walls. Vessels anchor, in a depth of 10m, with the head of the E training wall bearing 120°, distant 2.5 miles, poor holding ground.

Small vessels anchor 2 miles W of the training walls, in a depth of 6.1m, good holding ground, sandy bottom. This anchorage is preferred during a shamal.

Caution.—Caution is necessary on approaching both anchorages due to detached shoals, which are best seen on the chart.

Between Ras al Khaymah and Umm al Qaywayn, about 25 miles SW, many of the numerous sand banks within the 10m curve may shift under the influence of the NW winds known as the shamal.

15.7 Al Jazeera Port (Al Jazirah Port) (25°43'N., 55°47'E.) (World Port Index No. 48269) fronts Jazirat al Hamra, which was once an island but is now part of the mainland. The port exports rock and aggregates from nearby quarries but can also handle bulk, liquid, ro-ro, container, and general cargo.

Al Jazeera Port Authority Home Page

http://www.aljazeeraport.ae

Tides—Currents.—The mean maximum tidal range is 0.5m. The mean minimum tidal range is 0.4m.

Depths—Limitations.—The port is approached from the NW through a 1-mile wide channel, with general charted depths of 5.5 to 20m, although caution must be used to avoid the charted 2.3m and 4.2m patches along the SW side of the approach channel.

The dredged inner channel, which has a controlling depth of 6m and is marked by lighted buoys, is entered about 0.3 mile NNE of Ras Abu Ahmad Light; however, the positions of the lighted buoys do not indicate the actual limits of the dredged channel. See table titled **Al Jazeera—Berth Information** for detailed berth information.

Aspect.—The harbor consists of two basins enclosed to the W by Ras Abu Ahmad. A rock breakwater extends about 0.2 mile NNW from the point.

A light is shown from Ras Abu Ahmad on the NW side of the entrance channel. There is a fort with several towers in the town; close to the fort is a high square tower. Another slender tower rises at the W end of town. Landing on the shores outside the inlet is difficult, except during good weather.

Pilotage.—The pilot boards in the vicinity of Lighted Buoy 3, about 2.75 miles NNW of Ras Abu Ahmad.

Regulations.—Vessels must send the ETA to the pilot office at least 24 hours in advance, except when vessels are on a passage from a port less than 24 hours sailing time, in which case the ETA should be sent no later than upon departure from the previous port. Any amendments to the ETA should be sent as soon as possible, but not later than 2 hours prior to arrival.

The following information should be given to Port Control on first contact:

1. Vessel name.
2. Vessel flag.
3. Length overall.
4. Gross tonnage.
5. Net tons.
6. Arrival draft.
7. Last port of call.
8. Next port of call.
9. Type and tonnage of cargo for discharge and loading.

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Port Control
2. VHF: VHF channel 68
3. Telephone: 971-7-2446627
4. Facsimile: 971-7-2446651
5. E-mail: info@aljazeeraport.ae

Anchorage.—An anchorage area, with charted depths of 17.8 to 21.0m, is located about 5.5 miles NW of Ras Abu Ahmad and is best seen on the chart

Anchorage is prohibited in an area centered on position 25°44.8'N, 55°47.0'E.

Directions.—Vessels approaching from the NE should pass 10 miles E of Saleh Oil Field.

Caution.—The position, shape, and depths over the offshore banks within the 10m curve can be affected by the shamal.

Al Jazeera—Berth Information

Berth	Length	Maximum draft	Remarks
No. 1	130m	6.0m	Under construction. Located close S of the SW face of the jetty.
No. 2	100m	6.0m	Southwest face of jetty. Charted depth of 5.7m alongside.
No. 3	100m	6.0m	
No. 4	150m	6.0m	Northwest face of jetty. Charted depths of 6.0 to 6.7m alongside.
No. 5	125m	6.0m	
No. 6	125m	6.0m	
No. 7	42m	6.0m	Northeast face of jetty. Charted depths of 4.9 to 6.4m alongside.
No. 8	130m	6.0m	
No. 9	130m	6.0m	

Construction and reclamation works are in progress (2008) within the harbor and in its approaches.

A dangerous wreck lies close NW of the NW corner of the anchorage area.

15.8 Khawr Um al Qaywain (25°34'N., 55°36'E.) is an inlet comprising an extensive backwater in which are several low islets. Extensive banks, with drying patches, extend seaward from Jazirat as Siniyah and from the peninsula of Umm al Qaywain.

Between these two banks is a narrow channel leading to Khawr Um al Qaywain. It is entered between the W extremity of Jazirat as Siniyah and the peninsula of Umm al Qaywain.

Jazirat Mallah, separated from Jazirat Siniyah by salt pans covered at HW, extends 5 miles NE. Burj Mallah, the SW of two conspicuous rectangular towers, stands near the SW end of Jazirat Mallah. A dangerous wreck lies 7 miles N of the entrance to Khawr Um al Qaywain.

15.9 Umm al-Qaiwain (Ahmed Bin Rashid) (Umm al Qaywayn) (25°34'N., 55°36'E.) (World Port Index No. 48273) is located on the peninsula of Umm al Qaywain, which is connected with the mainland W of it by a narrow isthmus about 0.1 mile wide.

Tides—Currents.—Cross-channel sets of up to 2 knots may be experienced in the approach channel.

Depths—Limitations.—The port is approached through a channel, which has a minimum depth of 10m, marked by lighted buoys and lighted beacons. The approach channel is 100m wide, increasing to a width of 160m at the N end of Berth No. 4 and connecting to a turning basin, with a diameter of 500m, at the S end of Berth No. 5.

There are two berthing facilities in the port. Details are given in the accompanying table titled **Umm al-Qaiwain—Berthing Information**.

Aspect.—A square fort near the center of the town has two round towers and a flagstaff. A conspicuous minaret stands close SW of the fort. Bakhut Tower, conspicuous from N and WNW, stands on the E side of the peninsula. West of the peninsula are three other towers, of which Mashsum Tower is conspicuous.

A conspicuous square water tank stands on a hill 2 miles SSW of Umm al-Qaiwain.

Pilotage.—Pilotage is compulsory and should be requested 24 hours in advance. The pilot boards in the anchorage area. The harbormaster's office monitors VHF channel 16.

Contact Information.—The port can be contacted, as follows:

1. VHF: VHF channels 10 and 16
2. Telephone: 971-6-7655882
3. Facsimile: 971-6-7651552
4. E-mail: abrpaftz@emirates.net.ae

Anchorage.—Anchorage outside the inlet may be obtained, in depths of 11 to 13m, about 0.7 mile NW of Mahsum Tower. In winter, vessels should anchor farther offshore. The holding ground of sand and shell is poor.

Caution.—It was reported (1994) vessels should enter the port only at high tide and slack water. Currents at the intersection of the dredged channel and the turning basin may cause a vessel to be set onto the deep-water wharf.

Landing on the shores outside the inlet is usually difficult except in fine weather. The dangerous wreck of a barge, sometimes visible at LW, lies close offshore about 0.3 mile W of Umm al-Qaiwain.

15.10 Hamriyah (25°29'N., 55°30'E.) is a village about 7 miles SSW of Umm al-Qaiwain. The tower of a new fort, with a flagstaff and a white minaret, are conspicuous. There is a creek at the S end of the village which connects at HW with Khawr Ajman. The creek was dredged (2004) to 3.5m.

A channel, dredged to a depth of 9m (2009) and marked by lighted buoys, extends ESE to the creek entrance from a position about 0.5 mile N of the entrance to Al Hamriyah LPG Terminal and then SE from the creek entrance to a main basin about 0.8 mile long, with dredged depths of 5 to 9m. Two shorter basins, with dredged depths of 7 to 9m and 5m, respectively, extend NNE from the N side of the main basin.

15.11 Al Hamriyah LPG Terminal (25°28'N., 55°29'E.) (World Port Index No. 48274), entered close SW of the creek, is devoted to liquefied gas products, but does contain a grain/general cargo berth. The FAL Berth, which is served by the LNG terminal, provides fuel services to the nearby international airports in Dubai and Sharjah.

Umm al-Qaiwain—Berthing Information

Berth	Length	Depth	Remarks
Deep Water Wharf			
No. 1	130m	5.5m	See Note.
No. 2	115m	7.5m	See Note.
No. 3	200m	9.5m	See Note.
No. 4	400m	10.0m	See Note.
Town Wharf	800m	4.0m	Vessels up to 1,000 gross tons, with a maximum length of 60m, can be accommodated.

Note.—Vessels up to 30,000 gross tons, with a maximum length of 210m and a maximum draft of 9.8m, can be accommodated.

Sharjah Ports Home Page

http://www.sharjahports.ae

Depths—Limitations.—The harbor is approached via a 3-mile long buoyed channel dredged to a depth of 15m.

There is a dredged depth of 14m alongside the LPG berth; vessels up to 83,000 dwt, with a maximum draft of 12.6m and a length of between 186m and 230m, can be accommodated. Vessels berth port side-to.

A grain/general cargo berth, 250m long, with a dredged depth of 14m alongside, is located on the NE side of the basin. Vessels up to 120,000 dwt can be accommodated. Two additional general cargo berths, with a dredged depth of 14m alongside, are located on the SE side of the basin.

Aspect.—A light is shown from each breakwater head. The LPG berth, comprising a berthing platform flanked by berthing and mooring dolphins, is situated on the S side of the basin.

Pilotage.—Pilotage, which is compulsory for vessels over 150 nrt or greater than 50m long, is available 24 hours. Pilots board 3 miles NW of the dredged harbor entrance channel.

Regulations.—The vessel's ETA should be sent 72 hours, 48 hours, and 24 hours in advance. Changes of 2 hours in ETA should be reported.

Vessels should make contact on VHF channel 72 with Port Control 2 hours prior to arrival.

The 72-hour message should contain the following information:

1. Estimated time of arrival.
2. Estimated arrival draft, fore and aft.
3. Estimated departure draft, fore and aft.
4. Cargo details:
   a. LPG Terminal—Whether vessel is partially loaded or in ballast. If vessels is partially loaded, the nature and quantity of the cargo, along with a statement certifying the partial cargo on board is within LNG product specification and that certificates of quality are on board. The last three cargoes carried must also be reported.
   b. FAL Berth—Quantity of cargo to be discharged.
5. Last port of call.

The 24-hour message must include a statement that the vessel is ready to load upon arrival.

Berthing and unberthing is permitted only from 0630 until 1500. Berthing is suspended when wind speeds exceed 20 knots.

The terminal maintains a listening watch on VHF channel 71 when vessels are expected. Vessels are required to maintain a listening watch on VHF channels 16 and 71 when approaching the terminal.

A minimum underkeel clearance of 0.3m or 1.5 per cent of the vessel's extreme breadth, whichever is greater, must be maintained at all times.

Contact Information.—Contact information is given in the table titled **Al Hamiryah—Contact Information**.

Anchorage.—Anchorages, with a radius of 1 mile, have been established from the center of the harbor entrance, as follows:

1. Berth A (for hazardous cargo)—9 miles WNW.
2. Berth B (for general cargo)—6 miles WNW.

The anchorages show depths of 15.5 to 28.5m, bottom quality not stated.

Caution.—A wreck, with a depth of 10m, lies about 0.2 mile S of Anchorage Berth B.

15.12 Ajman (25°25'N., 55°26'E.) (World Port Index No. 48270) is located on the S side of the entrance to Khawr Ajman. Containers and general cargo are handled here.

Ajman Home Page

http://www.ajmanport.gov.ae

Depths—Limitations.—The entrance channel has been dredged (1998) to a depth of 8m.

Berth 1 through Berth 5, with a total length of 548m, have been dredged (1998) to an alongside depth of 8m. Nine other berths, with a total length of 1,654m, have a dredged depth of 5m alongside. A ro-ro berth, 150m long, has a depth alongside of 5m.

Vessels up to 20,000 dwt, with a maximum length of 170m (180m at HW) and a maximum draft of 7.6m (8.0m at HW), can normally be accommodated.

Within the bar, the channel forks into several branches, all available to local small craft. Irregular ridges of sand, shell, and dead coral, with depths of less than 10m, lie as far as 2.5 miles offshore in the vicinity of Khawr Ajman.

Aspect.—The entrance to Khawr Ajman lies between two training walls, marked by lights, and is encumbered by a bar over which the depth is variable.

A fort and several minarets are situated in Ajman. Berig al Mai, 0.5 mile SSW of the fort, is a conspicuous watchtower.

Pilotage.—Pilotage is compulsory and is available 24 hours with 48 hours advance notice. The pilot boards 3 miles NW of the breakwater.

Regulations.—Vessels should contact Port Control 2 hours before arrival on VHF channel 16.

The port authority controls vessel movement on VHF channel 6.

Al Hamiryah—Contact Information

	Port Control	Harbormaster	LPG Terminal	Port Authority
Call sign	Port Control	—	—	—
VHF	VHF channels 16 and 72	—	—	—
Telephone	—	971-6-5263388	971-6-5286333	971-6-5263333
Facsimile	—	971-6-5263383	971-6-5286111	971-6-5263555

Al Hamiryah—Contact Information				
	Port Control	Harbormaster	LPG Terminal	Port Authority
E-mail	—	—	—	hfz@hamriyahfreezone.ae
Web site	—	—	—	http://www.hfza.com

It has been reported (2016) all cargo vessels, supply vessels, and tugs entering the port are required to have the following:

1. A valid IMO Number clearly indicated on all certificates.
2. An operating AIS fitted on board.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Ajman Port Control
2. VHF: VHF channels 6, 16, 67, and 73
3. Telephone: 971-6-7470111
4. Facsimile: 971-6-7470333
5. E-mail: info@hajt.com

The harbormaster can be contacted by telephone (971-50-6360371).

Anchorage.—The holding ground is poor and ships should not anchor in depths of less than 20m, except in calm weather.

Caution.—Shallow water was reported to lie on the inside of the channel bends; a shoal patch of 4m was found in the inner harbor. The sea breaks heavily on the bar with an onshore swell.

Buoys marking the channel may be out of position, sometimes outside of the dredged channel, and should not be solely relied upon for positioning.

The dredged areas are subject to siltation and depths may be less than charted.

A dangerous wreck, with a depth of 8m, has been reported (2016) to lie in position 25°30'40.2"N, 55°23'30.3"E about 2 miles NNW of the pilot boarding position.

Al Hayrah (25°23'N., 55°24'E.), a village about 3 miles SW of the fort at Ajman, has a prominent minaret, barracks, a water tower, and radio masts, all visible from seaward.

Sharjah Offshore Oil Terminal (Hamriyah Oil Terminal (25°35'N., 55°24'E.)

World Port Index No. 48272

15.13 Sharjah Offshore Oil Terminal consists of an SPM moored in a depth of 21.5m.

Sharjah Ports Home Page
http://www.sharjahports.ae

Depths—Limitations.—The maximum draft allowed is 16.0m on departure. The terminal can accommodate vessels of 40,000 to 150,000 dwt.

Pilotage.—Pilotage is compulsory for vessels over 150 nrt or greater than 50m long.Vessels to be moored at the loading berth will be boarded by a Mooring Master about 3 miles N of the loading berth. A Mooring Master will be provided by the company and vessels will not be allowed to approach or depart from the loading berth without the Mooring Master on board.

The pilot vessel can be contacted on VHF channels 6, 12, 16, and 71.

Regulations.—Vessels are moored in daylight hours only, but are loaded and unmoored at any hour, weather and other circumstances permitting.

The vessel's ETA should be sent 72 hours, 48 hours, and 24 hours in advance. Any changes in ETA of more than 2 hours should be reported.

The 24-hour message must include a statement that the vessel is ready to load upon arrival.

Vessels should make contact on VHF channel 72 with Port Control 2 hours prior to arrival.

Berthing is suspended when wind speeds exceed 25 knots of the sea/swell height exceeds 2.0m. All operations are suspended when wind speeds exceed 30 knots or the sea/swell height exceeds 2.5m.

The terminal maintains a listening watch on VHF channel 71 when vessels are expected. Not less than 12 hours prior to arrival, vessels are required to maintain a listening watch on VHF channels 16 and 71.

A minimum underkeel clearance of 0.3m or 1.5 per cent of the vessel's extreme breadth, whichever is greater, must be maintained at all times.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channels 16 and 71
2. Telephone: 971-6-5253123
   971-6-5263263
3. Facsimile: 971-6-5253775

Anchorage.—The anchorage area for vessels awaiting the loading berth at Sharjah Offshore Oil Terminal is centered 3 miles N of the loading berth.

Anchoring is prohibited inside a radius of 2 miles from the SPM and within a distance of 2 miles on each side of the pipeline.

Caution.—The exposed position of the SPM requires a ship berthed at it to be kept at immediate readiness for sea.

Ash Shariqah (Sharjah) (Mina Khalid)—Berthing Facilities			
Berth	Length	Max. draft	Remarks
No. 1	575m	11.5m	Container, general, and bulk cargo.
No. 2		10.5m	Container, general, and bulk cargo.
No. 3		10.5m	Container, general, and bulk cargo.

Ash Shariqah (Sharjah) (Mina Khalid)—Berthing Facilities			
Berth	**Length**	**Max. draft**	**Remarks**
No. 4	725m	8.5m	General cargo.
No. 5		8.5m	General cargo.
No. 6		9.5m	General cargo and ro-ro vessels.
No. 7		9.5m	General cargo and ro-ro vessels.
No. 8	220m	9.5m	Ro-ro vessels.
No. 9	375m	8.5m	General and refrigerated cargo.
No. 10		8.5m	General and refrigerated cargo.
No. 11	575m	8.5m	General and refrigerated cargo.
No. 12		9.5m	General, dry bulk, and liquid bulk cargo.
No. 13		—	Dredged to a depth of 9.2m (2004).
No. 14	400m	—	Located at the head of the basin. Dredged to a depth of 9.2m (2004).
No. 15		—	
No. 16	1,000m	—	Located on the S side of Lee Breakwater. Dredged to a depth of 9.2m (2004). FAL Oil Terminal, with a T-head, is located between Berth No. 17 and Berth No. 18.
No. 17		—	
No. 18		—	
No. 19		—	
No. 20		—	
No. 21	200m	—	
Oil Terminal	244m	9.5m	T-head pier with breasting dolphins located on the inside of the main breakwater. Can accommodate tankers up to 60,000 dwt, with a maximum length of 230m.

A lighted platform stands about 6.5 miles NNW of the terminal.

A wreck, with a least known depth of 6m, lies about 1 mile WNW of the terminal. Another wreck, with a least known depth of 15m, lies about 0.75 mile S of the terminal.

Ash Shariqah (Sharjah) (Mina Khalid) (25°22'N., 55°23'E.)

World Port Index No. 48271

15.14 Ash Shariqah consists of Khawr ash Shariqah, entered about 2 miles NE of the main harbor, and Mina Khalid, the main deep-water facility. Khawr ash Shariqah is used by smaller vessels only.

Sharjah Ports Home Page

http://www.sharjahports.ae

Mina Khalid (Sharjah Container Terminal)

http://www.gulftainer.com

Winds—Weather.—See paragraph 15.1 for further information.

Tides—Currents.—The tidal rise is reported to be 1.2m. A strong set, which flows SW on the flood and NE with the ebb, will normally be experienced at the harbor entrance.

Depths—Limitations.—The approach channel to Mina Khalid was dredged to a depth of 11.5m, while the harbor is dredged to depths of 9.2 to 10.5m. It has been reported (2008) that dredging is in progress to increase the depths in the approach channel and alongside Berths 1 to 4 to 12.5m.

The entrance channel and main part of the outer basin to Khawr Ash Shariqah are dredged to a depth of 8m; the inner channel and inlet are dredged to a depth of 5.5m. Several small wharves are available, with alongside depths of 2.7 to 4m. General cargo vessels, with a maximum length of 80m, can be accommodated. All container or ro-ro cargo is handled at the facilities in Mina Khalid.

Berth information can be found in the table titled **Ash Shariqah (Sharjah) (Mina Khalid)—Berthing Facilities**.

Aspect.—Breakwaters enclose the entrance channels of both Khawr Ash Shariqah and Mina Khalid. A group of conspicuous chimneys associated with a power plant stands near the shore at the S end of Mina Khalid.

Several prominent radio towers are located throughout the area. The city of Ash Shariqah contains several minarets,

Courtesy of Sharjah Department of Seaports and Customs

Ash Shariqah—General Cargo Berths (Berth No. 1 through Berth No. 7) from WNW

Courtesy of Sharjah Department of Seaports and Customs

Ash Shariqah from SW

towers, and a fort, but they are overshadowed by tall modern buildings.

Pilotage.—Pilotage is compulsory for all vessels over 150 nrt or greater than 50m long. Pilotage is available 24 hours and is obtained from a red and white vessel at the boarding ground located near Sharjah Fairway Lighted Buoy, about 1.5 miles NW of the head of the W breakwater. Vessels arriving between 2400 and 0600 should radio their request for pilotage before 2200.

The pilot vessel can be contacted on VHF channels 16 and 74.

Regulations.—Vessels should radio their ETA at least 72 hours in advance, confirming 48 hours and 24 hours prior to arrival. Entering vessels are requested to remain seaward of the entrance buoy if awaiting the pilot, anchoring if necessary. Sharjah Port Control should be contacted on VHF channel 16 when within range.

Contact Information.—Port contact information can be found in the table titled **Ash Shariqah (Sharjah) (Mina Khalid)—Contact Information**.

Anchorage.—The designated anchorage, with depths greater than 20m, is located about 5.7 miles NW of Sharjah Fairway Lighted Buoy and is best seen on the chart

Directions.—The approach channel to Mina Khalid is well-marked. The local authorities should be contacted before attempting to enter Khawr Ash Shariqah.

Caution.—Two dangerous wrecks lie about 4.5 miles NNW of the port in a spoil ground area where there are freshwater sea bed springs which may cause false readings on echo sounders. Two other dangerous wrecks, with depths of 8m and 10m, respectively, lie about 1.25 and 4.5 miles WNW of Sharjah Fairway Lighted Buoy, about 0.5 mile S of the outer anchorage.

Al Khan (25°20'N., 55°21'E.) is a village located on the N side of the entrance to Khawr al Khan. The village is an easily-distinguished landmark, as the surrounding area is very low and swampy. There are several towers and a minaret in the village. The entrance to the inlet leads over a bar and into a basin, about 1.8m deep, which is used by fishing craft.

Dubayy (Dubai) (Mina Rashid) (25°16'N., 55°18'E.)

World Port Index No. 48275

15.15 Dubayy is one of the busiest ports in the United Arab Emirates, and is considered to be the commercial capitol of that nation. The harbor is divided into three sections.

Khawr Dubayy, a narrow river, extends 3 miles E, from a point just N of the N breakwater protecting the main deep-water harbor, to a bridge.

Above the bridge, the channel spreads into several swampy lagoons. Mina Rashid, comprising the main cargo terminals, is the NE of the enclosed basins; Dubai Drydock Harbor is the SW of the two. Both are best seen on the appropriate chart.

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Winds—Weather.—See paragraph 15.1 for further information. The shamal, blowing from WNW and NW, may raise a rough sea at the anchorage.

Tides—Currents.—The tidal rise at springs is 1.2 to 1.8m, while the neap rise is 0.9 to 1.2m. Currents here are generally weak and tend to follow the channel, but cross-channel currents of up to 2 knots have been reported (2004).

Depths—Limitations.—Mina Rashid is formed by two large basins, separated by a broad mole which is quayed on both sides, and is protected by two breakwaters. The least charted depth on the range line through the entrance is 13m.

There are depths from 10 to 13m in the harbor, but a bank, with depths of 6 to 10m, extends SW from the NE end of the outer basin; a wreck, with a depth of 2.7m, lies in the E corner of the outer basin.

Vessels with drafts up to 12.8m can berth at the Container Terminal. Vessels with drafts up to 11.5m can berth at the general cargo berths. Vessels over 260m in length may berth at the harbormaster's discretion. The normal required underkeel clearance is 0.5m.

The Petroleum Jetty, situated near the root of the main breakwater, can accommodate vessels up to 260m long, with a maximum draft of 11.3m. Vessels with a draft of 11.6m can use the jetty at HW with the permission of the harbormaster.

Dubayy Drydock Harbor was dredged to a depth of 11.5m. An FPSO Conversion Quay, with a dredged alongside depth of 11m over a berthing length of 630m, is reported (2009) to have been constructed on the lee side of the main breakwater. A directional sector light leads through the entrance to this harbor.

Dubai Maritime City, located between Mina Rashid and Dubai Drydock Harbor, consists of a basin, with charted depths of 10.2 to 12.0m, enclosed by a breakwater on its W side.

Several shoal patches are charted in the approaches to Khawr Dubayy and are best seen on the appropriate chart.

Ash Shariqah (Sharjah) (Mina Khalid)—Contact Information

	Port Authority	Port Control
Call sign	—	Sharjah Port Control
VHF	—	VHF channels 16 and 74
Telephone	971-6-5281666	971-6-5281347
Facsimile	971-6-5281425	—
E-mail	shjports@emirates.net.ae	—

The fairway has a least depth of 4.9m over a tunnel located about 0.1 mile SE of the channel entrance; the channel is dredged to a depth of 5.5m to a bridge with a movable center span.

Local authorities should be contacted for details on bridge regulations and the channel above the bridge. Caution should be exercised when transiting this channel, as it is subject to silting. The buoyage within the fairway is moved as necessary to mark the shifts within it. Several cable areas extend across the channel and are best seen on the chart.

Dubayy (Dubai) (Mina Rashid)—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Quay 1			
No. 1	177m	9.3m	General and bulk cargo.
No. 2	193m	9.3m	General and bulk cargo.
No. 3	183m	9.3m	General and bulk cargo.
No. 4	183m	9.3m	General and bulk cargo.
No. 5	—	9.3m	General and bulk cargo.
Quay 2			
No. 6	213m	9.3m	General and bulk cargo.
No. 7	213m	9.3m	General and bulk cargo.
No. 8	213m	9.3m	General and bulk cargo.
No. 9	213m	10.6m	General and bulk cargo.
No. 10	213m	10.6m	General and bulk cargo.
Quay 3			
No. 11	172m	9.3m	General and bulk cargo.
No. 12	172m	9.3m	General and bulk cargo.
No. 13	172m	9.3m	General and bulk cargo.
No. 14	172m	9.3m	General and bulk cargo.
No. 15	172m	9.3m	General and bulk cargo.
No. 16	215m	11.4m	Ro-ro facility.
Quay 4			
No. 17	180m	11.4m	General and bulk cargo.
No. 18	180m	11.4m	General and bulk cargo.
No. 19	180m	11.4m	General and bulk cargo.
No. 20	180m	11.4m	General and bulk cargo.
No. 21	180m	11.4m	General and bulk cargo.
No. 22	180m	11.4m	General and bulk cargo.
No. 23	180m	11.4m	General and bulk cargo.
No. 24	180m	11.4m	General and bulk cargo.
No. 25	180m	11.4m	General and bulk cargo.
Quay 5			
No. 26	180m	11.4m	General and bulk cargo.
No. 27	180m	11.4m	General and bulk cargo.
No. 28	180m	11.4m	General and bulk cargo.
No. 29	180m	11.4m	General and bulk cargo.
No. 30	180m	11.4m	General and bulk cargo.
No. 31	244m	11.4m	Container terminal.
No. 32	244m	11.5m	Container terminal.
No. 33	310m	12.8m	Container terminal.
No. 34	310m	12.8m	Container terminal.
No. 35	310m	12.8m	Container terminal. Ro-ro facility.

Burg al Arab Hotel

Aspect.—The city of Dubayy proper lies on the S side of the Khawr Dubayy, while its suburbs extend to the NE and SW along the coast on either side of the khawr. Reports indicate that many of the older landmarks in the city have been obscured by new buildings.

A conspicuous tower stands near the coast about 0.5 mile ENE of the entrance to Khawr Dubayy. Two radio towers stand, 0.9 mile and 1.2 miles, respectively, ESE of the entrance to Khawr Dubayy; two water towers stand 0.8 mile SSE and

Dubai (Mina Rashid) from SW

1.2 miles E, respectively, of the same point.

Several lighted minarets are located within 0.5 mile of Khawr Dubayy. A conspicuous flour mill stands 1 mile SSW of the entrance to Khawr Dubayy.

The Burg al Arab Hotel, 321m high, resembles the sails of a dhow and is very conspicuous.

Pilotage.—Pilotage for Mina Rashid and Dubayy Drydock Harbor is compulsory and is available 24 hours. Pilots will board about 2.8 miles WNW of Mina Rashid West Breakwater. It has been reported (2007) that pilots board about 1 mile N of Mina Rashid West Breakwater.

Pilotage for Khawr Dubayy is available from 0600 until 2359 although pilotage outside these hours can be arranged through the harbormaster. The pilot boards about 2.8 miles WNW of Mina Rashid West Breakwater.

The pilot vessel can be contacted on VHF channels 13 and 16.

Regulations.—Vessels using Mina Rashid or Dubayy Drydock Harbor should send their ETA 72 hours and 24 hours in advance to their agent and include the following information:

1. Length overall.
2. Draft.
3. Whether bunkering is required.

Vessels should contact Port Control on VHF channel 16 and request berthing instructions.

Vessels using Khawr Dubayy should send their ETA 72 hours in advance. Vessels should confirm the ETA 24 hours in advance and then maintain a listening watch on VHF channels 16 and 68 until they have berthed. Vessels should send their ETD 2 hours in advance.

Vessels approaching the port and failing to establish VHF contact should anchor about 2 miles off the port entrance.

It has been reported (2007) that vessels must contact Dubai Port Control 2 hours prior to arrival or departure on VHF channels 16 and 68 (call sign: Dubai Port Control) to confirm pilot and tug needs. Failure to do so may result in delays.

The approach to Khawr Dubayy lies W of the Palm Island Three exclusion zone, leading E between Lighted Buoy B and Khawr Dubayy Fairway Lighted Buoy. Vessels must contact the port authorities for the latest information.

The former N approach channel through the Palm Island Three exclusion zone is no longer available.

Contact Information.—Mina Rashid Port Control can be contacted, as follows:

1. Call sign: Port Rashid Control
2. VHF: VHF channels 6, 9, 13, 14, and 16
3. Telephone: 971-4-3459565

Khawr Dubayy Port Control can be contacted, as follows:

1. Call sign: Dubai Port Control
2. VHF: VHF channels 12, 16, and 68
3. E-mail: customerservice@dpa.ae

Anchorage.—Designated anchorage areas, best seen on the chart, to be used when required by vessels bound for Dubai are located about 15 miles NW of the port. Further information on

these anchorages can be found in the table titled **Dubai—Designated Anchorage Areas**.

Limited anchorage space is available, within the breakwaters of Mina Rashid, with the approval of Dubai Port Control.

An anchorage area, for the use of the Dubai Drydock Harbor, is situated W of the Main Breakwater of the Dubai Drydock Harbor and is best seen on the chart.

Directions.—Lights are shown from the various breakwaters.

Dubai—Designated Anchorage Areas	
Anchorage Area	**Remarks**
A	Port Rashid Cargo Berth, Dry Dock, and Short Term Anchorage. May be used for a maximum of 5 days with permission of the harbormaster.
B	Long Term Anchorage. Use of this anchorage is subject to authorization from the Dubai Maritime City Authority (DMCA). A dangerous wreck is located within the limits of this anchorage in position 25°23'16.2"N, 55°03'43.2"W.
C	Anchorage for vessels awaiting ship-to-ship and bunkering operations. Use of this anchorage is subject to authorization from the Dubai Maritime City Authority (DMCA).
D	Anchorage for vessels engaged in ship-to-ship and bunkering operations. Use of this anchorage is subject to authorization from the Dubai Maritime City Authority (DMCA).
E	Special Purpose Anchorage.
Note.—There is no protection from the shamal in this area, which usually blows from WNW with little warning. Vessels anchoring outside the areas within the Exclusive Economic Zone without authorization from the DMCA will be liable to prosecution.	

Caution.—Numerous vessels generally lie at anchor SW of the harbor approach buoy.

Offshore oil installations should not be approached within a distance of 1 mile.

Major construction, known as Palm Deira (Palm Island Three), is in progress (2015) N of the harbor entrance and NE of Dubayy Approach Lighted Buoy. This area is surrounded by an exclusion zone marked by lighted buoys.

Major construction, known as Palm Jumairah, is in progress (2015) close SW of the root of Dubai Drydock Harbor main breakwater. The area is surrounded by an exclusion zone marked by lighted buoys.

Major construction, known as Jumana Island, is in progress (2015) about 2 miles SW of Palm Jumairah. The area is surrounded by an exclusion zone.

Major construction, known as The World Project, is in progress (2015) centered in an area about 5.5 miles SSW of the Dubai Drydock Harbor main breakwater head. The area is surrounded by an exclusion zone marked by lighted buoys.

It has been reported (2008) that Mina Rashid will be terminating all cargo operations by the end of 2008, with all commercial operation transferred to Mina Jabal Ali; the facilities would continue to handle cruise ship and ferry traffic. The basins would then be reclaimed and used to build high-rise condominiums, a two-berth cruise ship terminal, and a marina. However, local authorities have stated (2008) that this schedule is based on traffic conditions here and in Minal Jabal Ali and there is no firm time line on when this would actually occur.

It has been reported (2008) that construction activity has begun in the inner basin of the port. Vessels should contact local authorities for further information.

15.16 Umm as Suqaym (25°10'N., 55°13'E.), a village about 8 miles SW of Dubayy, has two prominent minarets. There is a yacht and fishing harbor protected by breakwaters, with a tower and flagstaff standing near the root of the E breakwater. Two large hotels at the yacht harbor are conspicuous from seaward; one hotel has the appearance of a yacht's sail.

A wreck, marked by a lighted buoy close NW of it, lies 10.5 miles offshore NW of Umm as Suqaym.

Jabal Ali (25°02'N., 55°07'E.), a 67m high flat-topped hill, is topped by three radio masts marked by obstruction lights.

Three large dish-shaped aerials are located on the W side of the hill. Eight 40m high smokestacks of a power station rise 2 miles N of the hill.

Cooling water intakes, connected to the power station by a submarine pipeline, extend up to 0.3 mile offshore.

A cluster of three buildings, located 4 miles SW of the hill, is the control center for a firing range.

Mina Jabal Ali (25°01'N., 55°03'E.)

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15.17 Mina Jabal Ali (Mina Jebel Ali) is a large artificial harbor and industrial harbor located about 21 miles SW of Dubayy.

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Winds—Weather.—See paragraph 15.1 for further information. During the morning and evening hours, light SE winds prevail, but the wind usually veers to the NW and freshens to force 4 to 5 by noon. Early morning fog is likely from November to March.

Tides—Currents.—The tidal rise here is 1.1m. Tidal currents, in combination with wind-driven currents, may cause cross-channel sets up to 1.5 knots, although a rate of 4 knots has been reported (2015). It has also been reported (2011) that currents up to 2 knots have been observed in the vicinity of the piers.

It has been reported (2003) that strong cross-channel sets, caused by the extensive reclamation projects NE and SW of the dredged channel, may be experienced.

Mina Jabal Ali—Gas Refinery (located E of harbor entrance)

Mina Jabal Ali—Entrance approach from N

Mina Jabal Ali—Tanks and silos at the entrance to the Outer Basin

Depths—Limitations.—The approach channel was dredged to a depth of 17m (2006) as far as the entrance to the inner basin.

Normally, two-way traffic is allowed in the approach channel, but it has been reported (2013) that during increased sea and swell conditions only one-way traffic may be allowed.

The harbor is divided into two basins. North Basin, the outer basin, comprising Berth 1 through Berth 17, has been dredged to 14m; Berth 16 and Berth 17 have an alongside depth of 16m. South Basin, the inner basin, comprising Berth 18 through Berth 66, has been dredged to 11.5m, although it has been reported (2001) the depth at Berth 66 is only 10.5m; Berth 45 has

an alongside dredged depth (2006) of 16m.

Tanker/LPG Berth No. 1, with a dredged depth of 15m (2006), lies close inside the entrance on the NE side of the harbor; vessels berth starboard side-to. Vessels with a maximum loa of 273m and a maximum draft of 14.0m at HW can be accommodated.

Tanker Berth No. 3, Tanker Berth No. 5, and Tanker Berth No. 7 have a dredged depth of 15m alongside (2006); vessels berth starboard side-to. Vessels with a maximum length of 273m and a maximum draft of 14.2m at HW can be accommodated.

West Wharf and East Wharf, located on each side of the entrance between the tanker berths and the Outer Basin, have been dredged to a depth of 5.5m and can accommodate vessels with a maximum draft of 5.5m. The wharfs are used by bitumen tankers, bunkering vessels, and small craft.

An LNG dolphin berth is located close N of the E end of Megamax Terminal 1. The berth has an alongside depth of 14.0m (2008) and is approached through a basin dredged (2008) to a depth of 15.8m.

Dry bulk, ro-ro, container, and general cargo vessels are handled at various berths throughout the harbor; information on these berths is given in the accompanying table titled **Mina Jabal Ali—Berth Information**.

Mina Jabal Ali—Berth Information		
Berth	**Maximum draft**	**Remarks**
North Basin		
Quay No. 1		
No. 1	13.25m	Bulk carriers.
No. 2	13.2m	Petroleum vessels with a maximum loa of 200m. Reported (2013) dredged to 16.0m.
Nos. 3-5	13.2m	Bulk carriers.
No. 6	13.2m	Petroleum vessels with a maximum loa of 295m. Reported (2013) dredged to 16.0m.
No. 7	—	Dredged depth of 14.0m alongside (1980).
Quay No. 2		
Nos. 8-9	13.2m	Star Energy Resources. Total berthing length of 600m. Can simultaneously accommodate two vessels of up to 125,000 dwt, with a maximum loa of 255m.
Quay No. 3		
Nos. 10-15	13.2m	Containers. Total berthing length of 2,500m. Reported (2013) dredged to 16.0m.
Nos. 16-17	14.5m	
South Basin		
Quay No. 4		
Nos. 18-19	17.0m	Containers. Total berthing length of 2,500m.
Quay No. 5		
Nos. 21-25	10.5m	Containers. Total berthing length of 1,545m.
Nos. 29-33	10.5m	Bulk cargo. Total berthing length of 910m.
Quay No. 6		
Nos. 34A-34B	10.7m	Ro-ro. Total berthing length of 360m. Reported (2013) dredged to 16.0m.
Quay No. 7		
Nos. 35-43	10.5m	Bulk cargo.
Nos. 44-48	14.0m	Bulk cargo.
No. 51	10.5m	Chemical berth. Can accommodate vessels with a maximum loa of 273m.
Note.—Quay No. 7 has a total berthing length of 3,145m.		
Quay No. 8		
Nos. 55-56	—	Dredged depth of 11.5m alongside (1980).
Nos. 56A-56C	—	Dredged depths of 5.5 to 7.0m alongside (1980).
No. 56D	—	Dredged depth of 5.5m alongside (1980).

Mina Jabal Ali—Berth Information		
Berth	**Maximum draft**	**Remarks**
Quay No. 9		
Nos. 57-60	10.75m	General cargo.
Quay No. 10 (Container Terminal 3)		
Nos. 61-66	10.75m	Containers. Total berthing length of 1,860m. Alongside depth of 11.5m.
Megamax Terminal 1		
Nos. 71-77	17.0m	Containers. Located E of harbor entrance. Total berthing length of 2,800m. Approached through a basin dredged to 15.8m (2008). Alongside depths dredged to 17.2m (2008). Megamax Terminal 2 is under construction (2015) close N of Megamax Terminal 1.

The maximum draft allowed in the harbor is 13m plus the height of the tide.

Aspect.—Jabal Ali and the power station close-by it, which have already been described in paragraph 15.16, are conspicuous.

A conspicuous building fronted by a marina stands about 0.2 mile W of the port. Two conspicuous silos stand on the SW side of the port.

It has been reported (2012) that charted landmarks may be difficult to distinguish.

Pilotage.—Pilotage is compulsory for all vessels of 150 nrt or over with the exception of warships, pleasure craft, MENAS tenders, local craft and tugs, dredges, and barges. Pilotage is available 24 hours, except for LNG vessels and vessels with a length of 300m and over, when it is available only during daylight hours.

Vessels requiring a pilot should contact Port Control on VHF at least 24 hours prior to arriving at the pilot boarding place.

Pilotage for departing vessels should be requested at least 1 hour prior to departure although it has been reported (2014) pilots should be requested 3 hours prior to departure.

It has been reported (2015) departing container vessels will give 2-hour, 1-hour, and 30-minute notice prior to the completion of cargo operations to enable the pilot to board the vessels prior to completion of these operations so the vessel will be ready to sail once cargo operations have been completed.

The pilot boarding ground is located about 2 miles SE of Jabal Ali Fairway Lighted Buoy, although it has been reported (2008) that pilots also board near the breakwater with prior permission from Port Control. It has also been reported (2012/2013) pilots may board vessels between Buoy Set 2 and Buoy Set 3 or between Buoy Set 4 and Buoy Set 5.

Vessels with a draft of greater than 13.25m must pick up the pilot in the charted pilot boarding area and may not approach closer than the pilot boarding area until the pilot has boarded and a passage plan agreed.

The pilot vessel can be contacted on VHF channels 16, 69, and 72.

It has been reported (2014) the pilot boats have a white hull and an orange superstructure. It has also been reported (2015) the pilot boat has a blue hull and a white superstructure.

Regulations.—Vessels should send their ETA 48 hours and 24 hours in advance; a corrected ETA should be sent if changes of more than 1 hour occur.

Before arrival, vessels should inform Port Control of the following information:

1. Vessel's name.
2. Port of registry.
3. Master's name.
4. Gross tonnage.
5. Length.
6. Draft.
7. Cargo to discharge, load, or in transit.
8. Pilot boarding arrangements.
9. Number of crew (state number of deck crew available for maneuvering).
10. Health information.
11. Last port of call.

Vessels should confirm their ETA when within VHF range, and again at least 2 hours prior to arrival although it has been reported (2012) that vessels may be requested to confirm their ETA 3 hours prior to arrival.

Vessels calling at this port are required to be fitted with a fully-operational radar; a VHF set equipped with VHF channels 11, 14, 16, 67, and 69; sufficient propulsion and deck machinery; adequate moorings to safely secure the vessel; efficient signaling equipment; fully operational tachometer, rudder, and helm indicators; an efficient mooring stations communications system; and an efficient anchor windlass and ground tackle.

If the above requirements cannot be complied with, the harbormaster should be advised of the vessel's situation through Jabal Ali Port Control prior to arrival. Within the limits of the port, inbound or outbound vessels shall have right-of-way over all other shipping.

Vessels may not overtake in the dredged channel.

It has been reported (2015) vessels are allowed to transit the approach channel and the harbor at the following speeds:

1. Approach channel up to Buoy Set 11—15 knots.
2. Buoy Set 11 to Buoy Set 15—12 knots.
3. Buoy Set 15 to the vicinity of the control tower—7 knots.
4. In the harbor inside the control tower—5 knots.

It has been reported (2009) that vessels calling at Mina Jabal Ali must have an official port clearance from the previous port clearly stating the vessel's next port is Mina Jabal Ali. Vessels carrying a port clearance without this declaration will not be accepted. This includes vessels whose transit has been changed since their departure from their previous port; the port clear-

Mina Jabal Ali—Tanker Berth No. 3 (left) and Tanker Berth No. 1 (right)

Mina Jabal Ali—Tanks at entrance to the Outer Basin

ance must be amended prior to arrival at Mina Jabal Ali.

Contact Information.—Mina Jabal Ali Port Authority can be contacted, as follows:

1. Telephone: 971-4-8815000
2. Facsimile: 971-4-8835430
3. Telex: 893-47398 DPA EM

Mina Jabal Ali Port Control can be contacted, as follows:

1. Call sign: Jabal Ali Port Control
2. VHF: VHF channels 16 and 69
3. Telephone: 971-4-8835326
   971-4-8835251
4. Facsimile: 971-4-8835430
5. E-mail: marineportcontrol@dpworld.com

Anchorage.—Anchorage is available in a charted area centered about 3 miles SW of Jabal Ali Fairway Lighted Buoy, in depths of 15.9 to 23.5m, mud and shells, poor holding ground. This anchorage may be used for a maximum of 5 days with permission of the harbormaster.

Anchorage is prohibited within the vicinity of an untrenched natural gas pipeline charted N of the port.

Caution.—Many small fishing vessels operate in the vicinity of Jabal Ali Fairway Lighted Buoy.

Spoil ground areas, best seen on the chart, should be avoided.

It has been reported (2008) that approaching vessels may find other vessels anchored in the approaches outside the charted anchorage area.

It has been reported (2002) that uncharted tanks, cranes, and buildings may obscure charted landmarks and navigational aids. It has also been reported (2008) that extensive construction and land reclamation projects may make recognizing navigational aids difficult.

Extensive land reclamation operations are in progress (2015) NE and SW of the approach channel. Artificial reefs and islands, known as Palm Jumeirah (Palm Island One) and Palm Jebel Ali (Palm Island Two), are under construction 7.5 miles NE and 2.5 miles SW, respectively, of the approach channel. Both construction areas are surrounded by exclusion zones best seen on the chart; the exclusion zone surrounding Palm Jebel Ali is marked by lighted buoys. Construction traffic crosses the approach channel in the vicinity of Lighted Buoy 9 and Lighted Buoy 10.

Construction of Blue Water Island, located SW of Palm Jumeirah in the vicinity of position 25°05.0'N, 55°07.4'E, has begun (2015). An exclusion zone, marked by lighted buoys, is bounded by lines joining the following positions:

a. 25°05'06.6"N, 55°07'23.4"E.
b. 25°04'48.6"N, 55°07'30.6"E.
c. 25°04'32.4"N, 55°07'30.6"E.
d. 25°04'29.4"N, 55°07'24.6"E.

e. 25°04'45.6"N, 55°07'04.8"E.

An exclusion zone has been established (2006) for the Jabal Ali Megamax Project. The zone, located between the NE side of the approach channel and the SW side of the charted pipeline safety corridor, extends about 2 miles NNE of East Breakwater. This project will eventually consist of 14 islands of reclaimed land, with container and other port facilities constructed on them, extending seaward. Construction of Container Terminal No. 3, the next terminal, across from Container Terminal No. 2, known as the Megamax Terminal, began in 2009 and was scheduled to be completed in 2010 although it is reported (2009) that construction of this terminal has been delayed. A detached LNG terminal, with a dredged depth of 14m and protected by a breakwater, has been constructed between the E ends of Container Terminal No. 2 and Container Terminal No. 3. There are also plans to construct an aluminum facility between the two container terminals. Further reclamation and construction will be undertaken based on traffic volume, congestion, and the needs of the port.

An exclusion zone, extending up to 8 miles offshore, has been established close SE of Palm Jebel Ali and is best seen on the chart.

An exclusion zone has been established, as best seen on the chart, about 14 miles NW of Jabal Ali Fairway Lighted Buoy. A dangerous wreck, marked by two buoys, lies close E of the exclusion zone.

Buoys and other aids to navigation in the vicinity of the port and its approaches may be move, changed, or established as construction progresses. Vessels are advised to navigate with caution and consult with local authorities for the latest information.

15.18 Dawhat al Jabajib (24°59'N., 55°02'E.) is a shallow coastal indentation with a foreshore containing some isolated rocks which show up at LW against a featureless background.

The coast in the area is very low and intersected by many creeks and mangrove swamps.

From **Khawr Ghanadah** (24°50'N., 54°45'E.), a foul and shallow inlet, to Abu Zaby (Abu Dhabi), about 30 miles SW, there is a succession of inlets, mostly connecting with each other and separated from the sea by narrow strips of sand.

An extensive reef extends as far as 6 miles offshore along this stretch of coast to Abu Zaby. Depths of 9.1 to 11m exist close seaward of the reef, but soundings are very uneven.

The wrecks of two barges, with a depth of 12m and marked by a lighted buoy, lie 12 miles NNW of Ras Gantut.

Caution.—A powerful radio transmitter has been established about 1 mile SW of Ras Hasyan; it transmits daily in the 1470 to 1490 kHz band.

Fire damage could occur in shipboard electronics equipment as a result of radio frequency propagation up to a distance of about 4.5 miles from the station. It is advisable to keep at least 6 miles from the station.

15.19 Khalifa Industrial Zone Abu Dhabi (24°51'N., 54°38'E.), formerly known as Khalifa Port and Industrial Zone, is located about 2.5 miles offshore from a position located about 6 miles SW of Ras Ghanadah. The port is connected to the shore by a causeway and a trestle bridge.

Abu Dhabi Ports Company Home Page

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Depths—Limitations.—When fully completed, the port will have about 32,000m of total berthing space for container and general cargo vessels. The first phase of the project opened to vessel traffic in 2012.

The port is approached through a 12-mile long 250m-wide buoyed deep-draft approach channel dredged (2010) to a depth of 16.5m. The harbor basin is dredged (2010) to a depth of 16.0m.

The EMAL Jetty, used for the import of alumina, has a total berthing length of 800m can accommodate two 60,000 ton vessels.

Pilotage.—Pilotage is compulsory for the following vessels:

1. All vessels with an loa of 100m and over.
2. All vessels with an loa of 60m and over carrying hazardous cargo in bulk.
3. All vessels with an loa of 24m and over carrying more than 12 passengers.

Inbound vessels requiring pilotage should send their ETA, maximum arrival draft, and destination to Khalifa Port Control 12 hours prior to arrival. The ETA should be confirmed 3 hours and 2 hours prior to arrival at the pilot boarding position.

Outbound vessels requiring pilotage should advise Khalifa Port Control 12 hours prior to ETD. The ETD should be confirmed 3 hours and then 30 minutes prior to departure,

Pilots board in position 24°57.1'N, 54°33.9'E.

All pilot boarding arrangements are confirmed by Khalifa Port Control.

Vessel Traffic Service.—Vessels should send their ETA 7 days, 72 hours, 48 hours, 24 hours, and 3 hours prior to arrival. The 3-hour message should include the following information:

1. Vessel name and call sign.
2. MMSI number.
3. Position.
4. ETA at pilot boarding position.
5. Any equipment deficiency.

Vessels must also report, as follows:

1. Prior to entering the port limits or departing a berth.
2. When underway after departing a berth.
3. When vessel is safely berthed alongside.
4. Fifteen (15) minutes prior to shifting berth.

Contact Information.—Khalifa Port Control/Vessel Traffic Service can be contacted, as follows:

1. Call sign: Khalifa Port Control
2. VHF: VHF channels13 and 16
3. Telephone: 971-2-4925666
4. Facsimile: 971-2-4924746
5. E-mail: khalifa.vts@adpc.ae

The harbormaster can be contacted, as follows:

1. Telephone: 971-2-4925600
2. Facsimile: 971-2-4925606

Anchorage.—Seven designated anchorage areas, best seen on the chart, are located in the approaches to the port.

The Northern Area, which has been designated A1 through A4, has a minimum depth of 16.1m and is suitable for large

vessels, long-term stay vessels, and vessels awaiting further instructions.

The Southern Area, which has been designated B1 through B3, has a minimum depth of 16.1m and is suitable for smaller vessels or short-stay vessels waiting for a pilot.

Vessels should be aware that dredging is in progress (2016) to widen and deepen the approach channel.

Abu Zaby (Abu Dhabi) (Mina Zayed) (24°30'N., 54°20'E.)

World Port Index No. 48278

15.20 Abu Zaby, located on Abu Zaby Island, lies about 45 miles SW of Mina Jabal Ali. Besides serving as a port, the city also functions as the capital of the United Arab Emirates.

Abu Zaby (Mina Zayed) Home Page

http://www.adterminals.ae

Abu Dhabi Ports Company Home Page

http://www.adpc.ae

Winds—Weather.—See paragraph 15.1 for further information. The port is open to the shamal, blowing from the N and NW.

Tides—Currents.—Tides here have a maximum spring range of 2m, while the neap range is 0.1m. Tidal currents in the area tend to follow the coast, with spring rates of less than about 1 knot.

Strong tidal currents have been reported within Mina Zayed and the approach channel; rates of up to 4.5 knots occur within the dredged fairway, with the current setting cross-channel.

Depths—Limitations.—The harbor approach channel, extending about 5 miles NW of the island, is dredged to a depth of 14.3m (2012). Just within the breakwaters, a secondary fairway, dredged to a depth of 11m, joins the main channel and continues to the SE, leading to an offshore supply base within Khawr al Bighal. The main fairway turns sharply S at the junction of the two channels and leads to Mina Zayed.

Mina Zayed has been dredged throughout to a depth of 14.3m (2012), except for a spur at its NW end, which has been dredged to a depth of 5.9m (2012).

There are 21 berths available, handling container, cement, grain, and bulk cargo. Tankers are accommodated at the SE end of the harbor, while ro-ro vessels med-moor to the break-bulk berths to work cargo. Vessels with a draft greater than 11m must take the tide into account when berthing.

Berth limitations are shown in the table titled **Abu Zaby (Mina Zayed)—Berth Information**.

Dhow Harbor is approached through a buoyed channel leading N of a detached breakwater, the N end of which is located about 2 miles SW of Mina Zayed harbor entrance. Both the channel and basin are dredged to a depth of 6m.

Municipality Port, with a dredged depth (2008) of 6m and best seen on the chart, has been constructed within reclaimed land located E of the entrance channel to Dhow Harbor.

A bridge, with a vertical clearance of 20m, connects Abu Zaby Island and Jazirat as Sadiyat across Khawr al Bighal, about 1 mile SE of the entrance to Khawr al Bighal.

Abu Zaby (Mina Zayed)—Berth Information

Berths	Length	Depth	Maximum draft	Remarks
No. 1	198m	14.6m	12.5m	Container berths
No. 2	210m	12.6m	12.5m	Container berths
No. 3	292m	13.0m	12.5m	Container berths
No. 4	249m	13.0m	12.5m	Container berths
No. 5	198m	13.0m	12.5m	General cargo and ro-ro berth
No. 6	80m	13.0m	12.5m	General cargo berth
No. 7	192m	13.0m	12.5m	General cargo berth
No. 8	208m	13.0m	12.5m	General cargo berth
No. 9	218m	13.0m	12.5m	General cargo berth
No. 10	146m	5.8m	5.5m	Service vessels and tugs
No. 11	234m	4.7m	5.5m	Service vessels and tugs
No. 12	286m	5.8m	5.5m	Service vessels and tugs
No. 13	256m	5.8m	5.5m	General cargo berth
No. 14	163m	12.8m	12.5m	General cargo and ro-ro berth
No. 15	195m	11.1m	12.5m	General cargo and ro-ro berth
No. 16	180m	12.8m	12.5m	General cargo and ro-ro berth

Abu Zaby (Mina Zayed)—Berth Information				
Berths	Length	Depth	Maximum draft	Remarks
No. 17	180m	12.0m	12.5m	General cargo and ro-ro berth
No. 18	180m	11.0m	12.5m	General cargo and ro-ro berth
No. 19	205m	11.0m	12.5m	Bulk cargo berth
No. 20	261m	12.5m	12.5m	General cargo berth
No. 21	240m	13.2m	12.5m	General cargo and tanker berth

A channel, dredged to a depth of 6m (2009) and marked by lighted buoys, leads N of Jazirat as Sammaliyah (24°28'N., 54°30'E.) to a marina at the S extremity of Yas Island. Lesser depths than charted have been reported (2014) in this channel.

Musaffah Channel (Khawr al Batin) (24°28'N., 54°18'E.) is entered between breakwaters located about 6 miles SW of the entrance to Mina Zayed. It was dredged (1983) to a depth of 6m, but it has been reported (2006) that significant shallower depths than charted, ranging from 0.9 to 5.3m, are in the boundaries of the dredged channel; vessels should navigate with caution and consult local authorities for the latest information.

A speed limit of 6 knots is in effect in Musaffah Channel between latitude 54°24'E (close E of Lighted Buoy No. 29) and latitude 54°27'E (close W of Lighted Buoy No. 38).

A fixed bridge, with a vertical clearance of 28.5m, crosses Musaffah Channel about 4 miles above its entrance.

A side channel, marked by lighted buoys and dredged to a depth of 6m in 2008, leads from Musaffah Channel to the Abu Dhabi National Exhibition Center Quay (ADNEC Quay) (24°25.0'N., 54°26.1'E.).

Musaffah Channel is closed to all commercial traffic; commercial traffic will use New Musaffah Channel to access Musaffah New Port.

New Musaffah Channel, leading W and S of **Jazirat Hudayriyat** (24°24'N., 54°24'E.) to Musaffah New Port, consists of two sections, as follows:

1. Offshore section—A straight section, on a N-S orientation, with a length of 7 miles and dredged (2010) to a depth of 9m over a width of 200m.
2. Inshore section—Various reaches with a total length of about 18 miles. The channel is dredged (2010) to a depth of 9m over a width of 200m, although the channel width has been increased in the vicinity of channel bends.

New Musaffah Channel may be closed in the following conditions:

1. Wind speeds greater than 35 knots.
2. Visibility less than 0.5 mile.

Musaffah New Port (24°23'N., 54°30'E.), in the Mussafah Industrial Area (Mossafah Industrial Area), consists of a 340m long main quay and two 40m long side quays.

Vessels must have an underkeel clearance of 1m when transiting New Musaffah Channel.

A speed limit of 12 knots is in effect in New Musaffah Channel.

Aspect.—Khawr al Bighal (24°30'N., 54°27'E.), the natural channel around which the port of Abu Zaby is formed, is typical of the salt creeks found along this coast.

Above the harbor, Khawr al Bighal separates into several arms, between which are some very low lying islands, along with extensive sand and coral flats. The land within Khawr al Bighal is subject to inundation during spring tides or NW winds. The island of Abu Zaby is fronted by an extensive detached breakwater.

A conspicuous multi-story building stands on **Ras al Batin** (24°27'N., 54°19'E.), the S extremity of the island. Other conspicuous objects, positioned relative to the building mentioned above, are:

1. A prominent lattice radio mast, showing obstruction lights, with an elevation of 94m, about 1 mile NE.
2. A cylindrical water tower, standing prominently on top of a sandy hillock, about 2 miles ENE.
3. A conspicuous tapered lattice radio mast, painted in red and white stripes and showing obstruction lights, with an elevation of 130m, about 2 miles ENE.
4. A conspicuous silver onion-shaped water tank, with an elevation of 30m, about 4 miles NE.
5. At the power station, a prominent line of numerous silver-colored metal chimneys, about 5 miles NE.
6. A conspicuous control tower standing at the S end of the harbor about 0.5 mile NE of the power station.

It was reported (1997) that many of the above landmarks have become obscured by numerous high-rise apartment and hotel buildings.

Pilotage.—Pilotage is compulsory within the port limits of Abu Zaby (Mina Zayed) for vessels navigating, moving, or shifting berths, as follows:

1. All vessels with an loa of 100m and above.
2. All vessels with an loa of 60m and above carrying hazardous cargo in bulk.
3. All vessels with an loa of 24m and above carrying more than 12 passengers.

Pilotage for Mina Zayed must be requested, as follows:

1. Inbound vessels—Pilotage must be requested from Mina Zayed Port Control 12 hours in advance; the request should include the vessel's ETA and maximum arrival draft. The ETA should be confirmed 3 hours prior to arrival at the pilot boarding position.
2. Outbound vessels or vessels moving within the port area—Pilotage must be requested 12 hours and 3 hours prior to departure.

The pilot for Mina Zayed boards between Fairway Lighted Buoy and Lighted Buoy Nos. Z15/Z16, depending on the vessel's draft.

Pilot boarding arrangements for Abu Zaby (Mina Zayed) will be confirmed with Mina Zayed Port Control on VHF chan-

Courtesy of Abu Dhabi Ports Company

Khalifa Industrial Zone Abu Dhabi—Outer Port Island from NW

Courtesy of Abu Dhabi Ports Company

Khalifa Industrial Zone Abu Dhabi from SE

Courtesy of Abu Dhabi Ports Company

Abu Dhabi—Silos at entrance to Mina Zayed

Courtesy of Abu Dhabi Ports Company

Abu Dhabi—Dhow Harbor (left) and Fishing Harbor (right) from SE

nels 16 and 67.

Pilotage in Musaffah New Port is compulsory within the port limits for vessels navigating, moving, or shifting berths, as follows:

1. All vessels with an loa of 80m and above.
2. All vessels with an loa of 40m and above carrying hazardous cargo in bulk.
3. All vessels with an loa of 24m and above carrying more than 12 passengers.

Pilotage for New Musaffah Channel must be requested, as follows:

1. Inbound vessels—Pilotage must be requested12 hours and 3 hours prior to arrival at the pilot boarding position. The 12-hour message must include the vessel's ETA, maximum draft, and destination within the pilotage area.
2. Outbound vessels—Pilotage must be requested 12 hours and 3 hours prior to departure.

Pilots board, as follows

1. Musaffah Channel—about 1.5 miles N of the head of the outer breakwater.
2. New Musaffah Channel—about 0.6 mile N of New Musaffah Channel Fairway Lighted Buoy.

Pilot boarding arrangements for Musaffah New Port will be confirmed with Musaffah Port Control.

The pilot vessel can be contacted on VHF channels 16 and 67.

Regulations.—Vessels should send an ETA at Fairway Lighted Buoy to the agents or directly to Berth Booking (e-mail: berthbooking@adterminals.ae or facsimile: 971-2-6975 135) 72 hours, 48 hours, and 24 hours in advance through Bahrain (A9M). They should confirm the ETA 6 hours in advance by VHF.

The initial ETA message should contain the following information:

1. Vessel's IMO number.
2. Vessel's ISSC and date of issue.
3. Name of vessel's Ship Security Officer.
4. Name and contact number of Company Security Officer.
5. Last 10 ports of call (include whether ISPS compliant and security level).

Vessels should establish contact with Port Control 2 hours before arrival on VHF channel 11, 16, or 67.

Two trans-shipment areas, to facilitate the transfer of cargo into self-unloading barges, have been established N of Abu Zaby, as follows:

1. Area No. T1 (to discharge cargo from Capesize vessels)—An area bounded by lines joining the following positions:
   a. 24°53'N, 54°18'E.
   b. 24°53'N, 54°22'E.
   c. 24°51'N, 54°22'E.
   d. 24°51'N, 54°18'E.
2. Area No. T2 (to discharge cargo from Panamax vessels)—An area bounded by lines joining the following positions:
   a. 24°45'N, 54°08'E.
   b. 24°45'N, 54°10'E.
   c. 24°43'N, 54°10'E.
   d. 24°43'N, 54°08'E.

It has been reported (2010) that single-hull tankers will be prohibited from calling at petroleum facilities in Abu Zaby (Mina Zayed) after December 31, 2010.

It has been reported (2011) that all vessels over 300 gross tons must have an installed Automatic Identification System on board.

Vessel Traffic Service.—Vessels transiting **Mina Zayed Channel** or **Khawr al Bighal** are required to contact Mina Zayed Port Control on VHF channel 16 or 67 when passing certain reporting points, as follows:

1. Inbound vessels—
   a. Before arrival.
   b. When passing position 24°40.8'N, 54°15.0'E.
   c. When passing Lighted Buoy No. Z23 and Lighted Buoy No. Z24 to enter Mina Zayed Channel.
   d. When leaving Mina Zayed Channel and entering Khawr al Bighal.
2. Outbound vessels—
   a. Before entering Khawr al Bighal from secondary channels.
   b. When leaving Khawr al Bighal and entering Mina Zayed Channel.
   c. When passing position 24°40.8'N, 54°15.0'E.

Vessels transiting **Musaffah Channel (Khawr al Batin)** are required to contact Musaffah Port Control on VHF channel 14 when passing certain reporting points, as follows:

1. Inbound vessels—
   a. When 1 mile distant from Musaffah Channel Fairway Lighted Buoy.
   b. When passing Lighted Buoy No. 1/Lighted Buoy No. 2.
   c. When passing Lighted Buoy No. 21/Lighted Buoy No. 22.
   d. When berthed alongside.
2. Outbound vessels—
   a. Before departing the berth.
   b. When underway having departed the berth.
   c. When passing Lighted Buoy No. 25/Lighted Buoy No. 26.
   d. When departing the channel.
   e. When 1 mile N of Mussafah Channel Fairway Lighted Buoy.

Vessels transiting New Musaffah Channel are required to contact Musaffah Port Control on VHF channel 14 when passing certain reporting points, as follows:

1. Inbound vessels—
   a. Prior to arrival.
   b. Prior to entering the channel.
   c. When passing Lighted Buoy No. M11/Lighted Buoy No. M12.
   d. When passing Lighted Buoy No. M19/Lighted Buoy No. M20.
   e. When passing Lighted Buoy No. M29/Lighted Buoy No. M30.
   f. When passing Lighted Buoy No. M41/Lighted Buoy No. M42.
   g. When passing Lighted Buoy No. M49/Lighted Buoy No. M50.
   h. When passing Lighted Buoy No. M63/Lighted Buoy No. M64.

i. When berthed alongside.
j. When shifting berths—30 minutes prior to shifting berths.
2. Outbound vessels—
a. Before departing the berth.
b. When underway having departed the berth.
c. When passing Lighted Buoy No. M63/Lighted Buoy No. M64.
d. When passing Lighted Buoy No. M49/Lighted Buoy No. M50.
e. When passing Lighted Buoy No. M41/Lighted Buoy No. M42.
f. When passing Lighted Buoy No. M29/Lighted Buoy No. M30.
g. When passing Lighted Buoy No. M19/Lighted Buoy No. M20.
h. When passing Lighted Buoy No. M11/Lighted Buoy No. M12.
i. When clearing the channel.

The following information must be sent when passing the reporting points:
1. Vessel name.
2. Call sign.
3. Position/reporting point.

Vessels using Musaffah New Port must first establish contact with Mina Zayed VTS (call sign: Abu Dhabi Ports) on VHF channel 67 and provide their ETA at the Musaffah pilot boarding position and receive pilot boarding instructions.

Vessels using New Musaffah Channel must contact Musaffah VTS (call sign: Musaffah Port) 1 hour prior to arrival at the pilot boarding position on VHF channel 14, providing the following information:
1. Vessel name and call sign.
2. Last port of call.
3. Length overall.
4. Gross tons.
5. Intended berth at Musaffah New Port.

Contact Information.—Port contact information can be found in the table titled **Abu Zaby (Mina Zayed)/Musaffah—Contact Information**.

Anchorage.—Anchorage may be obtained in the following charted anchorage areas:
1. Mina Zayed Anchorage Area (formerly Anchorage Area Z)—About 5 miles NNW of Abu Dhabi Lighted Buoy, with charted depths of 15.5 to 24.0m.
2. Musaffah Anchorage Area (formerly Anchorage Area M)—Adjoining the W side of Mina Zayed Anchorage Area, with charted depths of 9.4 to 21.5m.
3. Musaffah Lighterage Anchorage Area (formerly Anchorage Area S1)—Adjoining the W side of Mina Zayed Anchorage Area, with charted depths of 22 to 23m.
4. Anchorage Area S2—A circular area with a radius of 1.5 miles centered on position 24°54.2'N, 54°15.1'E.

It is recommended that vessels use plenty of cable as the shamal, which blows in this vicinity between N and NW, can rise suddenly with great force.

Directions.—From a position about 5 miles E of **Sir Bu Nu'yar** (25°15'N., 54°12'E.), steer to pass E of Abu Dhabi Lighted Buoy; then steer S toward **Fairway Lighted Buoy** (24°39'N., 54°14'E.) and follow the buoyed channel.

Caution.—Keep in mind the strong tidal currents within the dredged channel, particularly when negotiating the turn into Mina Zayed.

Submarine pipelines and cables are charted just SW of the channel to Dhow Harbor, and across the S end of the 11m deep secondary channel leading SE from the entrance to Mina Zayed to Umn an Nar.

Caution is necessary when transiting Khawr al Bighal as many additional channel buoys have been added and the original buoys may not reflect the charted information.

Channel buoys may be covered with dust, which prevents quick identification of the buoy numbers; buoy colors may only be discernible when in close proximity to the buoy.

It has been reported (2016) winds and currents may cause the channel buoys to be set into the channel.

An obstruction, with a depth of 3m, has been reported (2011) to lie about 2.5 miles W of the W side of Abu Dhabi Anchorage Area M in position 24°45'21.0'N, 54°05'35.4"E.

15.21 Umm an Nar (Sas an Nakhl) (24°27'N., 54°29'E.) (World Port Index No. 48279)is situated at the SE end of Abu Zaby Island and consists of two petroleum berths, with mooring and breasting dolphins, connected to the shore by a causeway; the berths are located in the North Basin.

A channel, entered through Khawr al Bighal and marked by range lights and lighted buoys, leads to the facility; this channel is 160m wide and dredged to a depth of 11m. Range lights, in line bearing 164°, lead into the North Basin of the port.

Vessels up to 30,000 dwt, with a maximum length of 170m, a maximum draft of 9.2m, and a maximum beam of 26.5m, can be accommodated at Berth No. 1; a maximum length of 158m can be accommodated at Berth No. 2. As the berths are approached through Khawr al Bighal, see the Abu Zaby port description in paragraph 15.20 for regulations and approach information.

Abu Zaby (Mina Zayed)/Musaffah—Contact Information			
	Mina Zayed Port Control	**Musaffah Port Control**	**Harbormaster**
VHF	VHF channels 11, 16, and 67	VHF channel 14	—
Call sign	Abu Dhabi Ports	Musaffah Port Control	—
Telephone	971-2-6975377 (24 hour direct line)	971-2-5552423	971-2-6730604 (direct line)
	971-2-6975305 (24 hour switchboard)	971-2-5109394	971-2-6975375 (switchboard)
Facsimile	971-2-6975156	971-2-5109395	—

Abu Zaby (Mina Zayed)/Musaffah—Contact Information			
	Mina Zayed Port Control	Musaffah Port Control	Harbormaster
E-mail	marine@adterminals.ae	musaffah.vts@adpc.ae	—

Pilotage, provided from Abu Zaby, is available only during daylight hours.

For reporting information, see paragraph 15.20.

Vessels should maintain a continuous listening watch on VHF channels 9 and 67.

On arrival at the pilot station, the following information should be passed, via the agent, to the terminal operators:

1. Vessel's ETA at the turning basin.
2. Arrival draft.
3. Estimated departure draft.
4. Quantity and type of cargo.
5. Master's name.
6. Agent's name.

The terminal can be contacted, as follows:

1. Call sign: Sas an-Nakhl Marine
2. VHF: VHF channel 9
3. Telephone: 971-2-6026466
4. Facsimile: 971-2-5582687

Great Pearl Bank—Off-lying Oil Fields

15.22 Great Pearl Bank (25°18'N., 54°53'E.), the N limit of which is in depths of 35 to 40m, fills the great bight in the S part of the Persian Gulf. The E limit of this extensive bank is NW of Ash Shariqah; its N boundary trends in a general W direction to Jazirat Halul, passing about 20 miles N of the island Sir Bu Nu'ay. From Jazirat Halul, it trends NW to a position about 35 miles NNE of Ras Rakan. Most of the known pearl banks are situated S and SW of this line.

Depths on Great Pearl Bank, while irregular, average 18 to 27m, but there are depths of 37 to 46m in places; many shallow knolls, with depths of 5.5 to 16.5m, lie on the bank.

Depths change suddenly by as much as about 4 to 6m in places. Extensive reefs, with depths of 0.9 to 5.5m, are found within 45 miles of the coast, some having channels or open water inside them.

The reefs are stony or of broken coral and they show up well, except on cloudy days or when the sun is ahead. There are heavy overfalls in places, especially about 35 miles NW of Sir Bu Nu'ay. Many islands, some close to the coast and others far offshore, lie on the banks. Some are high, many are barren, and most have a low projecting sandy point at their SE end.

With the exception of Jazirat Dalma, few have permanent inhabitants, though they are frequented by pearl boats in summer and by fishermen from the coast in winter.

Pilots may be obtained by prior arrangement from Mina Saqr, Dubayy, or Abu Zaby.

Caution.—Extreme care must be taken when a vessel is on Great Pearl Bank, for the tidal currents are strong and uncertain, and parts of the bank have not been completely surveyed. Once within the 30m depth contour, particular caution is necessary, and navigation after dark is not advisable, except along the recognized shipping routes, which are marked by lights and buoys.

Elsewhere, the safety of a vessel will largely depend on a vigilant lookout being maintained from aloft, as soundings provide little or no warning of the proximity of a reef or island.

15.23 Sir Bu Nu'ay (Sir Abu Nu'ayr) (25°15'N., 54°12'E.), an uninhabited island lying about 44 miles N of Abu Zaby, consists mainly of small volcanic hills, except that its SE extremity is a very low, sandy point. The summit is a table-topped peak. Reefs encircle the island as far as 0.5 mile offshore. Boat landings can be made, on the SE side of the island during the day, with the summit bearing 285°.

A fishing harbor, consisting of a basin dredged to a depth of 3.5m and two breakwaters, has been constructed at the SE end of the island. A light is shown from a post on each breakwater head.

Anchorage can be taken anywhere around the island but preferably inshore of the SE spit.

Caution.—An area lying about 13.5 miles S of Sir Bu Nu'ayr containing unspecified and uncharted hazards to navigation is bounded by lines joining the following positions:

a. 24°59'15.6"N, 54°12'44.4"E.
b. 24°59'28.8"N, 54°12'42.6"E.
c. 24°59'22.4"N, 54°12'50.4"E.
d. 24°59'22.4"N, 54°12'36.6"E.

It has been reported (2016) a crescent-shaped man-made island, about 0.5 mile long and 0.5 mile wide, has been built within this area in approximate position 24°59'23.4"N, 54°12'46.8"E. The island has been covered with solar panels and has a tower, with a height of about 60m, located on it.

Fateh Oil Terminal (Fath Oil Terminal) (25°35'N., 54°25'E.)

World Port Index No. 48265

15.24 Fateh Oil Terminal, an offshore loading terminal and oil field, extends between 13 and 24 miles N of Sir Bu Nu'ay.

Winds—Weather.—The prevailing winds are from the NW.

Tides—Currents.—The range of tides is 1.5m at springs and 0.9m at neaps. Flood currents set SW and ebb currents set NE. The velocity of the tidal current is 0.5 to 1.5 knots.

Depths—Limitations.—SPM No. 1 is located about 3 miles ESE of the center of the production area, in a depth of 44.2m. SPM No. 2 is located about 2 miles SW of the center of the production area, in a depth of 45.7m.

Berth limitations are given in the accompanying table titled **Fateh Oil Terminal—Berthing Limitations**.

Vessels up to 350,000 dwt may be accepted from May until October with approval of the terminal operators.

Aspect.—Within the oil field, there are numerous well heads and associated structures, many of which show lights and sound fog signals, together with flares, unlighted obstructions, submarine pipelines, and oil storage tanks.

A central pumping platform, lighted and equipped with a fog

horn and VHF radio, contains offices for the Mooring Master. A submerged oil pipeline from the oil field is landed close NE of Dubayy, where services and facilities are available for Fath.

In the N part of the oil field is a production platform with a flare, a moored storage tanker, and three submerged oil storage tanks surmounted by a yellow cylindrical tower. Two single point buoy moorings provide mooring berths for tankers loading crude oil.

Fateh Oil Terminal—Berthing Limitations			
SPM	Vessel size	Maximum vessel	
		Length	Draft
No. 1	70,000-300,000 dwt	365.8m	30.5m
No. 3	50,000-300,000 dwt	365.8m	30.5m

Pilotage.—Pilotage is compulsory within the area of the Marine Terminal, indicated by a dashed line on the chart. Pilots are mooring masters, who usually board ships in the anchorage area or as arranged after radio contact with the terminal. Tugs and launches may assist in berthing.

Regulations.—The terminal operates 24 hours. Ships berth both day and night.

The ship's ETA should be sent not later than 72 hours in advance and confirmed 24 hours and 12 hours in advance. The ETA message should include the following information:

1. Vessel's name.
2. Quantity of cargo required.
3. Maximum loading rate.
4. Deballasting time.
5. Size of hose connections.

When the ship is within 60 miles of the terminal, communications should be established on VHF channel 16.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 971-4-3432222
3. Facsimile: 971-4-3012200
4. Telex: 893-45423 DPC EM
   893-45557 DPC EM
5. E-mail: port-captain.fateh@dubaipetroleum.ae

Anchorage.—Tankers awaiting a berth at the loading buoys can anchor in the designated circular area, which has a radius of 0.25 mile centered on position 25°36.5'N, 54°31.5'E. There are depths of 40 to 46m at the anchorage, which is fully exposed to the weather. Tankers should not anchor within the limits of the Fateh Oil Field, best seen on the chart. Ships other than those using the terminal are advised not to navigate within the oil field limits.

Caution.—SW Fateh Oil Feld (25°31'N., 54°19'E.) lies about 8.5 miles SW of Fateh Oil Terminal SBM No. 2; oil and gas pipelines connect the oil fields. **Falah Oil Field** (25°36'N., 54°12'E.), lying about 8 miles NW of SW Fateh Oil Filed, is connected to it by oil and gas pipelines.

A dangerous wreck, best seen on the chart, lies about 9.3 miles SSE of the Fateh Oil Terminal.

15.25 Az Zukum Oil Field (Zaqqum Oil Field) (24°51'N., 53°39'E.), the limits of which are shown on the chart, encompasses an extensive shoal area known as Ruqq az Zukum (Ruqq az Zaqqum). The shoal area lies on a pearl bank on which there is a least depth of 4.2m. The bank is not marked by discoloration and soundings give little guide on approaching it.

Numerous well heads, oil field structures, uncharted obstructions, and other hazards to navigation exist within and around the shoal, and are best seen on the chart. A Restricted Area whose limits are best seen on the chart encompasses the area. Only authorized vessels are permitted entry.

Obstructions, with depths of 9.7 to 1.3m, have been reported (2011) to lie up to 1.5 miles WSW of a line joining the positions:

a. 24°55'59.4"N, 53°57'57.0"E.
b. 24°53'10.8"N, 53°58'15.6"E.

More obstructions, with depths of 0.7m and 1.2m, have been reported (2011) to lie about 6.75 and 7.5 miles, respectively, E of position 24°53'10.8"N, 53°58'15.6"E.

Mubarraz Oil Terminal (24°26'N., 53°31'E.)

World Port Index No. 48263

15.26 Mubarraz Oil Terminal is approached by making **Mubarraz Approach Lighted Buoy** (24°57'N., 53°18.7'E.) and then steering to pass close E of **Mubarraz Entry Lighted Buoy** (24°52.5'N., 53°18.7'E.).

Al Mubarraz-1 Oil Field, Al Mubarraz-2 Oil Field, and Al Mubarraz-3 Oil Field, each containing a number of oil well head structures, some lighted, are located in the E approach to the terminal and are best seen on the chart.

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Tides—Currents.—The tidal range is about 1.8m. The flood tidal current sets SE; the ebb tidal current sets NW. The maximum velocity is about 2 knots.

Depths—Limitations.—A channel, with a least depth of 14.3m and marked by lighted buoys, leads W and S of Ruqq az Zukum, through the oil field, to an offshore oil loading terminal consisting of a single point mooring buoy, moored in a depth of 15.5m, about 9 miles ESE of **Halat al Mubarraz** (24°28'N., 53°22'E.). Vessels up to 235,000 dwt, with a maximum draft of 13.5m, can be accommodated.

A submarine pipeline is laid from the oil field to Halat al Mubarraz, where storage tanks are located. The tanks are reported to be good radar targets at a distance of 11 miles.

Pilotage.—Pilotage is compulsory. Pilots board, as follows:

1. Near Lighted Buoy No. 5.
2. For tankers waiting in the anchorage area—2.5 miles off Lighted Buoy No. 7.

Regulations.—Vessels should send their ETA 7 days, 72 hours, 48 hours, and 24 hours in advance by e-mail to Das Port Control (pctas@adma.ae). A confirmation of the ETA should be made a few hours before arrival at Mubarraz Approach Lighted Buoy, as follows:

1. Mubarraz Terminal on VHF channel 17.
2. Das Port Control on VHF channel 12 or 16.

Vessels should advise their time of anchoring via VHF and

maintain a continuous listening watch on VHF channels 12, 16, and 17 until boarded by the pilot, loading master, and company representative.

Speed should be reduced to a maximum of 8 knots within 1 mile of Lighted Buoy No. 10.

Vessels will be refused berthing if they arrive with insufficient clean ballast aboard as to allow for safe maneuvering. The terminal has no facilities for the reception of dirty ballast.

The national flag of the UAE is required to be displayed while the ship is at the terminal.

It has been reported (2009) that vessels without an installed and operational AIS will not be permitted to enter the terminal.

Contact Information.—The terminal can be contacted, as follows:

1. Call sign: Mubarraz Terminal
2. VHF: VHF channel 17
3. Telephone: 971-2-8881072
4. Facsimile: 971-2-8881025

Anchorage.—Tankers waiting to berth should anchor within a circular anchorage area, 1 mile in diameter, centered about 2 miles ENE of the terminal. There is a least depth of 15.5m at the anchorage. The bottom is coral with a covering of sand, poor holding ground. At least 6 shots of chain should be played out. Dry cargo vessels will anchor only as directed by Port Control via VHF radio.

The area within 1.5 miles of the Central Facilities Platform is prohibited to navigation and anchorage. No ships can anchor within 1.5 miles of the submarine pipelines.

Coast of United Arab Emirates—Abu Zaby to Jabal az Zannah

15.27 An IMO-adopted Traffic Separation Scheme traversing several oil fields has been established in the waters between **Jazirat az Zarqa** (24°53'N., 53°04'E.) and Jazirat Das. Caution is necessary when using this scheme as a dangerous wreck, with an unsurveyed depth of 16m, lies in the inbound traffic lane about 6.5 miles W of Zaqqun East Lighted Buoy and is best seen on the chart.

The approach channels for several oil berths terminate within the immediate proximity of the TSS, which also passes between Zirkuh Island and the Petroleum Loading Terminal. Vessels should navigate with particular caution while within the scheme, or near either terminus.

The coast W of Abu Zaby is low, stony desert with few, if any, distinctive features. It is entirely barren and desolate.

There are no villages, houses, or permanent residents. Reefs, on which are many low islands, lie as far as 30 miles off this coast. Numerous channels lead through the reefs and around the uninhabited islands. Local fishermen frequent the channels, which vary in their depths and require local knowledge.

The Umn Ad Dalkh Oil Field, best seen on the chart, is marked by lighted buoys. The field is located close SW of the Abu Zaby dredged entrance channel.

Bazm is the collective name given to the islands lying on **Fasht al Bazm** (24°17'N., 53°23'E.); the principal reef of **Jabal Ghurayn** (24°09'N., 53°08'E.) is a conspicuous, conical hill which appears white against a dark background of low hills.

The coast W from Jabal Ghurayn consists of low ranges of volcanic hills as far as **Jabal az Zannah** (24°10'N., 53°36'E.), a conspicuous peak.

15.28 Ras al Qila (24°09'N., 52°59'E.) is a conspicuous promontory on a low sandy shore fronted by coral reefs extending well offshore and backed by large areas of sand flats which partly cover at HW.

Sir Bani Yas (24°20'N., 52°36'E.) is an island rising to volcanic hills, about 148m, high in its central part.

Qarn Zaqiq (24°19'N., 52°36'E.), the most conspicuous peak of Sir Bani Yas, is conical and lighter in color than the lower peaks.

Mount Stewart (24°19'N., 52°36'E.) is a black peak rising 0.2 mile WSW of Qarn Zaqiq. Sydney Hill, about 1 mile N of Mount Stewart, is very conspicuous when seen from W.

Jabal Buwayridah (24°18'N., 52°38'E.) is the high E extremity of the island. The terrain sloping to a low, sandy plain from hills on the E and W sides of the island terminates at **Ras Khudeiriyah** (24°16'N., 52°36'E.), the S extremity of the island.

A channel, dredged to a depth of 8.5m and marked by lighted buoys, lies S of Ras Khuderiyah and is best seen on the chart.

Khawr Dasah (24°16'N., 52°37'E.), a small bay, provides excellent shelter for small craft. A beacon stands near the E entrance point of the bay.

Caution.—Shallower depths than charted have been reported SW of Sir Bani Yas. An unburied pipeline, which reduces charted depths by 2m, extends S from Ras Khudeiriyah.

There are many rocks, reefs, and shoals lying in the approaches to Sir Bani Yas. Only those dangers in the vicinity of the approach channels leading to the anchorages off Sir Bani Yas and Jabal az Zannah will be described.

15.29 Ghashshah (Jazirat Ghasha) (24°25'N., 52°39'E.) is a low flat rocky islet lying on extensive partly-drying rocky shoals.

Ayayat Ghasha, a partly-drying coral reef, lies about 1 mile SSE of Ghashshah. The wreck of a stranded tug on the reef 0.4 mile N of Ghashshah is conspicuous.

Najwat Ghasha (24°25'N., 52°36'E.), with a least depth of 7.3m, is a shoal usually marked by overfalls. The SW side of this shoal is marked by a lighted buoy.

Ghasha Lighted Buoy (24°26'N., 52°35'E.) is moored close SW of a 14.6m foul patch. It marks the pilot station area and the entrance of the channel leading to the anchorages.

The Ridge (24°24'N., 52°38'E.), a steep-to rocky spit with a least depth of 5.2m, is usually marked by overfalls. A lighted buoy marks the SW end of the ridge. An additional buoy marks the SW end of a 6.7m shoal lying 0.5 mile NW of The Ridge.

Bu San'ia (24°24'N., 52°36'E.), a shoal with depths of less than 4.3m, lies 2 miles N of Sir Bani Yas. The channel between the island and shoal is 0.5 mile wide, with a least depth of 6.4m.

Jazirat Yabr (24°19'N., 52°43'E.) is a low, sandy islet lying on a reef which extends 1.5 miles N from the islet. Rocky shoals extend W toward the channel.

Price Shoal (24°17'N., 52°42'E.) has a depth of 1.2m. Two patches, with depths of 1.8 and 3.6m, lie 0.5 mile and 0.2 mile NW, respectively, of the 1.2m patch. The W extremity is marked by a light with racon.

15.30 Halat al Allak (24°14'N., 52°41'E.), a very low sandy islet, is marked 0.5 mile SE by a lighted white tower with red bands. Lighted buoys mark the E, W, N, and NW approaches to the islet.

Long Reef (24°14'N., 52°37'E.), on which there are numerous coral heads, and an extensive shoal with depths of less than 1.8m, lie between the S end of Sir Bani Yas and the N end of Jabal az Zannah.

Anchorage.—Anchorage can be taken, in 14.6m, good holding ground of clay, about 0.4 mile off the reef fringing the SE side of Sir Bani Yas, with Jabal Buwayridah bearing 008° and Ras al Buwaytir bearing 255°.

Anchorage can also be taken, in 16.5m, mud and sand, with Qarn al Khabta in range 339° with Ras al Buwaitir, and with Ras al Khudeiriyah bearing 259°.

Vessels should contact the local authorities before utilizing these anchorages.

15.31 Zirkuh (Jazirat Zarakkuh) (Jazirat az Zarqa) (24°53'N., 53°04'E.), a barren island with a prominent peak, lies about 40 miles NE of Sir Bani Yas. A light and a radio tower stand 0.3 mile N and 0.2 mile NE, respectively, of the island's 160m high summit. Two flares lie about 0.3 mile SSE of the summit.

The service harbor for Zirkuh Petroleum Port (see paragraph 15.32) is located on the E side of the island. It consists of a causeway extending about 0.5 mile SE of the E extremity of the island. At the head of the causeway is a 110m long quay, with alongside depths of 2 to 3m.

A beacon is shown from a seawater intake projecting from the shore about 0.3 mile N of the root of the causeway. The island's S end is fringed by reefs, while a sandspit also extends from it.

Two small craft piers also extend from the island's S side, but are reported to be unusable. A restricted area lies W of the island and may best be seen on the chart.

A charted anchorage for small craft lies SE of the island, sheltered from the shamal, but is affected by any swell rolling in around the island. Zirku Marine should be consulted before using this anchorage.

Caution.—Local authorities should be consulted for the latest information on depths and approach routes before planning a voyage here, as less water has been reported in the vicinity of the jetty.

Zirkuh Petroleum Port (Az Zarqa Petroleum Port) (25°01'N., 53°00'E.)

World Port Index No. 48266

15.32 Zirkuh Petroleum Port, the limits of which are best seen on the chart, consists of two Single Point Moorings, contained within a restricted area, located about 7 miles NNW of Zirkuh Island.

Winds—Weather.—See paragraph 15.1 for further information. Prevailing winds are from the NW. Strong winds from this direction can blow for up to 3 days, raising waves of up to 4.5m.

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Tides—Currents.—The maximum tidal range at the port is reported to be about 1.5m. The tidal currents at the SPMs are semidiurnal, but are considerably influenced by strong winds, especially the shamal. Roughly, the flood sets SW and the ebb NE, but the turn of the tide is very slow, during which time the current direction is variable. Current rates regularly reach 1 knot.

Depths—Limitations.—Each SPM accommodates vessels from 30,000 to 350,000 dwt, with a maximum draft of 21m.

Mooring operations are conducted in winds up to 25 knots, or seas up to 1.5m.

Aspect.—Except for the small craft jetties on the S side of Zirkuh, all of the objects mentioned on the island may be of use when navigating in the vicinity. Additionally, a lighted platform, located about 4 miles WNW of the southernmost SPM and centered within a Restricted Area, may provide a good navigational mark.

Pilotage.—Pilotage is compulsory for all ships navigating within the port limits. The pilot boards, as follows:

1. Vessels arriving from S—Zaqqum Traffic Separation Scheme (25°00.0'N, 53°02.5'E.).
2. Vessels arriving from N—Das Deepwater Channel (25°10.0'N, 52°56.0'E.).

The pilots monitor VHF channel 15.

Regulations.—Vessels sailing to Zirkuh Petroleum Port should send their ETA 72 hours in advance, via e-mail, to the harbormaster. The ETA should be confirmed or amended 48 hours, 24 hours, and 12 hours prior to arrival.

Vessels should confirm their final ETA with Port Control 4 hours in advance on VHF channel 12 or 16.

Vessels should advise Port Control of their time of anchoring, using local time, on VHF channel 12 or 16.

Tankers with a draft of greater that 16m are berthed during daylight hours only.

Navigation/movement is permitted within the port limits only if prior permission has been approved by the Port Authority.

All vessels at anchor shall keep a listening watch on VHF channels 12 and 16.

A restricted area, with a radius of 1 mile, exists around each SPM and around the platform from which a light is shown.

Vessels leaving the anchorage areas must first obtain permission from Port Control, giving the following information:

1. Intended time of heaving the anchor.
2. Reason for departure.
3. Time of departure.

Contact Information.—See the table titled **Zirkuh Petroleum Port—Contact Information.**

Zirkuh Petroleum Port—Contact Information

	Port Control	Harbormaster
Call sign	Das Port Control	—
VHF	VHF channels 12 and 16	—
Telephone	971-2-6028996	971-2-6028900
	971-2-8733029 (emergencies)	971-2-6028980

Zirkuh Petroleum Port—Contact Information		
	Port Control	Harbormaster
Facsimile	—	971-2-6028950
E-mail	pctas@adma.ae	poa1das@adma.ae

Anchorage.—Tankers East Anchorage, for tankers waiting to berth at the terminal, is situated 5 miles NE of Zirkuh as shown on the chart.

Tankers North Anchorage, also charted, for tankers delayed from sailing after loading, is situated 3.5 miles E of the terminal.

Directions.—Vessels may approach the port limits as safe navigation permits, and from any direction provided Zirku Marine is informed of the vessel's intended route.

Navigation within the vicinity of the port, and within the port limits is hampered by numerous hazards that are both above and below-water, but most particularly by the Traffic Separation Scheme which separates the SPMs from Zirkuh Island.

Special regulations are in force for vessels navigating within the port limits, and the segment of the Traffic Separation Scheme falling within the port limits, which are given below.

It should be noted that vessels are allowed to approach the terminal facilities from either Traffic Lane, but extreme caution should be exercised by all vessels doing so.

A channel for loaded tankers leaving the terminal with a maximum draft of 21m leads N for about 12 miles. It is marked by Lighted Buoy No. 1 to Lighted Buoy No. 6. The maximum speed allowed in this channel is 8 knots.

From approximate position 25°14'N, 52°59'E, this channel may be used by arriving vessels as the channel passes E of Jazirat Das, and W of several shoal patches.

Caution.—If using Tankers North Anchorage, care should be taken to avoid the charted wreck, with a swept depth of 23m, lying on the W limits of the anchorage area, 2.5 miles E of the terminal.

Less water than the charted depth has been reported 1.6 miles SW of the lighted platform.

Anchorage is prohibited outside of the charted anchorage areas without the permission of the Port Authority or within 0.5 mile of any submarine pipeline. The sea bed in the terminal area is mostly rock, covered by loose sand, with some coral patches. The holding ground is poor.

15.33 Qarnayn (Jazirat Qarnayn) (24°56'N., 52°51'E.) has a low S part, but the N part of the island has a mast, several tanks, and a light.

Landing can be made at a sandy beach on the W side of the S extremity near the airfield.

Jazirat Arzanah (24°48'N., 52°33'E.), high at its N end, but a low plain S, is fringed by a reef except at the S end, where landing can be made.

Jazirat Arzanah lies completely within a restricted area, the limits of which define the limits of Port Arzanah and are shown on the chart.

The oil terminal was decommissioned in 1998 and is no longer in use.

Arzanah Oil Field extends about 10 miles off the S extremity of the island. Both the oil field and the island are surrounded by a restricted area. Ships should navigate with caution in this area.

Creagh Shoal (24°42'N., 52°44'E.), with a least depth of 7.3m, is marked by a lighted buoy at the N end of an atoll-like formation of irregular depths. The whole area is at least 4 miles square.

An obstruction, marked by a lighted buoy, rising 2.4m above sea level, exists 1.5 miles SE of the shoal. An obstruction, with an unsurveyed clearance depth of 7m, lies near the N end of Creagh Shoal, 12.5 miles ESE of Jazirat Arzanah.

Port of Jabal az Zannah/Ruways (Jabal Dhanna/Ruways) (24°12'N., 52°42'E.)

World Port Index No. 48282

15.34 The Port of Jabal az Zannah/Ruways, standing at the S extremity of the Persian Gulf in a bight SE of Sir Bani Yas, handles bulk crude and refined petroleum. The approach channel to the port, leading SE of Sir Bani Yas, passes numerous dangers, both above and below-water, which are best seen on the chart.

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Winds—Weather.—See paragraph 15.1 for further information. The shamal may blow for 3 days, raising a sea up to 4.5m at the outer anchorage, and up to 2m at the Jabal az Zannah berths.

Rainfall is usually associated with thunderstorms which occur from November to May. Rainfall is rare during the remaining months, while in some years there is none at all.

Fog can occur during any month, but is most frequent in winter. Normally it clears by 1000, drifting seaward towards Sir Bani Yas. A heavy dew may be experienced throughout the year.

Tides—Currents.—The spring rise at the docks is reported to be 2m, while the average neap rise is reported to be 1m. Meteorological conditions may reduce the height of tide by up to 0.3m.

Tidal currents in the channel NE of Sir Bani Yas have been reported to reach 1.7 knots. Currents at the berths seldom exceed 0.4 knot.

Depths—Limitations.—The seaward approach route shows a least charted depth of 15.2m on the trackline, about 20 miles NNE of Sir Bani Yas. The inner deep-water route shows a least charted depth of 14m. The maximum draft should not exceed 14m plus the height of tide minus the underkeel clearance.

Jabal az Zannah Oil Terminal, three SBM tanker-loading berths best on the chart, lies about 3 miles offshore NE of Jabal az Zannah. Lights equipped with a fog horn are shown from each SBM. Vessels of 100,000 to 450,000 dwt, with lengths from 250m to 377m, can be accommodated. Available depths at the berths range from 15.5m to 16.7m. SPM 2 and SPM 4 can accommodate a maximum draft of 14.3m, while SPM 3 can accommodate a maximum draft of 13.0m. Vessels are cautioned that sea bed installations may reduce the depths at the loading berths by up to 2.5m.

The TRRW Jetty (Western Jetty) is located SE of Jabal az Zannah Oil Terminal and extends about 2.25 miles NNE from the shore. An outer arm, extending NW, will have three alongside berths (designated G, H, and J) along its seaward face.

The Carbon Black Export Jetty lies close E of TRRW Jetty (Western Jetty) and extends about 0.6 mile NNE. The berth will be approached through a 1.5-mike long dredged channel. A turning circle will lie close NNE of the head of the jetty.

The TRRE Jetty (Liquid Products Jetty) is located at the end of a 3,000m long trestle jetty. Three berths are located on the outer face of the jetty head. Berthing limitations are given in the accompanying table titled **TRRE Jetty (Liquid Products Jetty)—Berth Limitations**.

TRRE Jetty (Liquid Products Jetty)—Berth Limitations		
Berth B	Minimum length	118m
	Maximum length	280m
	Minimum size	9,100 dwt
	Maximum size	104,000 dwt
	Depth alongside	18.5m
Berth C	Minimum length	180m
	Maximum length	295m
	Minimum size	26,000 dwt
	Maximum size	130,000 dwt
	Depth alongside	18.8m
Berth E	Minimum length	180m
	Maximum length	360m
	Minimum beam	22.4m
	Maximum beam	57.5m
	Minimum draft	9.5m
	Maximum draft	17.0m *
	Minimum size	20,000 dwt
	Maximum size	333,000 dwt **
	Depth alongside	19.6m
* Partially loaded.		
** Partially loaded to 221,000 dwt.		

The Coastal Tanker Jetty extends WNW from a position about midway along the TRRE Jetty (Liquid Products Jetty). It provides four tanker berths, with alongside depths of 8.7 to 9.4m. Vessels from 2,600 to 9,100 dwt, with a length of between 70 and 118m, can be accommodated.

GASCO Jetty (LNG Jetty), located about 0.3 mile SE of Liquid Products Jetty, offers an alongside depth of 15m to vessels loading LNG; vessels up to 125,000m^3, with a maximum loaded draft of 14.3m, can be accommodated.

The Bulk Cargo Terminal (FERTIL) lies about 0.9 mile SE of GASCO Jetty. Bulk and break bulk fertilizer is handled on the E side of the pier. The berthing area is 512m long and can accommodate vessels 7,500 to 30,000 dwt, with a maximum length of 180m and a maximum draft of 11m. Three mooring dolphins at the N end of the pier are used by vessels loading anhydrous ammonia. The approach to the berth and the turning basin E of it were both dredged (2016) to a depth of 14.5m.

The Sulfur Jetty, constructed E of the Bulk Cargo Terminal, has 350m of berthing space extending to the SE. Vessels up to 25,000 dwt, with a maximum length of 220m, a maximum draft of 11m, and a maximum beam of 22m, can be accommodated.

Construction Wharf (Borouge Jetty), situated about 1 miles SE of the Sulfur Jetty, lies in a small basin protected by a breakwater.

The Borouge Polymers Company Quay, at the S end of Borouge Channel close SE of Construction Wharf, is 276m long, with a dredged depth of 9.5m alongside. A ro-ro ramp is located at the W end of the quay. Vessels up to 12,000 dwt, with a maximum length of 150m, a maximum beam of 23m, and a maximum draft of 9.0m, can be accommodated.

Barouge Channel, the approach channel for both Construction Wharf and the Borouge Polymers Company Quay, is marked by lighted buoys and has been dredged (2014) to 13.5m; a turning basin, which has a diameter of 360m, has been dredged (2014) to a depth of 13.5m.

The GASCO Jetty (GASCO Sulphur Handling Terminal 2), located about 1.5 miles E of Construction Wharf, has a berthing length of 500m and handles sulphur. The jetty is approached through a channel, marked by lighted buoys, which has been dredged (2013) to a depth of 15.9m.

Cargo and ro-ro vessels, with a draft over 4.2m, anchor out to discharge cargo.

The Port of Jabal az Zannah/Ruways requests that vessels maintain the following underkeel clearances while within the port limits:

1. For vessels up to 100,000 dwt—0.9m.
2. For vessels between 100,000 dwt and 250,000 dwt—1.2m.
3. For vessels between 250,000 dwt and 350,000 dwt—1.5m.
4. For vessels of over 350,000 dwt—1.8m.

Keeping in mind the clearances listed above, vessels may experience delays in sailing due to tidal or meteorological reduction in the water level of the port as follows:

1. For a draft of 13.4m—no delays.
2. For a draft of 13.7m—the vessel will rarely have to wait for a tide.
3. For a draft of 14m—the vessel will usually have to wait for a tide.
4. For a draft of 14.3m—the vessel will always have to wait for a tide.
5. For a draft of 14.6m—the vessel will occasionally be delayed several days.
6. For a draft of 14.9m—the vessel can expect longer delays, and will need to ascertain predicted tidal ranges.

Aspect.—Jabal az Zannah is located about 6 miles S of Sir Bani Yas. The peak rises to a height of 115m and is surrounded by smaller peaks interspersed with deep ravines. Radio masts stand close SSW of the summit, while oil tanks stand about 0.5 mile E of the same peak.

Pilotage.—Pilotage by mooring/loading master is compulsory for all vessels and is available 24 hours. The pilot boards in the Outer Anchorage Area, 1 mile W of Ghasha Lighted Buoy.

The pilots (call sign: Ruwais Pilots) can be contacted on

VHF channels 9 and 16.

Regulations.—Vessels should send their ETA 72 hours in advance, via e-mail, to the harbormaster. The ETA should be confirmed or amended 48 hours, 24 hours, and 12 hours prior to arrival.

Vessels should confirm their final ETA with Port Control 4 hours in advance on VHF channel 9 or 16.

Vessels should advise Port Control of their time of anchoring, using local time, and their anchoring position (given as a range and bearing from Ghasha Lighted Buoy) on VHF channel 9 or 16.

It has been reported (2009) that vessels must submit a Specific Health Declaration Form with the 72-hour pre-arrival message if there have been any on board illnesses with flu-like symptoms in the past 7 days. In cases where such symptoms are reported, the port authorities will request further information.

Vessels should maintain a continuous listening watch on VHF channels 9 and 16.

Several restricted areas exist within the area of the port and are best seen on the chart. No vessel may enter these areas, or pass within 0.2 mile of any vessel loading or discharging petroleum products without permission. Vessels shall not immobilize their main engines while at a cargo berth, but may do so for repairs with the permission of Port Control while at an assigned anchorage berth.

Pollution regulations are in force for the port; local authorities should be consulted for details. Vessels should fly the United Arab Emirates flag from sunrise to sunset.

It has been reported (2009) that vessels without an installed and operational AIS will not be permitted to enter the port.

Vessels leaving the anchorage areas must first obtain permission from Port Control, giving the following information:

1. Intended time of heaving the anchor.
2. Reason for departure.
3. Time of departure.

Vessel Traffic Service.—A Vessel Traffic Information Service (VTIS) is being operated (2015) on a trial basis from Ruways, with an auxiliary station on Jazirat Das. The VTIS operates only as an information service, tracks the passage of all vessels within the VTIS area, and maintains records of theses tracks.

The VTIS stations can be contacted using the information listed in the table titled **VTIS Contact Information**.

Contact Information.—Port contact information can be found in the table titled **Jabal az Zannah/Ruwais—Contact Information**.

Anchorage.—Vessels should not anchor within 2 miles of Ghasha Lighted Buoy.

Vessels working explosives moor in a charted anchorage area located about 4 miles NNE of the Liquid Products Jetty. The anchorage area shows charted depths of 10.3 to 16.8m.

VTIS Contact Information	
Ruwais	
VHF	VHF channels 9, 16, and 21
Telephone	971-2-6021606
	971-2-6021707
Facsimile	971-2-6021600
E-mail	vtisrws@adnoc.ae
Jazirat Das	
VHF	VHF channels 12, 16, and 23
Telephone	971-2-6028998
	971-2-6028999
Facsimile	971-2-6028950
E-mail	vtisdas@adnoc.ae

Jabal az Zannah/Ruwais—Contact Information		
	Port Control	**Harbormaster**
Call sign	Ruwais Port Control	—
VHF	VHF channels 9 and 16	—
Telephone	971-2-6021666 971-2-6021777	971-2-6021717 971-2-6021771 971-2-6021721
Facsimile	971-2-6021600	971-2-6021700
E-mail	ruwaispc@adnoc.com	pparuwais@adnoc.com

General anchorage off the port facilities is available at 20 berths spread throughout the port area, and are best seen on the chart. The anchorage berths are lettered A through T and are assigned by Port Control. The holding ground is reported as good, composed of clay and silt. Anchorage Berth A through Anchorage Berth K are holding anchorages. Anchorage Berth N through Anchorage Berth T are for Ruways cargo and refinery traffic.

Directions.—The deep-draft approach to the port passes N and W of Creagh Shoal Lighted Buoy, W of Dalma Lighted Buoy, and N of Sir Bani Yas; it may best be seen on the chart. Vessels of moderate draft may leave the recommended track after clearing Creagh Shoal, steering a course directly for the Outer Anchorage Area. This route has a least depth of 12.8m, but should be used with the greatest caution.

The recommended tracks shown on the charts E of Dalma Lighted Buoy are intended for local traffic of light draft, and should not be used by ocean-going vessels approaching the port.

A Deep-Water Route for vessels departing the port lies E of

Sir Bani Yas and may best be seen on the chart.

Caution.—An obstruction, best seen on the chart, has been reported (2007) on the recommended track on the W side of Creagh Shoal.

Dredging is in progress (2016) in the main approach channels to Jabal az Zannah/Ruwais, as follows:

1. Ruwais Channel (previously designated Ruwais Main Channel or Ruwais DW Route)—Being widened to 300m and dredged to 15m along the following positions:
   a. 24°24'28.8"N, 52°36'50.4"E.
   b. 24°22'55.8"N, 52°39'01.2"E.
   c. 24°19'58.8"N, 52°42'07.2"E.
   d. 24°17'51.6"N, 52°41'09.0"E.
2. The dredging work in YAS Channel (previously designated Sir Bani Yas Channel (Stewart) Channel), which consisted of widening the channel to 300m and dredging to a depth of 15m, has been completed. The channel is fully open to navigation.
3. North East Approach Channel—Being widened to 500m and dredged to 15m along the following positions:
   a. 24°35'16.2"N, 52°33'00.6"E.
   b. 24°33'27.0"N, 52°30'48.0"E.
   c. 24°31'00.0"N, 52°30'42.0"E.
   d. 24°28'15.6"N, 52°31'40.2"E.

A new channel, to be known as East Ghasha Channel, is being dredged (2016) between North Channel and the Ruwais Channel between position 24°23'52.2"N, 52°41'27.0"E and position 24°19'58.8"N, 52°42'07.2"E. The channel will have a dredged depth of 12m.

The Yabr Channel is closed to navigation for dredging work until further notice.

Vessels using the ports of Jabal Dhama and Ruwais are to maintain listening watches on VHF channels 9 and 21. all vessel movements must be coordinated with the VTS. The locations of the dredges will be announced by the VTS to all vessels entering or leaving the ports.

Jazirat Das (25°09'N., 52°52'E.)

World Port Index No. 48277

15.35 Jazirat Das, located about 26 miles N of Sir Bani Yas, is an island base for offshore drilling operations, plus the export of crude and related products, from several surrounding offshore oil fields.

Abu Dhabi Petroleum Ports Authority Home Page
http://www.adppa.ae

Winds—Weather.—See paragraph 15.1 for further information. The prevailing winds are from the NW.

Tides—Currents.—The tides at Jazirat Das are diurnal, with a spring rise of 1.5m.

Depths—Limitations.—Five loading berths are available, as follows:

1. Berth No. 2—A dolphin berth located about 0.5 mile NE of the S end of Jazirat Das.
2. Berth No. 3—A Single Point Mooring (SPM) buoy located about 1.2 miles E of Berth No. 2. The berth is surrounded by a restricted area best seen on the chart.
3. Berth No. 4—An LPG/LNG/sulfur facility located about 0.6 mile NNW of Berth No. 2. The berth has two platforms, close together, seaward of a T-headed jetty. The N platform handles pelleted sulfur. The S platform handles LNG/LPG vessels.
4. Berth No. 5—A sulfur-loading berth located between Berth No. 2 and Berth No. 4, consisting of a platform joined by a trestle jetty to the shore, with mooring dolphins on either side.
5. Berth No. 6—A Single Point Mooring (SPM) buoy located about 1.7 miles SE of Berth No. 3. The berth is surrounded by a restricted area best seen on the chart.

Berthing limitations are given in the accompanying table titled **Jazirat Das—Berthing Limitations**.

A small craft harbor, situated on the SE end of the island, provides berths for coastal tankers and cargo lighters. There is a least depth of 3.8m in the approaches, while alongside depths range from 2.7 to 4.7m. Vessels up to 58m long can be accommodated.

Aspect.—Jazirat Das is low in its reef-fringed S part, but rises to an elevation of 39m at its NW end. A spit, with depths of less than 7m, extends 2.5 miles S of the island's S end.

In addition to the piers off the island's E side, a small jetty, from which a flare is shown, is located at the island's NE end. Other flares are located on the island's N end, while a group of six flares in a semicircle, centered on a platform, stand about 0.5 mile N of the island.

A group of three radio masts stands on the island's NE end, while another radio mast stands on the SE end. A prominent aluminum-painted building stands at the island's S end.

Pilotage.—Pilotage is compulsory for tankers, gas carriers, and general cargo vessels. The pilot boards, as follows:

1. Vessels arriving from S—Zaqqum Traffic Separation Scheme (25°00.0'N, 53°02.5'E.).
2. Vessels arriving from N—Das Deepwater Channel (25°10.0'N, 52°56.0'E.)

Regulations.—Vessels proceeding to Jazirat Das should advise the harbormaster of the ETA by e-mail 72 hours in advance, with confirmation sent 48 hours, 24 hours, and 12 hours in advance. Confirmation should also be sent 4 hours in advance to Port Control on VHF channel 12 or 16.

Anchoring vessels should advise Port Control on VHF channel 12 or 16 of the following:

1. Anchoring time (in local time).
2. Anchoring position—bearing and distance from Tanker Berth No. 6 (25°08'02.4"N., 52°55'37.8"E.).

A listening watch should be maintained on VHF channel 12 and 16 while at anchor.

When departing the anchorage, vessels must obtain prior approval from Port Control by stating the following information:

1. Intended time of weighing anchor.
2. Reason for departure.
3. Time anchor is clear.

Navigation off the E side of Jazirat Das without permission is prohibited.

Deep-draft vessels intending to use the buoyed channel must inform Port Control of their intentions.

Vessels must pass seaward of Berth No. 3 when transiting the area. While at the loading berth, vessels must have fire

wires rigged fore and aft, keeping a pilot ladder rigged and out on the vessel's offshore side. The local authorities should be contacted for information on additional regulations.

Vessels over 25 years of age are not allowed to berth at the terminal.

Signals.—Three red balls by day, or three red flashing lights at night, shown from a signal mast located on the E breakwater of the small craft harbor, indicates the port is closed and no unauthorized vessels may enter.

Contact Information.—Port contact information can be found in the table titled **Jazirat Das—Contact Information**.

Anchorage.—The holding ground off this island is reported to be poor. Main Anchorage, located about 5 miles SE of the signal mast, has charted depths of 13.7 to 24m. This is the usual anchorage for vessels awaiting a berth or for cargo vessels waiting for a change in the weather.

Jazirat Das—Berthing Limitations

Berth	Vessel size	Vessel length	Maximum draft	
			Berthing	Sailing
No. 2	16,000-265,000 dwt (See Note 1)	167.9-350.5m	17.07m	19.51m
No. 3	500,000 dwt	Minimum length of 244m	21.95m	24.00m
No. 4	100,000 dwt	LNG: 180-300m LPG: 140-260m Pentane: 135-300m	14.0m	
No. 5	8,500 dwt	Maximum length of 130m	10.0m	
No. 6	See Note 2.		18.5m	21.0m

Note 1.—168,000 dwt partially loaded.

Note 2.—Maximum displacement of 360,000 metric tons.

Jazirat Das—Contact Information

	Port Control	Harbormaster
Call sign	Das Port Control	—
VHF	VHF channels 12 and 16	—
Telephone	971-2-6028996	971-2-6028900
	971-2-8733029 (emergency)	971-2-6028980
Facsimile	—	971-2-6028950
E-mail	pctas@adma.ae	poa1das@adma.ae

Freighter Anchorage, centered about 0.5 mile SE of the signal mast, has charted depths of 5.8 to 15.2m.

Vessels other than those calling at Jazirat Das are prohibited from anchoring within the port limits, the extent of which is shown on the charts.

Vessels should not anchor between Berth No. 6 and Jazirat Das due to the presence of submarine pipelines.

Directions.—The whole of the S bight of the Persian Gulf is littered with oil fields, shoals, and other hazards to navigation. Vessels should avoid entering the charted limits of any oil field as numerous obstructions, both above and below water, may exist in addition to what is shown on the chart.

Submarine pipelines may reduce the charted depth of water enough to pose a danger to a deeply laden vessel; therefore, vessels should maintain an adequate underkeel clearance.

Two approach routes are available to vessels wishing to trade at Jazirat Das. The N route, with a least depth of 23.8m is primarily intended for loaded tankers departing the port, but is available to arriving vessels if their draft is such that they cannot use the S route safely, provided Das Marine is informed in advance.

The Das Approach Channel is a buoyed channel best seen on the chart.

The S approach route, with a depth of at least 20m, is the recommended route for vessels loading at Jazirat Das.

Observing the Traffic Separation Scheme off Zirkuh, and keeping a good eye out for traffic, proceed as safe navigation permits to the pilot boarding ground.

Pass W of the Zirkuh Petroleum Port limits, keeping in mind the 14.3m shoal about 3 miles NE of Jazirat Qarnayn, the foul ground extending up to 4.5 miles S of Jazirat Das, and the wreck about 4 miles S of the same island.

Vessels are urged to contact the local authorities for the latest information on depths, dangers, and approach routes before planning a voyage here.

Caution.—A pipeline crossover point has been constructed in approximate position 25°08.5'N, 52°59.3'E. Depths in this area may be up to 3.2m less than charted.

A Traffic Separation Scheme is located between Jazirat Das and Umm Ash Shayf Oil Field.

An extraction area is located E of Jazirat Das.

Land reclamation activities are in progress (2012) in an area extending up to 1.5 miles S of the S extremity of Jazirat Das.

A dangerous wreck, with a least depth of 19.1m, lies S of the Main Anchorage in position 25°04'21"N, 52°57'42"E.

Saath ar Rasboot Oil Field (25°19'N., 53°28'E.) is under development SE of Jazirat Das.

15.36 Sasan Oil Field (Salman Oil Field) (25°32'N., 53°09'E.) is the larger of the two adjacent oil fields which lie between 20 and 30 miles NE of Jazirat Das. Numerous well heads and associated structures, many of them showing lights and sounding fog signals, together with unlighted obstructions and submarine pipelines, exist in the oil fields.

Sasan Oil Field is the S end of a 91-mile long pipeline to Jazireh-ye Lavan. The S part of this pipeline is covered by a fixed red sector of a light on the N oil rig between the bearings of 170° and 180°, and 350° and 360°.

Ships should navigate with caution when in the vicinity of the oil fields and are advised to keep clear of the area.

Abu Al Bukhush Oil Field is surrounded by a restricted area and no vessel should enter the area without authority.

Umm Ash Shayf Oil Field (25°13'N., 53°14'E.) is centered approximately 15 miles ENE of Das Island. The circular limits are best seen on the chart. The pipelines, platforms, and other dangers associated with the field are enclosed in a Restricted Area.

Nasr Oil Field (25°19'N., 53°28'E.), under development and best seen on the chart, lies NE of Umm Ash Shayf Oil Field.

15.37 Al Bunduq Oil Field (25°06'N., 52°37'E.), centered about 14 miles WSW of Jazirat Das, consists of numerous oil well heads and associated structures, usually lighted, together with unlighted obstructions and submarine pipelines.

Ships should navigate with caution when in the vicinity of the oil field, the limits of which are shown on the charts, and are advised not to navigate within it. A submarine pipeline is laid from Al Bunduq Oil Field to Jazirat Das.

Anchorage is reported to be prohibited within 2 miles of the pipeline.

Karkara Oil Field (25°08'N., 52°28'E.), centered around a platform located on an 8.8m shoal depth, is surrounded by a restricted area best seen on the chart.

Vessels are requested to keep well-clear of the installation and not enter the restricted area without first contacting the Offshore Installation Manager on the Delta Explorer.

Contact Information.—The Offshore Installation Manager can be contacted, as follows:

1. Call sign: Delta Explorer
2. VHF: VHF channels 12 and 72
3. Telephone: 974-44586802
4. Facsimile: 974-44586806

Jazirat Dayyinah (24°57'N., 52°24'E.) is a flat sandy island, the highest part being a detached black rock at its N end, which is reef-fringed. Detached rocks, rocky patches, and shoals, best seen on the charts, lie in the vicinity of the island and on an extensive shoal E and N. A lighted beacon marks the seaward end of a 3m depth about 1 mile NNW of the N extremity of the island.

Anchorage can be taken, in 10m, about 1 mile SSE of the S end of Jazirat Dayyinah, with good shelter from the shamal.

Satah Oil Field (24°55'N., 52°33'E.) is centered 8.5 miles ESE of Jazirat Dayyinah. Its limits are shown on the chart. Several structures and freestanding wells within the field exhibit lights. A submarine pipeline is laid between the central platform ST-I in Satah Oil Field and the W side of Jazirat Qarnayn. The oil field is surrounded by a safety zone, which is best seen on the chart.

15.38 Jazirat Sharaiwah (25°02'N., 52°14'E.) is a 12m high islet marked by several hummocks; shallow water encircles the islet. A rock displaying a light lies 1 mile NW of the island.

Anchorage can be taken during a shamal, in 9 to 11m, sand, about 0.5 mile off the S side of the islet.

Jazirat Dalma (24°30'N., 52°19'E.) is formed N by a series of low hills which appears as tableland from offshore. The S part of Jazirat Dalma is low, sandy, and tapers to a spit of reclaimed land.

A small village is situated on the SW side of the island. A desalination plant and a jetty are situated on the SE side of the main part of the island. Another jetty is situated on the SW side.

Landing is easy on either side of the spit of reclaimed land at the S end of the main part of the island, but elsewhere the shores are fringed by a reef.

An offshore mooring comprising three buoys, each showing a light, is situated 0.8 mile E of the S end of the main part of the island. An oil pipeline connects the terminal to the island.

Hair Dalma 3 (HD3) (24°31'N., 52°26'E.), an oil platform, marked by a light, stands 5.5 miles E of Jazirat Dalma. Mariners should keep well clear of the vicinity.

Coast of United Arab Emirates and Saudi Arabia—Jabal az Zannah to Ras abu Qumayyis

15.39 Mugharaq Port (24°11'N., 52°34'E.), situated on the W side of Jabal az Zannah, handles general cargo and ro-ro vessels, landing craft and ferries serving Sir Bani Yas (paragraph 15.28) and Jazirat Dalma (paragraph 15.38), and the local fishing fleet. The port includes the Jabal az Zannah Jetty, about 2 miles NNE

Depths—Limitations.—The N channel leading to the port has a dredged depth (2015) of 6.0m; the W channel leading to the port has a least depth of 5.5m. The channel leading to the Jabal az Zannah Jetty has least depth of 4.5m. The channels are 50 to 60m wide.

Mugharaq Port has six ro-ro ramps and a berth with a length of 82m and an alongside depth of 2.6m. Vessels up to 120m long, with a maximum draft of 5m and a maximum beam of 25m, can be accommodated.

The Jabal az Zannah Jetty has three ro-ro ramps.

Pilotage.—Pilotage is compulsory and is available from 0600-2000, but can be extended to 24 hours, if necessary.

Pilots board, as follows:

1. Approaching from the W entrance—position 24°12'00.0"N, 52°31'30.0"E.
2. Approaching from the N channel—position 24°14'20.4'N, 52°34'27.6"E.
3. Baraka—position 24°03'00.0'N, 52°12'00.0"E.

Pilots can be contacted (call sign: Mugharaq Port Control) on VHF channels 8 and 16.

Vessels requiring a pilot should send the ETA, maximum draft, and destination to Mugharaq Port Control 24 hours prior to arrival. This information should be confirmed or amended no later than 4 hours prior to arrival at the pilot boarding position.

Vessels moving within or departing the port should request a pilot from Mugharaq Port Control 24 hours in advance and confirm this information no less than 4 hours prior to departure.

Contact Information.—See the table titled **Mugharaq Port—Contact Information**.

Anchorage.—Anchorage can be taken W of the port, in charted depths of 10 to 12m, in the following positions:

a. 24°11'00.0"N, 52°30'34.2"E.
b. 24°10'44.4"N, 52°31'06.0"E.

15.40 From Jabal az Zannah, the coastal hills continue SW for about 22 miles to Jabal Wutayd, about 3 miles inland; then to **Ras as Sila** (24°03'N., 51°47'E.), about 28 miles W. The shore consists of the Sabkha Matti, a low, swampy and desolate salt marsh area. Most of this coast has not been adequately surveyed.

North of Ras as Sila, for about 13 miles, the coast consists of a succession of small rocky points; the land rises gradually to a level tableland in a series of small terraces. Low white cliffs continue NW about 3 miles to Ras Mushayrib; between this point and Ras al Hazrah, 11 miles NW, are two inlets, Dawhat Tallab and Dawhat al Khuwaysat, with hilly shores.

Mugharaq Port—Contact Information

	Port Control	Harbormaster
Call sign	Mugharaq Port Control	—
VHF	VHF channels 8 and 16	—
Telephone	971-2-877-1380	971-2-510-9303
	971-2-877-1493	971-5-28002144 (mobile)
Facsimile	971-2-877-1379	971-2-695-2169
E-mail	mugharaq.portcontrol@adpc.ae	jaber.alshehhi@adpc.ae
Web site	http://www.adports.ae	http://www.adports.ae

Az Zabbut (24°08'N., 52°26'E.), marked by a stone cairn on its summit, is a small boot-shaped island lying close off a small point.

The coast between the point and Jabal az Zannah is low, sandy, and covered by grassy hummocks. A group of hills, 50m high, are prominent, as is a mosque tower 5 miles SW of the highest hill. The area between Jabal az Zannah and Az Zabbut is filled with a shallow bank extending 10 miles offshore. Several drying reefs and rocky patches lie on the bank.

Jabal Barakah (24°00'N., 52°20'E.) attains a height of 64m. On the seaward side, it rises steeply from 6.1m high cliffs.

Webb Rock (24°05'N., 52°15'E.), with a depth of less than 1.8m, should be given a wide berth. A unlighted platform charted S of the rock was reported missing in 1991.

Ras Sarab (24°16'N., 51°47'E.), 13 miles N of Ras as Sila, consists of a conspicuous table-topped hill about 18m high.

The reef-fringed coast N to **Ras Mushayrib** (24°18'N., 51°45'E.), a very low rocky shelving point, is formed of low whitish cliffs.

Yasat Ali (24°14'N., 52°01'E.), the largest of four small islands, is separated from the second largest island, Yasat Safli, by a boat channel 183m wide and less than 5m deep. Landing can be made on the E side of the islands.

Judayrah, the smallest of the four small islands, lies on shoals bordering the N side of South Yasat Channel, which is 1 mile wide, with depths of 5.8 to 12.8m along the N side.

Caution.—The coastal bight between Jabal Barakah and Ras as Sila is imperfectly surveyed and foul. It is reported that abandoned oil well structures and pipes are located S of Webb Rock. Local knowledge is required to navigate in this area.

15.41 Umm al Hatab (24°13'N., 51°52'E.), 8 miles W of Yasat Ali, is a small island lying on a reef, with several above-water rocks off its N end. A large drying reef lies 3.5 miles NNE of Umm al Hatab.

Naitah (24°18'N., 51°48'E.), an islet, lies at the SE and SW ends of separate reefs. A strait about 0.5 mile wide and 6.1m deep is the only navigable passage leading N between the mainland and the extensive reefs extending NW from Yasat Ali. Naitah lies at the N edge of the strait. A 4.9m patch in the channel is passed on either side.

Ras al Hazra (24°23'N., 51°36'E.) is very low, rocky, and shelving. The point is fronted by rocky shoals and islets, which are best seen on the charts.

Extensive shoal areas lie N and E of Ras al Hazra. Small craft with local knowledge can transit the various passages between the dangers.

Al Qaffay (24°35'N., 51°43'E.) is the largest of three islands lying on shoals with several rocks and islets. The entire area between Al Qaffay and the mainland S contains innumerable dangers, which are unmarked and do not show up well.

15.42 Dawhat as Sumayrah (24°18'N., 51°33'E.) is a shallow bay fringed by drying sand banks. A rocky peninsula forming the E side of the bay extends S from Ras al Hazra.

The W side of the bay trending to **Ras Sumayrah** (24°19'N., 51°26'E.) consists of a low, sandy plain. An isolated high hill rising 2.5 miles SSW of Ras Sumayrah is prominent from N.

Khawr Duwayhin (24°20'N., 51°20'E.) is a shoal bay extending W from **Ras Juwayfariyah** (24°20'N., 51°24'E.) and N for 10.5 miles to Ras Umm Mayub, a low point. A series of

shoals, some of which have depths of less than 1.8m, lie across the bay entrance.

Jabal Tullah (24°24'N., 51°19'E.) comprises six high hillocks close together, with a detached hillock 0.5 mile SSW of the group. The coast between Jabal Tullah and Ras Umm Mayub is fronted by drying banks and backed by a low sandy plain rising to high hills about 1 mile inland.

Three Buttes are high, prominent hillocks rising 1 mile NW of Ras Umm Mayub; Jabal Mayub, a high hill, rises 2 miles W.

Bandar Matuq (24°33'N., 51°28'E.) is a bay between Jazirat Hadhba and Ras Seyad.

Anchorage, sheltered from the shamal, can be taken in the bay, in about 14m, sand and shell.

Coast of Qatar—Ras abu Qumayyis to Ras abu al Mushut

15.43 Ras abu Qumayyis (24°34'N., 51°30'E.), low and rocky, is the E extremity of the coastal projection forming the SE side of Khawr al Udayd, an inlet.

The SE shore of the inlet consists of Jabal al Udayd, a conspicuous table-topped hill, 95m high, which is the highest peak in a range of hills backing the coast forming the inlet.

Fasht Umm Jannah (24°34'N., 51°33'E.), an extensive partly-drying reef, is separated from Ras abu Qumayyis by a deep, constricted channel.

Khawr al Udayd (24°36'N., 51°20'E.), 0.5 to 1 mile wide, extends 5 miles SW from **Ras al Udayd** (24°38'N., 51°24'E.), the rocky N entrance point, before it opens into a shallow lagoon. A drying bar of sand and coral, over which there is a depth of 0.9m, lies across the inlet entrance. Although there is deeper water in the channel leading into the lagoon, it is only used by fishermen in winter.

Anchorage, sheltered from the shamal, can be taken off the entrance to the inlet about 0.5 mile offshore, in depths of 7 to 9m, sand and shell, with Jabal al Udayd bearing 200°, distant 4.5 miles.

Caution.—Care should be taken to avoid the shoals fronting the inlet and also to avoid closing the shore due to the sand hills W of the anchorage appearing farther off than they are.

It has been reported (2007) that preliminary investigations are underway to construct either a bridge or a bridge-causeway combination to connect the SE coast of Qatar with the W part of the United Arab Emirates.

15.44 Niqyan Qatar (24°53'N., 51°32'E.) is an irregular range of white sand hills, up to 46m high, which borders the coast for 18 miles NNE of the entrance to Khawr al Udayd.

Naqa abu Anfus (24°55'N., 51°33'E.) is the highest hill of the range. About 3 miles farther NE, at Umm Said, the coast recedes forming Dawhat Umm Said; it then continues NE about 5 miles to **Ras al llaq** (25°01'N., 51°38'E.), marked by a high framework tower with a black, triangular topmark. There are numerous beacons, a gas liquids plant with three tall columns, a fertilizer plant, and a flour mill on the shore.

Fasht al Arif (24°57'N., 51°40'E.), which dries in patches and shows up well under most conditions, extends about 7 miles SE from the coast in the vicinity of Ras al llaq.

A bank, with a depth of 6.2m at its S end, extends 1.5 miles SSW from the S end of Fasht al Arif; sunken rocks lie up to 1 mile E of the same end.

To the SW of Fasht al Arif, the buoyed channel passes between a bank, with a depth of 7.3m, and an obstruction, with a depth of 8.8m. The E, S, and SW sides of Fasht al Arif are marked by pole beacons.

Jazirat al Ashat (24°45'N., 51°37'E.) is a group of three flat islets and two detached rocks. The islets are bordered by cliffs. The area around the islet is foul, with shoals of less than 1.8m lying for several miles in all directions. A light is shown from the islet.

Fasht al Udayd (24°50'N., 51°47'E.), an extensive partly-drying reef, is bound S and W by a sand-covered coral reef, much of which dries, but is clearly visible at all times. The channel between Fasht al Arif and Fasht al Udayd is about 4 miles wide but is reduced to a width of 2.5 miles between the 10m curves.

Halat Dalma (24°47'N., 52°00'E.) is an extensive shoal on which lies a large drying coral reef covered with patches of sand. The channel from Fasht al Udayd divides, with one part leading S of Halat Dalma and the other leading around the W and N edges of the reef. The channels are deep but intricate and require local knowledge.

Umm Said (Mesaieed) (Musay'id) (24°54'N., 51°34'E.)

World Port Index No. 48287

15.45 Umm Said (Mesaieed) consists of several complexes devoted to a variety of cargo.

Mesaieed Industrial City Home Page

http://www.mic.com.qa

Winds—Weather.—See paragraph 15.1 for further information.

Tides—Currents.—The mean tidal range here is 1.3m, but may vary as much as 0.6m, depending on the meteorological conditions. Tides here have a large diurnal component, resulting in only one high and low tide per day at certain times of the year. The time of HW at the port usually occurs about 1 hour after HW off the N end of Outer Channel.

In the approach to Outer Channel, tidal currents set parallel to the shore, and do not exceed a speed of 1 knot. In the S portion of the approach channel, the tidal currents generally set SSW on the flood and NNE on the ebb, and attain a rate of more than 2 knots, at times. Cross-channel sets can be expected.

Depths—Limitations.—The following restrictions apply to all vessels:

1. Maximum beam—60m.
2. Maximum draft—12.5m for VLCCs; 13.0m for all other vessels.
3. Maximum trim—3.0m.

The port is approached from the N through a dredged channel and charted recommended tracks.

Mesaieed West Channel, formerly known as Outer Channel, is a narrow channel about 6 miles long, with its N end about 17 miles NNE of Ras al Ilaj, running in a N-S direction through

the coastal bank. The initial portion of the channel, which is marked by lighted buoys, has been dredged (2015) to 15m until it is abeam of Hul Lighted Buoy, where the dredged channel turns WSW to the new port facilities at **Hamad** (25°01'N., 51°36'E.). The approach channel leading WSW to Hamad from Hul Lighted Buoy has been dredged (2015) to 15m. The port consists of an outer basin, partially dredged (2015) to 12.5m, and an inner basin, dredged (2015) to 17m.

South of Hul Lighted Buoy, the fairway to Mesaiied has a least depth of 11m, but lesser depths exist close by the recommended track in several places. The lighted buoys marking the channel S of Ras al Ilaj are now designated W-01 through W-12.

A second approach channel has been dredged into Umm Said. It has been designated as Mesaieed East Channel. This channel, which splits from Mesaieed West Channel in the vicinity of Umm Said Approach Lighted Buoy, is marked by lighted buoys designated E-01 through E-18. It rejoins Mesaieed West Channel SE of SE Arif Lighted Buoy. The channel is dredged to 13.5m and can accommodate vessels up to 320,000 dwt, with a maximum beam of 60m. A passing area, marked by lighted buoys and best seen on the chart, is located between Lighted Buoy E-05/Lighted Buoy E-06 and Lighted Buoy E-09/Lighted Buoy E-10.

Main Channel, formerly known as Inner Channel, comprises the channel SE of Fasht al Arif and the channel leading N and W to the anchorage off the oil terminal berths at Mesaieed. The channel has a least reported depth of 11m and is best seen on the chart.

See the Regulations topic for required underkeel clearances and maximum permitted drafts.

To the S and W of Fasht al Arif, the port has general depths of 9.8 to 20.1m, but several shoal patches or obstructions, best seen on the chart, lie close to the recommended track.

The port consists of three separate groupings of facilities, two of which are reached by dredged channels.

The petroleum berth, positioned at the S end of the port complex, is contained within a Restricted Area, best seen on the chart. North Berth, a Single Point Mooring (SPM) buoy, will accept vessels up to 320,000 dwt, with a maximum beam of 60m. and a length between 225m and 340m. The depth at this berth is 19.6m. An area to be avoided lies within a radius of 0.3 mile around the SPM.

The charted South Berth is no longer in use (2003). The submarine oil pipeline, as well as the mooring buoy and most associated lighted buoys, have been removed.

Information on pier facilities in Umm Said is given in the accompanying table titled **Umm Said (Mesaieed)—Berthing Facilities**.

It has been reported (2008) that a new 350m-long bulk aggregate pier, with an alongside depth of 15.5m, will begin construction and is scheduled to be completed by mid-2010. It has also been reported that an alumina reception berth, a fertilizer pier, and a liquid cargo jetty will also be constructed.

Umm Said (Mesaieed)—Berthing Facilities

Berth	Length	Alongside depth		Maximum vessel				Remarks
		Designed	Charted	Size	Length	Beam	Draft	
Facilities accessed via North Dredged Channel								
Gabbro No. 1	470m	13.0m	—	80,000 dwt	205m	40.0m	12.5m	Bulk aggregates and clinker. Located close NE of the charted ship repair yard.
Gabbro No. 2 (Return Quay)	150m	6.0m	—	20,000 dwt	120m	—	5.5m	Bulk aggregates and clinker. Vessels moor during daylight hours only. Located close NE of the charted ship repair yard.
No. 1 (QASCO No. 1)	350m	15.0m	14.8m	133,000 dwt	270m	40.0m	13.0m	Bulk iron ore pellets.
No. 2 (QASCO No. 2)	190m	15.0m	15.0m	133,000 dwt	170m	—	13.0m	Bulk iron ore and steel. Maximum vessel length may be exceeded if adjacent berth is empty.
No. 3 (QASCO No. 3)	250m	15.0m	14.8m	133,000 dwt	240m	—	13.0m	Bulk iron ore and steel. Maximum vessel length may be exceeded if adjacent Berth No. 2 is empty.

Umm Said (Mesaieed)—Berthing Facilities								
Berth	Length	Alongside depth		Maximum vessel				Remarks
		Designed	Charted	Size	Length	Beam	Draft	
No. 4 (QATAX/ SEEF Berth)	251m	13.0m	12.4m	60,000 dwt	200m	—	12.5m	Liquid bulk cargo.
No. 6 (Refinery Berth)	258m	13.0m	12.7m	60,000 dwt	238m	45.0m	12.0m	Petroleum.
No. 7A and 7B (Container Berths)	Under construction and scheduled to be put into operation in mid-2009. The designed length of the berths is 465m, with a designed alongside depth of 13.0m. The facility is designed to accept vessels up to 50,000 dwt, with a maximum length of 210m.							
No. 9 (Cargo Berth)	200m	10.0m	8.8m	—	185m	—	9.5m	General cargo.
No. 10 (QALCO Berth)	200m	10.0m	8.5m	—	180m	—	9.5m	General cargo and bulk liquids.
Facilities accessed via South Dredged Channel								
No. 16 (QAFAC Berth)	250m	13.0m	13.0m	50,000 dwt	230m	32.2m	12.5m	Bulk liquid cargo.
No. 18 (QAPCO Berth No. 1)	255m	13.0m	13.0m	—	235m	—	12.5m	Container and bulk cargo.
No. 19 (QAPCO Berth No. 2)	255m	13.0m	12.8m	60,000 dwt	235m	—	12.5m	Bulk and liquid bulk cargo.
No. 20 (QAFCO Berth No. 1)	260m	12.0m	11.8m	45,000 dwt	225m	30.0m	11.5m	Ammonia and bulk liquid urea.
No. 21 (QAFCO Berth No. 2)	213m	12.0m	12.0m	45,000 dwt	193m	30.0m	11.5m	Bagged urea.
No. 22 (QAFCO Berth No. 3)	213m	12.5m	12.5m	45,000 dwt	213m	26.0m	12.0m	Ammonia and bulk urea.
No. 23 (QAFCO Berth No. 4)	213m	12.5m	—	45,000 dwt	213m	26.0m	12.0m	Bulk urea.
NGL Jetty	97m	12.8m	12.8m	120,000 m^3	290m	—	12.5m	LNG. The minimum vessel length accepted is 168m.
Multi-Product Berth (MPB Berth)	113m	14.0m	—	**	340m	60.0m	12.5m	Bulk liquids. Mooring dolphins extend berthing length to 390m. Vessels berth port side-to. Located about 0.8 mile SW of NGL Jetty.
	** Vessel size range is determined by product, as follows: 1. Crude oil—100,000 to 320,000 dwt. 2. Naptha—60,000 to 320,000 dwt. 3. NGL Condensate—50,000 to 100,000 dwt.							
Q-CHEM Berth No. 1	180m	12.0m	—	40,000 dwt	185m	20.0m	11.5m	Container, bulk, and liquid bulk cargo. Located about 0.3 mile SW of Multi-Product Berth.
Q-CHEM Berth No. 2	180m	12.0m	—	40,000 dwt	185m	23.0m	11.5m	

Aspect.—The town of Umm Said, standing about 6 miles N of the NGL Jetty, may be identified by a conspicuous mosque, and a radio mast standing close SW. A conspicuous group of oil tanks, with a refinery N of them, stand about 2 miles S of town.

Two flares, two radio masts, and three tall columns are visible in the vicinity of the oil berths.

The flour mill standing about 1 mile NE of the NGL Jetty has a conspicuous tower, while 1.5 miles further NE lies the steel mill chimney.

Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—QASCO Berth No. 2

Pilotage.—Pilotage is compulsory for all general cargo, tanker, chemical, and ammonia vessels when berthing, unberthing, or shifting berth.

Channel pilotage is compulsory for the following vessels:

1. Tankers—Length greater than 200m, beam greater than 40m, or draft greater than 8.5m.
2. Dry cargo vessels—Length greater than 200m, beam greater than 40m, or draft greater than 9.5m.

Pilotage for all vessels is provided by the Musay'id Port Operations Department.

The pilot boards, as follows:

1. Channel pilot—About 1 mile NE of Umm Said Approach Lighted Buoy.
2. Channel pilot exempted vessels—In the vicinity of Inner Fairway Lighted Buoy, as directed by the Vessel Traffic Control Service.

The pilots for Hamad board in position 25°10.7'N, 51°42.8'E.

The pilots can be contacted on VHF channels 9 and 11.

Regulations.—Vessels should send their ETA at Mishut Lighted Buoy (25°16.0'N., 51°46.8'E.) by telex or e-mail 72 hours in advance, with confirmations sent 48 hours, 24 hours, and 12 hours prior to arrival, stating the following information:

1. Arrival and departure drafts.
2. Quantity of cargo.
3. Maximum loading rate required.
4. Deballasting time.
5. Whether vessel is able to load and discharge ballast at the same time.
6. Any crew changes and/or medical treatment required.

The following underkeel clearances must be maintained by vessels using the Umm Said channels:

1. Vessels up to 100,000 dwt—0.9m.
2. Vessels between 100,000 to 150,000 dwt—1.2m.
3. Vessels over 150,000 dwt and all LPG carriers—1.5m.

Bearing in mind the underkeel clearances given above, a vessel may expect a sailing delay due to draft restrictions, as follows:

1. Vessels drawing 10.4m or less may sail at any time.
2. Vessels drawing 10.7m will rarely have to consider the effects of tides.
3. Vessels drawing 11m will usually have to use a tide.
4. Vessels drawing 11.3m will always have to use a tide.
5. Vessels drawing 11.6m will occasionally be delayed several days.
6. Vessels drawing 11.9 to 12.2m can expect longer de-

Courtesy of Qatar Petroleum Mesaieed Port Development
Mesaieed—QASCO Berth No. 3

Courtesy of Qatar Petroleum Mesaieed Port Development
Mesaieed—QAFAC Berth No. 16

Courtesy of Qatar Petroleum Mesaieed Port Development
Mesaieed—QATAX/SEEF Berth No. 4

Courtesy of Qatar Petroleum Mesaieed Port Development
Mesaieed—QAPCO Berth No. 18

Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—QAFCO Berth No. 1 (charted as Berth No. 20)

Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—QAFCO Berth No. 3 and QAFCO Berth No. 4 (charted as Berth No. 22 and Berth No. 23)

lays. The best months for vessels of this draft to trade here is June and July.

7. Vessels drawing 12.5m and over are not worth scheduling here, as on the few days the predicted height of tide indicates they could sail, meteorological conditions may well lower the height of the tides.

The safe sailing draft is calculated as 10.97m plus the height of tide in the channel minus the underkeel clearance for the vessel. Vessels utilizing berths other than the berths contained within the restricted area are allowed a maximum permitted draft of 10m at any state of tide, and a maximum permitted draft of 11.9m at high tide.

A vessel with a maximum length of 259m can be accommodated. Vessels should be ready to move under their own power while at berth. No repairs should be undertaken that would impair the vessel's ability to get underway or its fire-fighting ability.

The following information must be sent to the Port Department, and suitability confirmation received, before a vessel starts loading at the load port:

1. Vessel name and IMO Number.
2. Length overall and year of construction.
3. Beam.
4. Depth.
5. Arrival draft and freeboard.
6. SDWT.
7. Number of hatches.
8. Number of cranes and capacity.
9. Cargo type and amount.
10. Discharging method (bulk cargo vessels shall provide grab type and size; touch type grabs are prohibited).
11. Confirm vessel will discharge cargo within a maximum of 4 days.
12. Maximum discharge rate.
13. Valid ISS Certificate Number (ISPS Code).
14. Consignee name.

Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—NGL Jetty

Vessels older than 20 years must also submit the latest available Port State Control Inspection, to include its date, place, and any remarks.

It has been reported (2007) that a health declaration must be sent 6 hours prior to arrival; this requirement applies especially for vessels arriving from Iraq.

Vessels must have their AIS equipment switched on and operational prior to arrival.

Vessels carrying armed anti-piracy security personnel, arms, and ammunition shall provide the following information to the Mesaieed Port Department 72 hours prior to entering Qatari territorial waters:

1. Crew list, including details of the security personnel on board.
2. A Master's Declaration of arms and ammunition on board giving full details, such as serial number, type, and quantity.
3. A Master's Declaration confirming the total number of ship's crew and security detail on board does not exceed the total number of persons for which lifesaving equipment is provided.
4. A Master's Undertaking Letter stating that all arms and ammunition shall be kept secured and sealed during the vessel's stay in Mesaieed.

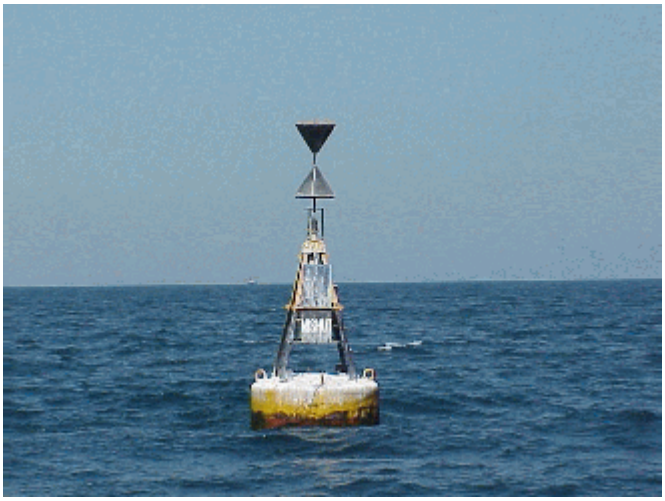
Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—Multi-Product Berth (MPB)

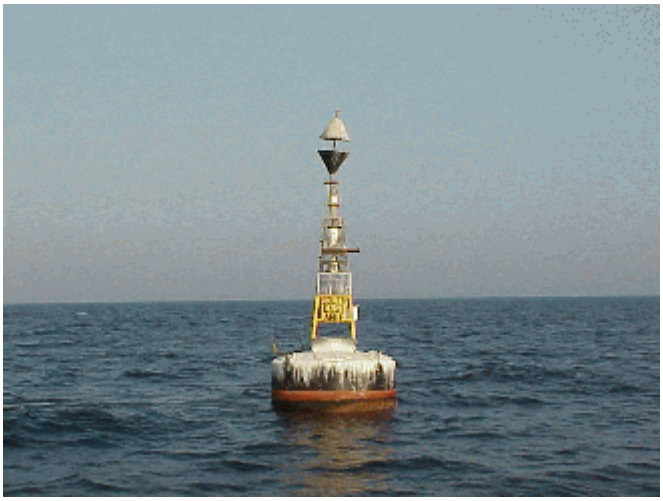
Courtesy of Qatar Petroleum Mesaieed Port Development

Mesaieed—Q-CHEM Berth No. 1 and Q-CHEM Berth No. 2

Jazirat al Bushayriyah



Mishut Lighted Buoy



SE Arif Lighted Buoy

All vessels must keep a listening watch, even when alongside, on VHF channel 11.

Vessel Traffic Service.—A Vessel Traffic Control Service (VTCS) operates in the approaches to the port. All vessels must obtain clearance from the VTCS before entering the channel.

All vessels bound for Umm Said are required to call Mesaieed Traffic Control on VHF channel 11 or 16 (call sign: Mesaieed Traffic) 6 hours before arrival at Mishut Lighted Buoy. Vessels are also required to report their status when within 5 miles of Mishut Lighted Buoy.

In addition, a vessel should contact the VTCS when transiting inbound or outbound on passing the following:

1. Mishut Lighted Buoy.
2. Approximate position 25°02'36.4'N, 51°42'43.8"E.
3. Approach Lighted Buoy (Mesaieed East Channel).
4. Lighted Buoy E-04 (Mesaieed East Channel).
5. Lighted Buoy E-15 (Mesaieed East Channel).
6. SE Arif Lighted Buoy.
7. No. 1 Inner Lighted Buoy.
8. Turning Lighted Buoy.
9. Fairway Lighted Buoy (inbound only).

Fairway Lighted Buoy

All vessels, except where noted, should contact the VTCS on VHF channel 11, as follows:

a. When the vessel's draft is 9.5m (only vessels at the Gabbro berths.

b. 24 hours prior to the estimated time of completion of cargo operations.

c. 12 hours prior to the estimated time of completion of cargo operations.

d. 6 hours prior to the estimated time of completion of cargo operations.

e. 2 hours prior to the estimated time of completion of cargo operations.

f. Upon completion of cargo operations.

g. The Vessel Traffic Control Service can be contacted, as follows:

1. Call sign: Mesaieed Traffic
2. VHF: VHF channel 11 and 16
3. E-mail: mesaieedvtc@qp.com.qa

Anchorage.—Seven emergency anchorage areas have been established adjacent to Mesaieed East Channel and Main Channel, as follows:

1. M1—On the W side of Mesaieed East Channel about 1.5 miles SSW of Lighted Buoy E-03.
2. M2—On the W side of Mesaieed East Channel about 1.2 miles SSE of Lighted Buoy E-08.
3. M3—About 2.7 miles NE of Southeast Arif Lighted Buoy.
4. M4—About 1 mile NE of Southeast Arif Lighted Buoy.
5. M5—About 2.5 miles NE of South Arif Lighted Buoy.
6. M6—About 1.5 miles ENE of South Arif Lighted Buoy.
7. M7—About 1.5 miles W of South Arif Lighted Buoy.

See table titled **Designated Anchorages** for a list of designated anchorages with details about each one. For more extensive details of all the anchorages, the local port authorities should be consulted.

Small vessels can find shelter clear of the fairway, dredged channels, restricted area, and shoals.

Designated Anchorages	
North of the fairway	
A1 to A6	Non-hydrocarbon vessels, good shelter from the shamal and protected from the nashi.
B1 to B3	Non-hydrocarbon vessels, good shelter from the shamal and protected from the nashi.
C1 to C3	Small tankers.
P1 to P3	Mooring buoys for barges and tugs waiting for alongside berths, good shelter.
T6	Large tankers and bulk carriers, good holding ground.
South of the fairway	
T1 to T5	Large tankers and bulk carriers, good holding ground.
S1 and S2	Chemical tankers and general cargo vessels.

The charted Large Tanker Anchorage and Freighter Anchorage, N of Large Tanker Anchorage, are no longer in use (2003). They have been replaced by individual anchorage areas on both sides of the existing fairway, as follows:

Caution.—Caution is advised when transiting the channel to the port, especially with a minimum underkeel clearance.

Under favorable conditions, shoals with depths of less than 11m can generally be distinguished by the lighter color of the water over them, but this color difference should not be relied upon, as some shoals appear as darker patches, while some give no indication of their presence at all.

All ships are requested to anchor in the appropriate designated anchorage area and to avoid obstructing the fairway and approach to North Berth. Ships should not approach within 1 mile of this berth, or of the pipeline connecting it to the shore, unless a pilot is aboard.

15.46 Umm al Hul (25°05'N., 51°37'E.), a village, in ruins and deserted, stands on the W side of a drying landlocked inlet. A high frame tower with a black diamond topmark marks the village. Jabal al Wakrah is a high level-topped rocky hill about 4 miles N of Umm al Hul.

The coast in this entire area is low, sandy, and backed by stony desert.

A prohibited anchorage area enclosing a submarine gas pipeline is located N of Umm al Hul. Both are best seen on the appropriate chart.

Al Wakrah (25°10'N., 51°37'E.), a large, but mostly deserted town in ruins, has a minaret and fort, with a square tower and flagstaff, that are conspicuous. There is a small stone wharf fronting the tower and a drying, but sheltered, boat harbor off the N end of town. Wakrah Lighted Buoy is moored 4.5 miles E of Jabal al Wakrah.

The entire coast N and S of Al Wakrah is fronted by a continuous shoal, best seen on the charts, which extends at least 2 to 3 miles offshore.

Off-lying shoal banks, including Ruqq Quraynayn, on which lie many detached patches of lesser depths, are shown on the charts as extending parallel to the coast. A large power station stands about 2 miles N of Al Wakrah.

Ruqq Quraynayn (25°05'N., 51°50'E.), a shoal extending about 20 miles N from the vicinity of Fasht al Udayd, is marked NE by a light that is shown from a rubble beacon standing 19 miles E of Jabal al Wakrah. Numerous above and below-water rocks lie within a 0.5 mile radius of the beacon.

Except for the W side of this large shoal, the limits are not well-known and it should be given a wide berth. Some of the area to the S and W of the shoal is unsurveyed. Ships passing N and E of the shoal should keep in depths greater than 11m. Tidal currents in the area of the shoals set NNE to SSW.

Coast of Qatar—Ras abu al Mushut to Ras Rakan

15.47 The coast extending from Ras abu al Mushut to **Al Jazirah al Aliyah** (25°24'N., 51°34'E.), a barren, sandy islet separated from the coast by a shallow boat channel, forms a large bay. The commercial port and capital of the State of Qatar is situated at the head of the bay.

Ras abu al Mushut (25°16'N., 51°37'E.) is a low rocky point which is not easily identified from offshore. Inland from the point the land rises gradually. The trees and buildings in the village of Markhiyah, on high ground about 3 miles NW of Ad Dawhah, are conspicuous from offshore. Several lighted radio masts on the W side of the bay are conspicuous.

Al Jazirah as Safiliyah (25°21'N., 51°35'E.) is a low, sandy islet. Between a sand spit extending off the SW end of the islet and the coast W, the bay is very shallow. Lighted beacons mark a channel between the SW extremity of the sand spit about 2 miles SW of the islet and the shoreline about 0.4 mile farther W. Rocks and reefs lie 1.5 miles SE of the islet.

A bank, with depths of less than 5.5m, extends for 10 miles offshore between Al Aliyah and Ras abu al Mushut. Detached shoal patches are charted as far as 28 miles offshore in the approaches to Ad Dawhah.

Ras abu Abbud (25°17'N., 51°34'E.), a low point, is fronted by shallow reefs and rubble fish traps. The intervening coast between the point and Ras abu al Mushut is fronted by shoals extending E and N for several miles. Ad Dawhah Beacon stands on the edge of the shoals, about 3 miles N of Ras abu al Mushut.

The approach channel to Ad Dawhah Anchorage is dredged across the shoals and leads close N of the beacon.

Ras an Nisah (25°17'N., 51°33'E.) is a low, rocky projection with numerous buildings nearby.

Ad Dawhah (Doha) (25°17'N., 51°32'E.)

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15.48 Ad Dawhah, the principal commercial port in Qatar, lies between the parallels of 25°27'N, and 25°21'N, and W of the meridian of 51°40'E, as far as the HW line on the shore.

Winds—Weather.—See paragraph 15.1 for further information.

Tides—Currents.—The spring rise is 1.5m while the neap rise is 1.2m. Tidal currents off the approach channel usually set NNE and SSW with a maximum velocity of 1.5 knots, although rates of up to 3 knots have been reported (1998).

Currents in the vicinity of Ad Dawhah Beacon often set in a direction opposite to that offshore. A strong tidal stream may be experienced on entering the entrance channel. It has been reported that the set is governed by the wind direction at the time.

Ad Dawhah Light Float

Depths—Limitations.—As previously stated, shoals and shoal patches encumber the entrance to the port. Shoal patches, with a least charted depth of 3.2m, lie up to 6 miles NE of Ras Abu al Mushut, while a 4.5m patch obstructs the channel about 5 miles ENE of the same point. Once within the fronting shoals, the harbor basin shows general depths of 6.1 to 12.2m, but shoals extend up to 0.8 mile off the port's shores.

Ad Dawhah Entrance Channel, 107m wide, and with a least depth of 10m in 2005, leads from seaward across the fronting shoals mentioned above.

A dredged channel, with a depth of 8.5m, leads N of the Container Terminal to the Flour Mill Terminal, which has an alongside depth of 10m.

The main berths are located along a T-headed jetty extending NE from Ras an Nisah. A causeway extending NE from the N end of the T-head connects to the container terminal. Berth information is given in the accompanying table titled **Ad Dahwah (Doha)—Berth Information**.

The main berths are approached by a channel dredged to a depth of 12m in 2002.

It has been reported (2007) that all commercial operations, with the exception of ferries and cruise ships, will eventually be transferred to the new port facilities, to be known as Doha New Port, being constructed S of the Entrance Channel. It has also been reported (2008) that construction on these new facilities will begin by the end of 2009 and will be completed by 2014.

Shell Company Jetty, with an alongside depth of 5.5m, extends from the shore about 0.3 mile SW of Ras abu Abbud.

Several other small craft piers extend from the shore, with alongside depths of 4m and less.

A small naval harbor is charted about 0.5 mile NE of Ras abu

Abbud.

General cargo vessels with a maximum length of 220m and a maximum beam of 32.5m can be accommodated. Car carriers and livestock carriers with a maximum length of 200m and a maximum beam of 32.5m can be accommodated but are only allowed to transit the entrance channel during daylight hours.

An underkeel clearance of 1m should be allowed for when maneuvering in the channel.

Ad Dahwah (Doha)—Berth Information				
Berth	**Length**	**Depth**	**Maximum draft**	**Remarks**
No. 1	181m	8.6m	8.5m	General cargo.
No. 2	181m	8.5m.	8.5m	General cargo.
No. 3	181m	7.5m	8.5m	General cargo.
No. 4	181m	8.6m	8.5m	General cargo.
No. 5	200m	7.3m	8.5m	General cargo.
No. 6	215m	7.3m	7.0m	General cargo.
No. 7	190m	7.3m	7.0m	General cargo.
No. 8	190m	7.3m	7.0m	General cargo.
No. 9	190m	7.3m	7.0m	General cargo.
No. 10	300m	11.6m	9.5m	Container terminal.
No. 11	300m	11.6m	9.5m	Container terminal.
No. 12	180m	10.0m	8.5m	Flour Mill Terminal. Can accommodate vessels with a maximum beam of 28.5m.

Aspect.—The S and W sides of the bay containing Ad Dawhah consist of low undulating desert rising to elevations of 12 to 15m a few miles inland. There is a considerable area of reclaimed land, on the W side of the bay, NW of the port.

The Sheraton Hotel, a prominent pyramid-shaped building stands about 2 miles NW of the port area. A building, of similar construction but smaller than the former, stands close N.

A power station, with several conspicuous chimneys, stands close W of Ras abu Abbud, while a conspicuous hotel stands 0.6 mile SW of the same point.

Several water towers are visible within the port area; those which are conspicuous stand about 2 miles SW and 3.5 miles W of Ras abu Abbud.

The Ruler's Palace, a large flat square building, stands 2.5 miles W of the point; a large minaret, lit at night, stands close SE of the structure.

A conspicuous radio mast stands on the NE corner of a fort located 1 mile NW of the palace. A conspicuous lattice radio mast surmounted by two spheres, 25m in height, stands near the coast 1.5 miles SE of Ras abu Abbud.

Pilotage.—Pilotage is compulsory for all vessels, except for naval vessels, with drafts of over 4m. Pilots should be ordered through Port Control 2 hours prior to arrival at the pilot boarding position. The pilot boards near Ad Dawhah Light Float, although it has been reported (2008) that pilots may board within the dredged approach channel.

Regulations.—An arrival notice should be sent to the Port Authority, either directly or through the vessel's agent, at least 24 hours prior to arrival at the pilot boarding position. The exact time of arrival should be confirmed at least 2 hours prior to arrival, or when within VHF range, on VHF channel 14 or 16.

Special regulations for night navigation of vehicle carriers and livestock carriers are in effect, as follows:

1. Vessels 180m long and greater—Maximum wind speed of 15 knots, maneuvering speed not less than 12 knots, visibility not less than 1 mile, radars in good condition, and fitted with a bow thruster.
2. Vessels less than 180m long—Maximum wind speed of 20 knots, maneuvering speed not less than 12 knots, visibility not less than 1 mile, and radars in good condition.

The Qatari flag shall be flown from the foremast at all times. Quarantine signals should be displayed until the vessel has been cleared.

Contact Information.—Port contact information is listed in the table titled **Ad Dahwah (Doha)—Contact Information**.

Ad Dahwah (Doha)—Contact Information		
	Doha Pilot	**Doha Port**
Call sign	Doha Pilot	Doha Port Control
VHF	VHF channels 13, 14, and 16	VHF channels 13, 14, and 16
Telephone	974-44457294	974-44030294
	974-44434377	974-44030295
Facsimile	974-44457295	974-44030296
E-mail	—	marine.services@mwani.com.qa

Anchorage.—Anchorage Area B, off the harbor, is available

for vessels with a draft of less than 8m, in charted depths of 11.3 to 15.2m, about 6 miles E of Ras abu Mushut. Vessels with a draft greater than 8m can anchor in charted Anchorage Area A, in charted depths of 12.1 to 25.7m. Inside the harbor, anchorage sheltered from NE winds may be taken about 2 miles N of Ras abu Abbud, in depths of 6 to 7m, over a bottom of mud and sand, good holding ground.

Directions.—Keeping to depths of not less than 11m, steer as safe navigation permits for a position about 10 miles E of Ras Abu al Mushut; then steer to pass close S of **Ad Dawhah Light Float** (25°17'N., 54°42'E.).

After embarking the pilot, continue on a W course until the outer lighted beacon marking the dredged channel bears NW; then steer for the channel entrance.

Ad Dawhah—Palm Island

Caution.—Dredging operations have begun (2005) in the vicinity of and S of the Entrance Channel in support of the construction of the new international airport and new port facilities. Access channels only to be used by dredges involved in the project are marked by lighted buoys. Mariners are requested to proceed with caution in these areas.

An obstruction, with a least depth of 5m, lies about 1.3 miles SW of the NE corner of Anchorage Area A.

It has been reported (2008) that some navigational aids in the approach to Doha may be missing or not as charted. Mariners are advised to contact the port authority for updated information.

Caution is necessary as many aids to navigation in the approaches to Doha have been renamed (2009).

Jazirat Halul (25°41'N., 52°25'E.)

World Port Index No. 48295

15.49 Jazirat Halul is hilly and barren. The island is reef fringed for at least 0.5 mile and shoals extend 0.5 mile farther NE and NW. Depths in the vicinity of Jazirat Halul give little warning of its proximity. Tide rips appear around the island, especially off its S side. Irregular soundings, wells, and detached shoals lie as far as 30 miles offshore N through E to S.

The presence of oil drilling rigs and their associated structures, flares, obstructions, and submarine pipelines within oil field areas, is cause for caution in and within the vicinity of oil fields as shown on the charts. Jazirat Halul is a good radar target under normal conditions at 13 miles distant.

Winds—Weather.—See paragraph 15.1 for further information.

Tides—Currents.—The flood current sets SSW while the ebb current sets NNE; rates of up to 2 knots can occur.

Tide rips occur off the island, particularly off its S side.

Depths—Limitations.—There are two offshore oil-loading berths. They consist of SBM1 and SBM2, both single buoy moorings, lying 2 miles and 3 miles off the SE coast of the island. In general, SBM1 will accept vessels of 540,000 dwt, with a maximum length of 420m and a maximum draft of 22m, although under certain circumstances a draft of 25m can be accommodated. SBM2 will take vessels of the same tonnage, with a maximum length of 420m and a maximum draft of 29m.

There are no facilities for dry cargo vessels; oil terminal supplies are brought in by Shell Company supply vessels to a boat harbor on the SE side of the island. The harbor has a 61m pier,

with a depth of 3.4m alongside, protected by rubble breakwaters, from which lights are shown.

Aspect.—The island rises to a hilly elevation of 67m, from which a light is shown. A group of oil tanks stands S of the light; a second group stands on the high ground N.

Southeast of the light there are administrative and accommodation buildings and a mosque. Near the SW end of the island there is a small meteorological station.

As Dawhah—Harbor Control Tower

Pilotage.—Pilotage is compulsory for vessels proceeding to the loading berths and may be obtained in the vicinity of Lighted Buoy H1, about 1.4 miles NE of SBM2.

If, due to adverse weather conditions or other circumstances the normal boarding ground cannot be adhered to, the pilot launch will arrange, via VHF, to meet the vessel at an appropriate place.

The pilot can be contacted, as follows:

1. Telephone: 974-44403400
   974-44403775
2. Facsimile: 974-44403456
3. E-mail: halulpilot@qp.com.qa

Regulations.—Vessels are required to send their ETA at Jazirat Halul, plus select information, at least 72 hours in advance, confirming 24 hours prior to arrival. The ETA should also be confirmed 6 hours in advance on VHF channel 16 through Halul Radio. The vessel's ETA message should include the following information:

1. Quantity of cargo desired, in metric tons.
2. Loading rate.
3. Deballasting time.
4. Whether the vessel is able to load and deballast concurrently.

Vessels should contact Halul Control when within range on VHF channel 9 for anchoring and pilotage instructions.

Contact Information.—The Port Authority can be contacted, as follows:

1. Telephone: 974-44402072
   974-44402593
2. Facsimile: 974-44293570

Terminal Operations can be contacted, as follows:

1. VHF: VHF channels 9 and 16
2. Telephone: 974-44403537
   974-44403538
3. Facsimile: 974-44403491

Anchorage.—Anchorage can be taken 2.5 miles E of Jazirat Halul in a circular area 1.5 miles wide, with depths of 21 to 25m, sand.

Anchorage is prohibited in the area encompassed by the red sector of Halul Summit Light.

Directions.—Loaded tankers departing Jazirat Halul should steer about 058° from the vicinity of SBM 2, passing S of Lighted Buoy H1 and N of Lighted Buoy H2, and then pass NW of the lighted buoy marking Halul East Shoal, a 12.8m patch lying about 12 miles ENE of Jazirat Halul. Mariners should be careful not to misidentify Halul East Shoal with that of an obstruction (possibly a wreck), marked by a lighted buoy, which lies 2 miles SE of the shoal.

Caution.—Due to the existence of submarine pipelines off Jazirat Halul, the navigation of laden tankers within 3 miles S of the island, or within the vicinity of such pipelines, is prohibited.

Ad Dawhah—Ruler's Palace

Ad Dawhah—Sheraton Hotel

Ad Dawhah—Southeast Jazirat Mishut Beacon

Ad Dawhah—Sector Light

Ad Dawhah—Northwest Jazirat Mishut Beacon

Four oil fields lie SE and S of Jazirat Halul. They consist of Maydan Mahzam (Maydan Mahazam), 8.5 miles ESE; Bu al Hanin (Bul Hanine), 23 miles SE; Idd ash Sharqi, 11 miles SSW; and South Dome, 20 miles SSW. Al Khalij Oil Field lies about 22 miles NE of Jazirat Halul.

The limits of the oil fields are shown on the charts; restricted areas surround the first three fields, as well as Al Khalij. Within each oil field there are numerous oil wells and associated structures, lights, flares, and obstructions. Submarine pipelines are laid within each oil field and connect with Jazirat Halul.

A submarine gas pipeline is laid WSW from Idd ash Sharqi Oil Field to the coast of Qatar. An abandoned oil rig, located about 4 miles S of the oil field, is sunk and marked by a wreck buoy moored 0.3 mile S of the wreck.

15.50 Rostan Oil Field and Rakhsh Oil Field.—Numerous oil drilling rigs, flares, and other obstructions lie within an area known as Rostam Oil Field, about 30 miles NE of Jazirat Halul. Lights and fog signals are shown from platforms in the oil field, which is connected NNE to Jazireh-ye Lavan by a submarine oil pipeline.

Rakhsh Oil Field, 15 miles ENE of Rostam Oil Field, and connected to it by a submarine oil pipeline, is marked by oil drilling rigs and flares. Mariners should not navigate within the charted oil fields and should proceed with caution in their vicinity.

A pipe, which rises from a well head to an elevation of 1.2m, is situated about 15 miles NW of Rakhsh Oil Field.

15.51 The coast for about 10 miles N of Ad Dawhah is mostly stony desert with a few low hills, but farther N the coast becomes sandy and flat.

Dawhat al Wusayl (25°30'N., 51°29'E.), a cove marked by a prominent ruined fort, affords sheltered anchorage to local craft in its shallow waters. A ruined tower 3 miles W of the fort is conspicuous. A submarine cable lands 3 miles N of the cove.

Ras al Matbakh (25°40'N., 51°34'E.) is a point close N of the entrance to Khawr Shaqiq, which has a depth of 1.8m and is frequented by local craft. A village marked by several towers is located on rising ground at the W end of the inlet.

15.52 Ras Laffan (25°55'N., 51°35'E.) (World Port Index No. 48297) is very low, sandy, and marked 2.5 miles W by a conspicuous cairn. The port was built for LNG export shipping.

Ras Laffan Home Page

http://www.qp.com.qa

Depths—Limitations.—Doha Dock, Al-Khor Dock and Inner Harbor are protected by on the N by Main breakwater, 6,000m long, and on the S by Lee breakwater, about 5,000m long The docks are approached through a 5,500m-long entrance channel, which has been dredged to a depth of 15m (2009). The outer part of the approach channel is 400m wide and narrows to a width of 280m in the vicinity of Lighted Buoy

RLN5. Doha Dock and Al-Khor Dock have been dredged to a depth of 13.5m. Inner Harbor has depths of less than 10m. The dredged channel is marked by lighted buoys; range lights lead between the breakwater heads.

Ras Laffan—Liquid Products Jetty (Berth 2A/2B)

Ras Laffan—LNG Berth No. 1

Wakra Dock and Rayyan Dock are located S of Lee Breakwater in an area enclosed on the N by Lee Breakwater and on the S by an L-shaped breakwater extending ENE from the shore. Wakra Dock, on the N, and Rayyan Dock, on the S, are separated from each other by a T-head pier extending E and then ENE from the coast between the roots of Lee Breakwater and the new southernmost breakwater. Wakra Dock and Rayyan Dock have been dredged (2009) to 13.5m and are approached through a 400m-wide channel dredged to a depth of 15m (2009) located S of and parallel to the channel leading to the Doha Dock and Al-Khor Dock.

The dredged channel is marked by lighted buoys; range lights lead between the breakwater heads.

An SPM Condensate Terminal (26°01'N., 52°04'E.) is located ENE of Ras Laffan. A submarine pipeline connects the terminal to Ras Laffan. The terminal consists of two CALM buoys, enclosed by a restricted area, moored about 23 miles ENE of the head of Ras Laffan North Breakwater.

Ras Laffan—Control Tower

Vessels up to 320,000 dwt, with a maximum length of 335m, a maximum beam of 60m, and a maximum draft of 22m, can be accommodated at either berth of the Condensate Terminal.

Detailed berth information is given in the accompanying table titled **Ras Laffan—Berth Information**.

Aspect.—The control tower, 36m high, stands at the N end of the Dry Cargo Berths.

Pilotage.—Pilotage is compulsory for all vessels. However, at the sole discretion of port management, the following vessels can be exempted from mandatory pilotage:

1. Vessels with an loa less than 75m whose master holds a valid Pilotage Exemption Certificate.
2. Supply vessels whose master holds a valid Pilotage Exemption Certificate and are authorized by port management.
3. Tugs operating exclusively within the port area.
4. Qatari military, coast guard, customs, or police vessels.
5. Other vessels which may be exempted by port management.

Pilots should be ordered through the vessel's agent. Pilots for departing vessels and vessels shifting within the port should be confirmed, via the agent, with Ras Laffan Port Control 2 hours in advance.

The pilot boards, as follows:

1. North Channel—about 1.4 miles NE of Fairway Lighted Buoy.
2. South Channel—about 1.3 miles SE of Fairway Lighted Buoy.
3. SPM Condensate Terminal—About 2.3 miles SSE of CALM No. 2.

Pilots can be contacted by e-mail, as follows:

rlcpilots@qp.com.qa

Regulations.—The vessel's ETA messages should be provided 7 days, 72 hours, and 24 hours prior to arrival to Ras Laffan Port Authority via the agent. Changes to the ETA of 4 hours or more should be reported during the final 24 hours before arrival. Vessels should contact Ras Laffan Port Control on VHF channel 12 or 16 when within 6 hours of arrival.

All movements within the port are controlled by Ras Laffan Port Control using VHF channel 12. All vessels must contact Ras Laffan Port Control on VHF channel 12 prior to entering, leaving, or maneuvering within the port area.

The dredged channel is subject to one-way navigation. All movements within the dredged channel and the deep-water basin are prohibited during the entry/departure of vessels bound to/from any berth in the deep-water basin. Ras Laffan Port Control will promulgate the movements of such vessels, on VHF channel 12, about 30 minutes prior to the intended time of the vessel entering/departing the dredged channel.

Routine navigation warnings and weather forecasts may be obtained from Ras Laffan Port Control, upon request, on VHF channel 12. Non-routine/urgent navigation warnings will be broadcast as soon as received and will be repeated every hour on the hour for the following 3 hours.

Contact Information.—Ras Laffan Port Operations (Port Manager) can be contacted, as follows:

1. Telephone: 974-44733225
2. Facsimile: 974-44293662
3. E-mail: raslaffanport@qp.com.qa

Ras Laffan Port Control can be contacted, as follows:

1. Call sign: Ras Laffan Port Control
2. VHF: VHF channels 12 and 16
3. Telephone: 974-44733200
974-44733201
4. Facsimile: 974-44293686
5. E-mail: rlcportcontrol@qp.com.qa

Ras Laffan—Berth Information

Berth	Wharf length	Vessel length		Maximum vessel size	Maximum vessel draft	Remarks
		Minimum	Maximum			
Doha Dock						
LNG No. 5	390m	216m	345m	186,000 dwt	12.5m	—
LNG No. 6	390m	216m	345m	—	12.5m	—
Al-Khor Dock						
LNG No. 1	330m	170m	315m	105,000 dwt	12.5m	—
LNG No. 2	330m	170m	305m	105,000 dwt	12.5m	—
LNG No. 3	390m	216m	345m	256,250 dwt	12.5m	—
LNG No. 4	390m	216m	345m	256,250 dwt	12.5m	—
Liquid Berth 20	345m	160m	345m	152,000 dwt	12.5m	Previously designated as Liquid Berth 1A
Liquid Berth 21	345m	160m	345m	152,000 dwt	12.5m	Previously designated as Liquid Berth 1B
Liquid Berth 22	345m	160m	345m	300,000 dwt	12.5m	Previously designated as Liquid Berth 2A
Liquid Berth 23	345m	160m	345m	300,000 dwt	12.5m	Previously designated as Liquid Berth 2B
Liquid Berth 24	370m	160m	345m	152,000 dwt	12.5m	Previously designated as Liquid Berth 3A
Liquid Berth 25	370m	160m	345m	152,000 dwt	12.5m	Previously designated as Liquid Berth 3B
Container Berths 101-103	600m	—	180m	60,000 dwt	12.5m	Dry cargo
Inner Harbor						
Berth 104	210m	—	180m	21,500 dwt	7.5m	Heavy lift and ro-ro
Berth 105	173m	—	160m	21,500 dwt	8.5m	—
Berth 106	173m	—	160m	21,500 dwt	8.5m	—

Ras Laffan—Berth Information						
Berth	Wharf length	Vessel length		Maximum vessel size	Maximum vessel draft	Remarks
		Minimum	Maximum			
Berth 107	135m	—	122m	21,500 dwt	4.7m	Ro-ro
Port Maintenance Berths 1-4	270m	—	—	—	5.3m	Tug berths
Offshore Berth A	70m *	—	70m	—	4.7m	—
Offshore Berth B	70m *	—	70m	—	4.7m	—
Offshore Berth C	87m *	—	70m	—	4.5m	—
Offshore Berth D	64m *	—	70m	—	4.5m	—
Offshore Berth E	64m *	—	—	—	3.5m	—
Offshore Berth F	65m *	—	—	—	3.0m	—
New Service Berth 1	73m *	—	—	—	6.5m	Supply vessels
New Service Berth 2	84m *	—	—	—	6.5m	Supply vessels
New Service Berth 3	72m *	—	—	—	6.5m	Supply vessels
New Service Berth 4	72m *	—	—	—	6.5m	Supply vessels
New Service Berth 5	79m *	—	—	—	6.5m	Supply vessels
New Service Berth 6	53m *	—	—	—	6.5m	Supply vessels
New Service Berth 7	48m *	—	—	—	6.5m	Supply vessels
New Service Berth 8	75m *	—	—	—	6.5m	Supply vessels
Aggregate Berth	105m	—	—	—	6.5m	—
* Nominal lengths. May not be available depending on vessels berthed at adjacent berths.						
Wakra Dock						
Liquid Berth 30	—	—	345m	—	12.5m	Under construction
Liquid Berth 31	—	—	345m	—	12.5m	Under construction
Container Berth 121	—					Under construction
Container Berth 122	—					Under construction
Container Berth 123	—					Under construction
Rayyan Dock						
Dry Dock	Under construction in 2011					

Anchorage.—Anchorage Area No. 1, the Western Anchorage, is centered on position 25°57'N, 51°41'E; the anchorage area is closed until further notice due to its proximity to dredging and dumping operations.

Anchorage Area No. 2, the Eastern Anchorage, is sub-divided into 21 anchor berths allocated by the port authority and is bounded by lines joining the following positions:

a. 25°55'N, 51°45'E.
b. 25°55'N, 51°48'E.
c. 25°48'N, 51°45'E.
d. 25°48'N, 51°48'E.

A waiting area for vessels loading at the SPM Condensate Terminal lies about 7 miles E of CALM No. 2 and is bounded by lines joining the following positions:

a. 26°02.5'N, 52°11.5'E.
b. 26°00.9'N, 52°11.5'E.
c. 26°00.9'N, 52°13.3'E.
d. 26°02.5'N, 52°13.3'E.

Caution.—The coastal bank, with depths of less than 5.5m, and on which lie numerous drying patches, extends from 2 to 15 miles offshore between Ad Dawhah and Ras Laffan. Detached shoal patches are charted E of the coastal bank.

Vessels with a draft of more than 3.6m should not proceed inside the 10m curve.

Two lighted platforms, both surrounded by restricted areas best seen on the chart, stand about 40 miles NNE of Ras Laffan. The NW platform is connected to Ras Laffan by a submarine gas pipeline.

Vessels are advised to approach the port only from the position of Fairway Lighted Buoy and to contact port authorities

for further information.

It has been reported (2009) that aids to navigation in the harbor and its approaches may be different than charted.

Extensive reclamation works are in progress in an area extending up to 1.5 miles N and 1 mile E of Main Breakwater. Vessels must maintain a minimum distance of 2 miles from the dredging and reclamation operations.

15.53 Al Shaheen Oil Field and Terminal (26°35'N., 52°00'E.) (World Port Index No. 48298) is composed of a lighted platform and two permanently-moored floating storage and offloading (FSO) tankers located about 1.75 miles SW and 1.75 miles E, respectively, of the platform.

Winds—Weather.—Winds are predominantly from the NW.

Tides—Currents.—The prevailing current is SE at speeds usually no greater than 2 knots.

Depths—Limitations.—Vessels up to 500,000 dwt can be accommodated.

Pilotage.—Pilotage is compulsory. The pilot boards in the circular anchorage area located about 4 miles SE of the lighted platform.

Regulations.—Vessels should send their ETA to Maersk Oil Qatar AS (the terminal operator) and Al Shaheen Terminal 7 days, 5 days, 72 hours, 48 hours, and 24 hours prior to arrival; any changes to the ETA of more than 3 hours should also be reported.

The 7-day ETA message should be sent to Maersk Oil Qatar by e-mail and/or facsimile.

Contact should be made with the FSO on VHF channel 69 when within range. The FSO will advise the vessel of the appropriate working channel.

Safety zones extend a distance of 1,500m from the center position of each SPM and 500m from the outer edges of each platform. Protective zones, in which anchoring is prohibited, extend 200m on either side of interfield pipelines. Vessels intending to approach the terminal must obtain permission from Maersk Oil Qatar prior to entering these safety zones unless a Maersk Oil Qatar representative (mooring master, terminal supervisor) is on board.

Contact Information.—Maersk Oil Qatar, the terminal operator, can be contacted, as follows:

1. Telephone: 974-4963963
   974-66842669 (Marine Duty)
   974-55518058 (Oil Export Duty)
2. Facsimile: 974-4963409
3. E-mail: doh-shaheen@maerskoil.com

Contact information for the FSO tankers can be found in the table titled **Al Shaheen FSOs—Contact Information**.

Al Shaheen FSOs—Contact Information		
	FSO Asia	**FSO Africa**
Call sign	Al Shaheen Terminal (V7QR6)	Al Shaheen Terminal (V7IJ5)
VHF	VHF channel 69	VHF channel 69
Telephone	974-44012800	974-44012820
E-mail	doh-shaheen@maerskoil.com	doh-shaheen@maerskoil.com

Anchorage.—A charted circular anchorage area is located about 4 miles SE of the lighted platform.

Caution.—Vessels are advised not to transit through Al Shaheen North Field (Bravo) Gas Field when enroute to the anchorage area. Other oil fields and gas fields lie in the vicinity of Al Shaheen Oil Field and Terminal and are best seen on the chart.

Two additional SPMs have been established, as follows:

1. SPM 3—Position 26°38.1'N, 51°53.5'E.
2. SPM 4—Position 26°40.3'N, 51°53.9'E.

15.54 Al Rayyan Oil Field and Terminal (26°39'N., 51°33'S.) (World Port Index No. 48300), about 22 miles WNW of Al Shaheen Oil Field and Terminal, consists of a production platform and the floating storage tanker FSO Falcon Spirit. Vessels up to 320,000 dwt, with a maximum length of 310m and a maximum draft of 21m, can be accommodated, although it has been reported that the maximum vessel size accepted is only 270,000 dwt. A second SPM, connected to the production platform by a submarine pipeline, is located about 1 mile SW of the storage tanker.

Pilotage is available but not compulsory; pilots board in position 26°41.0'N, 51°39.0'E about 2 miles NE of the production platform.

Berthing is allowed during daylight hours only; unberthing occurs 24 hours.

Vessels send their ETA to Occidental Qatar Energy Company (OQEC) Doha Office and OQEC Terminal as soon as possible but not later than 72 hours, 48 hours, and 24 hours in advance, regardless of whether the vessel may still be at a previous loading port. All communications and ETA messages should refer to local time. The contact information is given in the table titled **Al Rayyan—Contact Information**.

Vessels should contact the FSO on VHF channel 72 when within range. Once contact has been established, the terminal will request the vessel to maintain a listening watch on VHF channel 72.

An area extending 1 mile from the production platform and the storage tanker is closed to fishing vessels and commercial shipping.

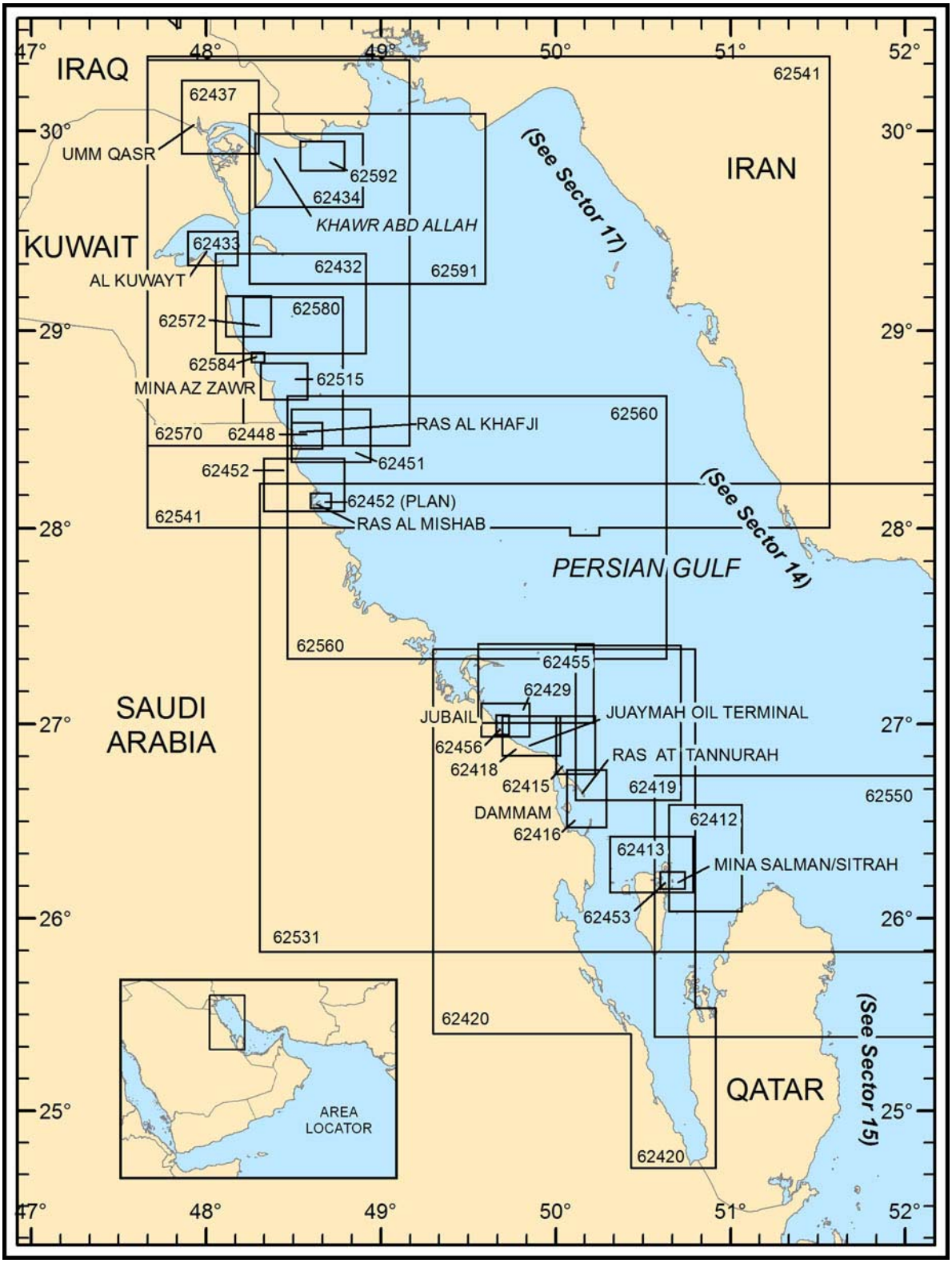
15.55 Between Ras Laffan and Ras Rakan, about 24 miles NW, there are no off-lying dangers, except off the latter point. Sheltered anchorage can be taken by local craft in a small bay at position 25°57'N, 51°25'E.

Ras Umm Hasah (26°06'N., 51°21'E.) is a high rocky hill-

ock. Al Mafjar, a village, is visible before Ras Rakan on a NE approach.

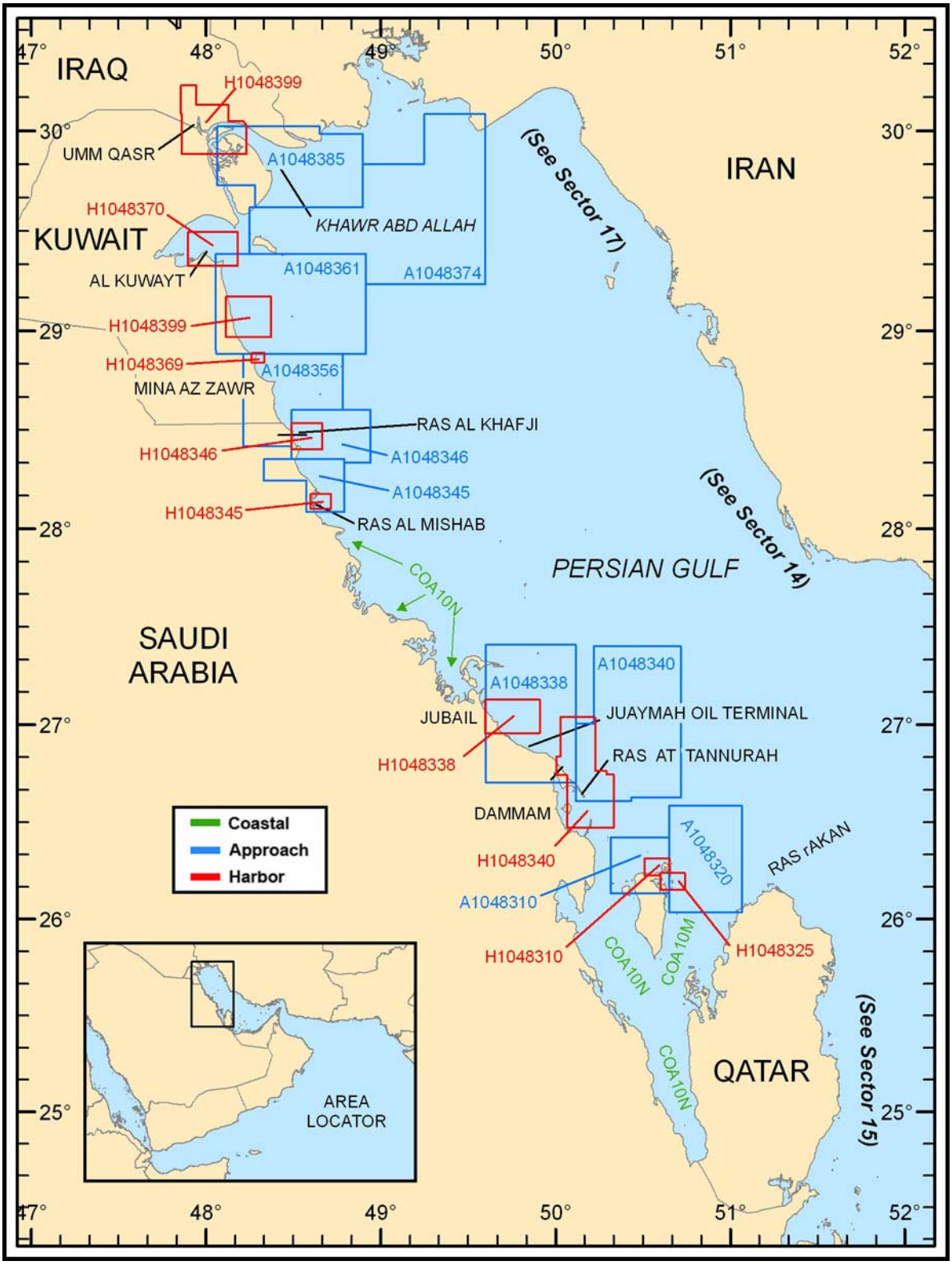
Caution.—Anchorage is not recommended within the area extending up to 50 miles offshore between Ras Laffan and Ras Rakan due to the existence of numerous well heads, gas fields, platforms, buoys, wrecks, and pipelines within the area.

Al Rayyan—Contact Information			
	OQEC Terminal	**OQEC Doha Office**	**FSO Falcon Spirit**
Call sign	—	—	Al Rayyan Marine Terminal (C6XZ9)
VHF	—	—	VHF channels 16 and 72
Telephone	974-4459551	974-44459507	870-773204060 (INMARSAT)
Facsimile	974-4459565	—	870-783020180 (INMARSAT)
Telex	—	—	583-453834623 (INMARSAT C)
E-mail	ois_al-morjan@oxy.com	—	master.falcon@teekay.com
	radio_al-morjan@oxy.com	—	



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **16** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 10 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 16 — DNC LIBRARY INFORMATION

SECTOR 16

THE PERSIAN GULF—QATAR, BAHRAIN, SAUDI ARABIA, KUWAIT, AND IRAQ—RAS RAKAN TO KHAWR ABD ALLAH

Plan.—This sector describes the SW side of the Persian Gulf. The sequence of description is NNW from Ras Rakan.

General Remarks

16.1 An IMO-adopted Traffic Separation Scheme (TSS) lies within the waters covered by this sector and may best be seen on the chart.

Several offshore oil fields, some lying within charted limits or restricted areas, are present in the waters covered by this sector. Unauthorized vessels should avoid entering these restricted areas.

Vessels should navigate with extreme caution within or near such oil fields, as numerous hazards to navigation, charted and uncharted, lie both above and below-water here.

The coast between Ras Rakan and Khawr Abd Allah, about 260 miles NNW, is a low, sandy desert with a few small hills and very little vegetation. The S section of this coast is indented by a large bay, the approaches to which are encumbered with shoals, reefs, and the large island of Al Bahrayn. Because of these obstructions, the shallow waters of this indentation of the coast are avoided by all vessels except small native craft and shallow-draft barges. However, large vessels can reach the oil loading facilities at Ras Tannurah, Ad Dammam, and Sitrah through narrow deep-water channels.

The coast NW of Ras Tannurah to Al Kuwayt is indented by numerous small shallow bays enclosed by low sandy spits.

The approaches are encumbered by many reefs, some of which are unsurveyed. Channels lead into the oil loading terminals at Ras al Mishab, Al Fuhayhil, and several smaller terminals.

The coast N of Al Kuwayt is indented by Kuwait Harbor, the best anchorage in the W part of the Persian Gulf. The large marshy Jazirat Bubiyan, NE of Kuwait Harbor, is fronted by an extensive shoal.

With the exception of the oil terminals and a few towns, this section of the coast is not visited except by local craft.

Winds—Weather.—The prevailing wind along this section of the coast is from NW. On relatively calm mornings the wind may follow the contours of the coast, resulting in an increase of W winds along the S part of the coast.

For more detailed descriptions of the winds and weather along this coast, see the various parts of this sector pertaining to a specific place.

Tides—Currents.—The general current circulation along this coast is SE at less than 1 knot for most places. The currents are not uniform in nature or pattern; therefore, the particular area in question should be referred to for local conditions.

Caution.—It has been reported that some charted oil production platforms in the Persian Gulf may have been removed. In many cases, all that remains of the platforms are pipes extending from 3.1 to 6.1m above the surface; these pipes do not show up well on radar and are a hazard to navigation.

A Mine Danger Area (MDA) and several Former Mine Danger Areas, best seen on the chart, are located in the area covered by this sector. Mariners are warned that a greater mine threat exists within an MDA and no swept routes have been established in this area.

In a Former Mine Danger Area, mines could still present a hazard. Anchoring, fishing, or sea bed operations are not recommended anywhere within these areas. However, when anchoring is necessary, it should be carried out only within the designated anchorage areas, as directed by local authorities.

Caution is also necessary as drifting mines may be encountered anywhere.

Qatar—West Coast

16.2 **Ras Rakan** (26°11'N., 51°13'E.), the NW extremity of a low sandy islet which lies about 2 miles off the N end of Qatar, is marked by a light. Drying reefs lie between the islet and mainland. The coast SW of Ras Rakan forms the E side of Dawhat Salwa, an extensive bay.is entered between **Ras as Sauwad** (25°36'N., 50°48'E.) and **Ras Sayyah** (25°37'N., 50°16'E.). The coast of Saudi Arabia N of Ras Sayyah is described beginning in paragraph 16.10.

Al Rayyan (26°39'N., 51°33'E.) is an oil terminal located approximately 35 miles off the N coast of Qatar. The terminal consists of a storage tanker moored to an SPM buoy. The depth at the terminal is 27m. Vessels up to 270,000 dwt can be accommodated.

The pilot is also the loading master after the vessel is moored. The ETA messages should be sent 72 hours, 48 hours, and 24 hours in advance of arrival to the terminal operator. When within range contact should be made on VHF channel 16. The pilot normally boards 3 miles SE of the terminal. In rough weather the pilot may board by helicopter.

The anchorage is 3 miles SE of the terminal and offers a depth of 25m.

The island of Al Bahrayn lies in the entrance of Dawhat Salwa and is described beginning in paragraph 16.4. Reefs extend from the E side of Al Bahrayn to within 5 miles of the W coast of Qatar. To the S of the island and reefs, the bay has not been completely surveyed, but it is reported to be encumbered with reefs and shoals.

It has been reported (2008) that construction will begin in early 2009 on a 40-mile long causeway connecting the NW coast of Qatar with the SE coast of Bahrain. The project is scheduled for completion in 2011.

It has been reported (2009) that construction of the Qatar-Bahrain Causeway, connecting the NW coast of Qatar with the SE coast of Bahrain, is scheduled to begin in 2010. The structure will consist of 18km of embankments built in shallow water and 22km of viaducts and bridges built in deeper water, including two 400m-long cable-stayed bridges over deep-water shipping channels. It is estimated that construction will take

4.5 years to complete.

16.3 Ras Ushayriq (Ras Shayrij) (25°59'N., 51°00'E.) lies about 17 miles SW of Ras Rakan. The intervening coast is low and so light in color that it is difficult to distinguish, especially in the prevailing haze.

Partly-drying reefs fringe this coast and a shoal bank extends about 20 miles NW to the approach channels to Sitrah Anchorage and Al Manamah.

The coast affords difficult landing and is sparsely populated. Much of the foreshore of the coast is flooded at HW springs. Ras Ushayriq is low and rocky, with a conspicuous minaret and water tower. A pier extends 91m offshore.

Reefs and shoals extending E from Al Bahrayn join a shoal bank, with depths of 3.7 to 5.5m, extending W from the point. Zubarah Fort, about 3 miles E of Ras Ushayriq, is a conspicuous building with four towers.

Anchorage can be taken, in a depth of 5.8m, about 7 miles NW of the point.

Ras Dukhan (25°31'N., 50°47'E.) is the W point of a shallow inlet. There are several islands and islets lying within 14 miles of the point. Beacons mark the N end of the islets.

From Ras Dukhan, the coast trends S about 46 miles to the head of Dawhat as Salwa.

The coast SW of Ras Rakan forms the E side of Dawhat Salwa, an extensive bay. The island of Al Bahrayn lies in the entrance of the bay. Reefs extend from the E side of Al Bahrayn to within 5 miles of the W coast of Qatar. To the S of the island and reefs, the bay has not been completely surveyed, but it is reported to be encumbered with reefs and shoals.

The E side of Dawhat as Salwa consists of sandy shores rising to sand hills. The W side of the inlet is indented by several small bays separated by headlands consisting of sand dunes.

Anchorage off **Ras Uwayqil** (25°09'N., 50°34'E.) can be taken, in a depth of 6.1m. Landing in the vicinity is good.

Bahrain—East Coast

16.4 Al Bahrayn (26°05'N., 50°33'E.) is the principal island in an archipelago of islands, including Al Muharraq and Sitrah, which together form the independent Sovereign Arab State of Bahrain. Al Bahrayn, about 35 miles W of Ras Rakan, has low coasts and is uncultivated except for a belt of fertile land that is along the N end.

From a position about 4 miles S of the N coast, a rocky tableland extends S for several miles and stretches across the island from side to side in a series of small cliffs. Al Bahrayn is reported to give good radar returns up to 25 miles distant.

Jabal ad Dukhan (26°02'N., 50°33'E.) is a small compact group of dark hills rising midway between the E and W coasts.

The hills are usually the first objects seen when approaching the island. Oil tanks and water tanks on the hills and at Al Awali, 3 miles N, are prominent.

Winds—Weather.—The shamal reaches gale force at intervals but raises little or no ground swell at most of the moorings in Al Bahrayn; however, a short choppy sea makes up and is bothersome for small vessels.

Tides—Currents.—From Ras Rakan, the tidal currents set S along the coast. The currents are felt everywhere on Great Pearl Bank, especially near the reefs and islands.

The edge of the bank extends WNW from a position about 35 miles NE of Ras Rakan. There are overfalls in places on the bank.

Off Al Bahrayn, and among the off-lying reefs, the tidal currents are very irregular and are much affected by the wind, but usually follow the trend of the reefs. At springs, the currents attain a velocity of 1 to 3 knots.

Jazirat al Muharraq (26°16'N., 50°38'E.), low and sandy, has conspicuous groves of date palms and several villages along its coasts. Reefs, extending up to 3.5 miles offshore in places, fringe the island on all sides.

The reef extending S from the island terminates in **Qassar Diwan** (26°11'N., 50°40'E.), a rock about 0.3m high. There is a ship repair yard (Arab Shipbuilding and Repair Yard) and drydock on the S end of the reef, NE of Qassar Diwan.

A causeway extends about 4 miles SSE of Jazirat al Muharraq. It is fronted by a coastal bank with depths of less than 5m.

A lighted buoy, with a racon, marks the limit of the shoal area extending SSE of Jazirat al Muharraq.

Qassar Khusayfah (26°18'N., 50°37'E.) is a low islet lying on the reef N of Jazirat al Muharraq.

16.5 Qalali (26°16'N., 52°39'E.), a village on the NE extremity of Jazirat al Muharraq, has several prominent towers associated with the airport SW of the village. Samahij, Al Dayr and Rayya are three villages on the N coast of the island.

Al Muharraq (26°15'N., 50°37'E.), a large town at the SW end of Jazirat al Muharraq, is connected to Al Manamah, on Al Bahrayn, by a stone causeway and a fixed bridge carrying a road. The bridge, with a vertical clearance of 4.6m, spans the deepest part of a boat channel.

The ruins of Abu Mahir, a fort with one large and three small towers, stands on a low spit at the S end of town.

The Quarantine Station and a minaret stand close N of the fort.

Al Hadd (26°14'N., 50°39'E.), a town located at the SE extremity of the island, is prominent when approaching from the E. A water tower in the town is conspicuous.

Sitrah (26°09'N., 50°37'E.), an island, lies close off the NE coast of Al Bahrayn. There are a few settlements among the date palms on the N side of the island. Two piers, one a T-head pier with a depth of 12m alongside, extend from the causeway which originates off the SE side of Sitrah.

About 0.5 mile SW of the S extremity of Sitrah, and on the E side of Al Bahrayn, is a concrete pier extending 0.4 mile SE, in a depth of 3.7m.

An oil refinery, oil tanks, and a high chimney are conspicuous about 1 mile inland from the root of the pier.

Sitrah Causeway, extending about 3 miles ENE from the E side of Sitrah, terminates at Sitrah No. 2 Oil Loading Wharf. The causeway carries a road and oil pipelines. A conspicuous water tower, marked by red lights, stands 1.5 miles NW of the root of the causeway. South of the oil tank farm there are a few scattered villages, but mostly the coast is barren and uninhabited.

The channel separating Sitrah from Al Bahrayn is very shallow and is spanned by a road bridge, which also carries oil pipelines from the Al Bahrayn refinery to the oil-loading piers.

Sitrah (Sitra) (26°10'N., 50°40'E.)

World Port Index No. 48320

Mina Salman (Sulman) (26°12'N., 50°38'E.)

World Port Index No. 48325

Khalifa Bin Salman (26°15'N., 50°45'E.)

World Port Index No. 48327

16.6 Sitrah Oil Terminal; Mina Salman, a dry cargo port; and Khalifa Bin Salman, a container/multi-purpose/ro-ro/passenger port, constitute the main berthing facility for the State of Bahrain.

General Organization of Seaports Bahrain Home Page

http://www.mtt.gov.bh/en

Winds—Weather

Usually pleasant weather is experienced from November to March, while hot and humid conditions occur from April to October. The prevailing winds here are from the NW.

Strong wind gusts may occur with no prior warning.

Tides—Currents

Mean HWS rise 2.4m at Mina Salman, while it rises 2.1m at Sitrah. Mean LWN rise 1.0m at Mina Salman and 0.8m at Sitrah. Off Al Bahrayn, tidal currents are affected by the wind, but generally follow the trend of the reefs, attaining rates as great as 3 knots.

East of Jazirat al Muharraq, the tidal currents generally set N and S. Caution is advised near **Fasht al Dibal** (26°16'N., 50°57'E.), as the W tidal current sets S in the vicinity of the reef. Transiting vessels should keep well to the N.

Currents in the entrance to Khawr al Qulayah are strong, sometimes reaching 4 knots. Due to recent port development, currents may be greater than expected.

Southwest currents, with speeds of 1 to 2 knots, have been experienced (2015) between Bahrain Lighted Buoy and Sitrah Lighted Buoy.

Strong tidal currents of up to 1.5 to 2.0 knots have been reported (2007) off Khalifa Bin Salman.

Depths—Limitations

Two fairways are available to vessels approaching Sitrah and Mina Salman. Vessels drawing less than 9.1m use an alternate fairway, while more deeply-laden vessels use Deep Draft Channel. Vessels drawing up to 12.2m may use Deep Draft Channel at any time, while those drawing up to 13.4m will be governed by the state of the tide. The Deep Draft Channel has a minimum width of 260m (slightly wider in the turns) and was reported to be dredged (2009) to a depth of 15m; however, it has been reported (2012) that hard bottom sediments limited the dredging to a depth of only 13m, with some shallow areas having depths of as little as 11.4m.

Hayr Shutaya (26°35'N., 50°48'E.), an extensive shoal with a least depth of 7.9m, obstructs the seaward approaches to the entrance channels. Shoal patches, with a least charted depth of 9.6m, lie up to 2.5 miles S of the shoal. An extensive artificial reef has been constructed NW of Hayr Shutaya, as best seen on the chart. On the E side of the approach channel, the 10m curve encloses most of the dangers, but several shoal patches, with depths between 5.5 and 9.8m, lie up to 7.5 miles N through W of Fasht al Dibal.

Foul ground E of Jazirat al Muharraq extends to within 0.3 mile of the track, about 6 miles E of the island.

Sitrah—Berthing Facilities

Berth	Depth alongside	Maximum vessel			Remarks
		Size	Length	Sailing draft	
BAPCO Oil Terminal—No. 1 Island Wharf					
Berth No. 5	14.0m	110,000 dwt	274m	12.8m	Outer face.
Berth No. 6	13.3m	110,000 dwt	274m	12.8m	Inner face.
BAPCO Oil Terminal—No. 2 Wharf (BAPCO Wharf)					
Berth No. 1	12.8m	80,000 dwt	250m	12.3m	Outer face. Underkeel clearance of 0.7m is required.
Berth No. 2	12.9m	80,000 dwt	250m	12.3m	Outer face. Underkeel clearance of 0.7m is required.
Berth No. 3	11.9m	34,000 dwt	171m	10.3m	Inner face. A maximum sailing draft of 10.9m can be accommodated under suitable conditions. Underkeel clearance of 0.7m is required.

Sitrah—Berthing Facilities					
Berth	Depth alongside	Maximum vessel			Remarks
		Size	Length	Sailing draft	
Berth No. 4	11.9m	25,000 dwt	160m	10.3m	Inner face. Underkeel clearance of 0.7m is required.
BAPCO Oil Terminal—Coastal Tanker Berth					
Berth No. 7	5.5m	—	73m	4.88m	Vessels over 73m long but less than 79.2m long, with a maximum draft of 4.2m, can be berthed with special permission.
ALBA Jetty					
Outer Berth	11.3m	60,000 dwt	189m	10.7m	Bulk metal products. See Note 1.
Inner Berth	9.1m	25,000 dwt	165m	8.6m	Bulk metal products. Maximum beam of 21m. See Note 1 and Note 2.
GPIC Jetty					
Outer Berth	13.9m	35,000 dwt	202m	12.0m	Alumina imports. See Note 1.
Inner Berth	9.5m	12,000 dwt	152m	—	Aluminum exports. See Note 1.

Note 1.—Vessels are berthed on a flood tide during daylight hours only; unberthing is done day or night on the flood tide.
Note 2.—Vessels may experience heavy surging.

Several wrecks and a submarine cable encumber the channel and are best seen on the chart.

Several shoal patches lie NE of Sitrah Anchorage, but are contained within the 10m curve. A natural basin, containing Sitrah and the shipyard N of it, lies at the end of the approach fairway. At the W end of this basin lies the entrance to Khawr al Qulayah and the dredged channel to Mina Salman.

BAPCO Oil Terminal, at the end of a causeway extending from Sitrah Island, comprised of two separate facilities, provides six berths to vessels loading bulk petroleum products or LPG. No. 2 Wharf (BAPCO Wharf), a T-headed structure at the seaward end of Sitrah Causeway, has four berths. No. 1 Island Wharf, a detached structure lying close ENE of No. 2 Wharf, has two berths. Berth 7, the coastal tanker berth, lies about 0.3 mile SW of No. 2 Wharf. Only vessels using these facilities are allowed to transit the indicated area best seen on the chart.

ALBA Jetty, located about 0.3 mile SE of No. 2 Wharf, lies at the end of a causeway extending from the causeway supporting No. 2 Wharf and has two berths. The terminal will provide two shore springs.

Berthing information for BAPCO Oil Terminal and ALBA Jetty is given in the accompanying table titled **Sitrah—Berthing Facilities**.

Across from BAPCO Oil Terminal, the drydock at ASRY can accommodate vessels up to 500,000 dwt, with a maximum draft of 10m. Four wet berths can handle vessels with a maximum draft of 8.1m. There are two floating drydocks; the larger drydock can accommodate vessels up to 120,000 dwt, with a maximum length of 240m, a maximum beam of 41m, and a maximum draft of 9.4m. Berth No. 12 has been dredged (2012) to a depth of 7m. Berth No. 14 and Berth No. 15, on the NE side of the shipyard, have been dredged (2012) to a depth of 10.1m, although caution is necessary as a 9.5m patch lies off the N end of Berth No. 15. Berth No. 16, close NW of Berth No. 15, has been dredged (2012) to a depth of 8.1m.

The GIIC Terminal, located NE of the ASRY Shipyard, offers a 850m long pier for vessels loading and discharging bulk solid commodities. The W side of the jetty (loading) has charted depths of 12.5 to 14.2m, while the E side of the jetty (discharging) has charted depths of 13.4 to 15.5m. Bulk carriers, up to 100,000 dwt, with a maximum length of 290m, berth on the E side of the jetty. Bulk carriers up to 60,000 dwt, with a maximum length of 240m, berth on the W side of the jetty.

The maximum permissible maneuvering draft at the jetty at all states of the tide is 12.8m. Berthing and unberthing is conducted 24 hours, subject to weather and tidal conditions.

It has been reported (2008) that the lighted range leading to the terminal has been removed.

Khawr al Qulayah (26°13'N., 50°38'E.) is an extensive inlet circled by and containing reefs and other dangers best seen on the chart. A channel, with a least depth of 9.5m, leads through Khawr al Qulayah to a basin, with the same depth, off Mina Salman, although caution is necessary, as depths of less than 5m have been reported (2000) on the S side of the channel in the vicinity of Buoy No. 12. A secondary channel, with a least depth of 9.7m, leads S of the main channel, but rejoins it at the basin.

At Mina Salman, the Deep Water Jetty, which is 30m wide and 800m long, extends SE into Khawr al Qulayah and provides ten berths, each 150m in length. Berths 1, 3, 5, 7, and 9 are on the N side of the jetty, while Berths 2, 4, 6, 8, and 10 are on the S side of the jetty.

Mina Salman—Khawr al Qulayah Bridge

Mina Salman—Deep Water Jetty

Container Terminal Quay extends NE from the root of the Deep Water Jetty. Berths 11, 12, and 13, with a total length of 900m, handle grain and general cargo. Berths 15 and 16, with a total length of 600m, handle container cargo. All berths have been dredged to a depth of 10.9m. Alongside depths are best seen on the chart. It has been reported (2010) that cargo operations formerly conducted at this facility have been transferred to Khalifa Bin Salman port and that the berths will eventually be converted into a facility for the importation of construction material.

A large area of reclaimed land forms the N port of Sitrah. Wharves, with depths of 8.5 to 8.8m, alongside lie at the N edge of this land. The wharves are approached via a channel dredged to a depth of 9m.

Mina Salman—Silos and Control Tower at foot of Deep Water Pier

Mina Salman—324° range on Qassar al Qulayah

Mina Salman—ASRY Shipyard

Mina Salman—GIIC Plant

Mina Salman—GIIC Terminal

Mina Salman—Khalid Bin Salman jetty light

Sitrah from N

Sitrah—GPIC Jetty (left), ALBA Jetty (center), and BAPCO No. 2 Wharf (right)

Sitrah—BAPCO No. 2 Wharf

Sitrah—No. 1 Island Wharf

Sitrah—ALBA Jetty (right) and GPIC Jetty (left)

Sitrah—ALBA Jetty

Sitrah—GPIC Jetty

Courtesy of General Organization of Seaports Bahrain

Mina Salman—Khalid Bin Salman from SSE

Courtesy of General Organization of Seaports Bahrain

Mina Salman—Khalid Bin Salman from E

Deep Water Pier—106°54' outbound range

A small craft basin lies SW of the root of the Deep Water Jetty.

Khalifa Bin Salman (26°15'N., 50°45'E.), also known as Al Hidd, is a new port facility close E of the ASRY Shipyard and the GIIC Terminal and extending S to Sitrah Lighted Buoy. The facility consists of three container berths, each 300m long; two multipurpose/ro-ro berths, each 300m long; and one passenger berth, which is 300m long. The charted alongside depths at the berths range from 15.3 to 15.8m. The facility is entered through a 0.25-mile wide passage between a lighted buoy close SW of the breakwater extending SW from the head of the pier and Lighted Buoy K1. Charted depths greater than 15m lie NE of a line joining Lighted Buoy K1, Lighted Buoy K2, Lighted Buoy K3, and Lighted Buoy K4, and are best seen on the chart. Vessels should note that Lighted Buoy K2 marks the seaward end of a shallow area containing depths of less than 10m.

Aspect

In clear weather, the first marks to be sighted are the white houses on Jazirat al Muharraq; several towers on **Jabal ad Dukhan** (26°02'N., 50°33'E.) are conspicuous from NE. Radio masts and a flagstaff on **Ras al Jufayr** (26°12'N., 50°36'E.) are prominent. All marks and aids are adversely affected by the dust and haze that curtails visibility in the entire area and navigational aids may be obscured. It has been reported (2015) that visual and radar navigation do not provide acceptable accuracy until in the vicinity of Approach Lighted Buoy No. 14 through Approach Lighted Buoy No. 19.

The Khalifa Bin Salman control tower, on the SE portion of the facility, has been reported (2014) visible in the vicinity of Approach Lighted Buoy No. 14.

Pilotage

Pilotage is compulsory for vessels over 250 gt intending to transit the entrance channel to Khawr al Qulayah.

Vessels between 250 and 1,500 gt may be given permission to proceed without a pilot according to the circumstances prevailing at the time.

Bahrain Pilot Boat

Bahrain Pilots provides pilotage for all vessels bound for Khawr al Qulayah, as well as the GIIC Terminal, the ALBA Jetty, and the BAPCO Terminal. Bahrain Pilots can be contacted, as follows:

1. VHF: VHF channels 6, 8, 16, and 74
2. Telephone: 973-17727136

ASRY Pilots provides pilotage for vessels bound for the ASRY Drydock. ASRY Pilots can be contacted, as follows:

1. VHF: VHF channels 6, 8, 16, and 74
2. Telephone: 973-17671111

Both pilotage authorities coordinate their activities through Bahrain Port Control.

Vessels should send their ETA and maximum draft to the pilot 24 hours and 12 hours prior to arrival.

Pilots board in position 26°10'28.2"N, 50°44'22.2"E, about 0.4 mile ENE of Approach Lighted Buoy No. 18, except for the BAPCO Terminal; pilots for this facility board at the anchorage.

Regulations

GIIC Terminal.—Vessels should send their ETA at least 72 hours in advance, including the following information:

1. Last three ports of call.
2. Arrival drafts, fore and aft, and berthing displacement.
3. State of readiness to berth/unload.

When within VHF range, vessels should establish contact with Bahrain Port Control and the BAPCO Terminal to obtain the latest movement schedule from Bahrain Pilots.

The terminal can be contacted in an emergency, as follows:

1. VHF: VHF channel 68
2. Telephone: 973-17673311

BAPCO Terminal (Bahrain Petroleum Company BSC Terminal).—Vessels should send their ETA, draft, and bunker fuel requirements 48 hours in advance. When within VHF range and when at anchor, vessels should maintain a continuous listening watch on VHF channels 16 and 74.

The terminal can be contacted, as follows:

1. Call sign: BAPCO Terminal
2. VHF: VHF channels 16 and 74
3. Telephone: 973-17755661
4. Facsimile: 973-17755890

Berthing restrictions for LPG vessels are given in the following table:

Winds from N	Bow N	Berthing allowed when winds are less than 25 knots
	Bow S	Berthing allowed when winds are less than 10-15 knots
Winds from E through S	Bow N	Berthing allowed when winds are less than 10-15 knots
	Bow S	Berthing allowed when winds are less than 10-15 knots

The facility is closed when winds from the NNW exceed 35 knots. When winds are from E through S, the following berth-

ing restrictions are in effect:

Berth No. 1	Bow N	Berthing allowed when winds are less than 15-20 knots
	Bow S	Vessels up to 30,000 dwt may berth
Berth No. 2	Bow N	Berthing allowed when winds are less than 15-20 knots
	Bow S	Berthing not allowed
Berth No. 3	Bow N	Berthing allowed when winds are less than 15-20 knots
	Bow S	Berthing allowed when winds are less than 30 knots
Berth No. 4	Bow N	Berthing allowed when winds are less than 15-20 knots
	Bow S	Berthing allowed for coastal tankers when winds are less than 15-20 knots
Berth No. 5	Bow N	Berthing allowed when winds are less than 15-20 knots
	Bow S	Berthing allowed when winds are less than 35 knots
Berth No. 6	Bow N	Berthing allowed when winds are less than 10-15 knots
	Bow S	Berthing allowed when winds are less than 35 knots
Berth No. 7	Bow N	Berthing allowed when winds are less than 10-15 knots
	Bow S	Berthing not allowed

ASRY Drydock.—Vessels should send their ETA at least 72 hours in advance, including the following information:

1. Last three ports of call.
2. Arrival drafts, fore and aft, and berthing displacement.
3. State of readiness to berth/unload.
4. Whether vessel is gas free and ready to berth.
5. Whether vessel requires tank cleaning.

When within VHF range, vessels should establish contact with Bahrain Port Control and the BAPCO Terminal to obtain the latest movement schedule from Bahrain Pilots. When within VHF range, vessels should also establish contact on VHF channel 16 with the ASRY Drydock.

The facility can be contacted, as follows:

1. VHF: VHF channels 16, 72, and 74
2. Telephone: 973-17671111
3. Facsimile: 973-17670236

ALBA Jetty (Aluminum Bahrain).—Vessels should send their ETA at least 72 hours in advance, including the following information:

1. Last three ports of call.
2. Arrival drafts, fore and aft, and berthing displacement.

Courtesy of General Organization of Seaports Bahrain
Mina Salman—Khalid Bin Salman Control Tower

3. State of readiness to berth/unload.
4. Bunker requirements.

When within VHF range, vessels should establish contact with Bahrain Port Control and the BAPCO Terminal to obtain the latest movement schedule from Bahrain Pilots. When alongside, vessels communicate with the wharf staff on VHF channel 8.

The facility can be contacted, as follows:

1. VHF: VHF channel 8
2. Telephone: 973-17661751

Vessel Traffic Service

A Vessel Traffic Service is in operation in the approaches to the port, including Deep Draft Channel and the Northeast Approach Channel. Participation is mandatory for all vessels entering or leaving Bahrain territorial waters except for the following:

1. Bahraini naval vessels.
2. Bahraini-registered vessels whose duties do not take them outside Bahraini territorial vessels.

Inbound vessels over 50 gt should contact Bahrain Port Control Operations, as follows:

1. Vessels should radio their ETA at Sitrah Lighted Buoy (26°10'27"N., 50°43'21"E.), with draft and details of any deficiencies in vessel handling or seaworthiness, when within VHF range.

2. Vessels using Deep Draft Channel should request permission to proceed past Lighted Buoy No. 1 (26°29'41.4"N., 50°59'27.0"E.).
3. When passing the charted Reporting Points.
4. Vessels should report their intention to anchor to Port Control in sufficient time for an alternative anchorage to be stipulated if required.
5. When berthed, moored, or anchored.

Outbound vessels over 50 gt should contact Bahrain Port Control Operations, as follows:

1. Vessels should contact Port Control 15 minutes before, and immediately prior to, getting underway. Vessels should note that it has been reported (2008) that initial contact with Port Control should be made 1 hour prior to getting underway.
2. When passing the charted Reporting Points.
3. Vessels using Deep Draft Channel should request permission to proceed past Bahrain Approach Lighted Buoy.

Vessels with a waterline length of less than 33m, when approaching Bahrain, are required to report to Bahrain Port Control prior to passing beyond the vicinity of the positions of the following check points:

a. 26°27'25.2"N, 50°34'25.2"E. (about 1.8 miles SSW of the charted tower on the N end of Fasht al Jarim)
b. 26°10'25.2"N, 50°54'31.2"E. (in the vicinity of Qitat al Jaradah)

All vessels are required to maintain a continuous listening watch on VHF channel 74 when within the port area, including while anchored. Bahrain Port Control should be contacted if the vessel is to shift berth or anchorage and again when the vessel is situated.

Vessels may not engage in towing without permission, with the exception of tugs berthing vessels, and should then provide the length and speed of the tow, along with the anticipated passage.

Contact Information

Bahrain Port Control can be contacted, as follows:

1. Call sign: Bahrain Port Control
2. VHF: VHF channels 16 and 74
3. Telephone: 973-17162010
4. Facsimile: 973-17725534

It has been reported (2013) Bahrain Port Control can also be contacted on VHF channel 14.

Contact information for the GIIC Terminal, the BAPCO Terminal, the ASRY Drydock, and the ALBA Jetty can be found in Regulations.

Bahrain Port Authority can be contacted, as follows:

1. Telephone: 973-17359445
2. Facsimile: 973-17359523
3. E-mail: commercial-affairs@gop.gov.bh

Khalifa bin Salman port can be contacted, as follows:

1. Telephone: 973-17365500
2. Facsimile: 973-17365505
3. E-mail: admbah@apmterminals

Anchorage

Vessels berthing at Sitrah should have their outboard anchor cleared and ready to let go before approaching the dock; however, the anchor should not be let go in the vicinity of the dock, except on the advice of the Mooring Master.

Khawr al Qulayah North Range from close W of the ASRY Shipyard

Anchorage on arrival may be obtained, in depths of 18 to 20m, clear of the fairway, within one of the 11 designated anchorage areas (A1-A4 and B1-B7), which may best be seen on the chart. These areas are situated S or SE of Lighted Buoy No. 27. The roadstead is suitable for vessels over 100,000 dwt and for vessels awaiting the tide before sailing. Caution is necessary to avoid the wrecks and obstructions, best seen on the chart, lying in the S extremity of Anchorage Area A-1 and in the N extremity of Anchorage Area A-2, as well as in the area between the two anchorages.

Anchorage is prohibited in the open roadstead S and W of Sitrah Lighted Buoy.

Vessels carrying explosives anchor in an area shown on the chart centered about 1.2 miles SE of Sitrah Lighted Buoy, with a reported (2012) bottom of mud, sand, and shells. A dangerous wreck lies close outside the W limits of the explosives anchorage. The wreck is marked close NW by a lighted buoy.

Sitrah Inner Anchorage (26°11'N., 50°41'E.), the limits of which are shown on the chart in the approaches to the shipyard, is restricted to vessels acting under instructions of the port authority. The anchorage has charted depths of 9 to 15.1m, sand and shells. It has been reported that ships using this anchorage may be required to get underway on 1 hour notice. It has also been reported that large groups of jellyfish and plankton blooms pose a hazard to sea suctions while at anchor.

Anchorage is available in Khawr al Qulayah sheltered from the shamal, clear of the shoals and dredged channel and prohibited anchorage areas shown on the chart, but the pilot should be consulted before anchoring.

Directions

Deep Draft Channel is intended for deep-draft vessels entering or departing the ports. Proceed as safe navigation permits to the vicinity of **Bahrain Lighted Buoy** (26°33.0'N., 51°03.6'E.); a recommended track, best seen on the chart, leads from Bahrain Lighted Buoy to a position in the vicinity of **Bahrain Approach Lighted Buoy** (26°21'44"N., 50°46'35"E.).

If the vessel's underkeel clearance is critical, a reduction in speed may be necessary within these areas. Vessels drawing less than 9.1m should keep clear of the deep water fairway and proceed as described below.

Vessels not authorized to use Deep Draft Channel should remain SE and E of Deep Draft Channel. From the vicinity of Bahrain Lighted Buoy, vessels pass SE of Lighted Buoy No. 2; NW of a dangerous wreck in approximate position 26°24'43.8"N, 50°56'51.6"E; SE of Caisson Wreck Lighted Buoy; NW of a dangerous wreck in approximate position 26°22.4'N, 50°53.5'E; N and W of Sitrah Inward Lighted Buoy; W of Vidal Lighted Buoy; E and S of Lighted Buoy No. 37; and then on to the pilot boarding position.

Sitrah Lighted Buoy

Caution

A local magnetic anomaly has been reported to exist in the vicinity of the Deep Water Jetty at Mina Salman.

Several wrecks, shoals, submarine cables, pipeline areas, and prohibited anchorage areas lie within the waters of the port.

Vessels should exercise caution if navigating outside of the defined channels in Khawr al Qulayah, as changes to the charted depths have been reported.

It has been reported (2009) that the intense background lighting in the port makes the lighted navigational aids difficult to distinguish at night.

It has been reported (2011) that moored vessels and background clutter may obscure navigational aids.

Less water than charted has been reported (1995) up to about 4 miles N of Sitrah Lighted Buoy.

Inbound vessels are cautioned that depths of less than 10m are charted along the Qasar al Qulayah Range (in line bearing 323.7°) just prior to the turn to use the Khawr al Qulayah North Range (in line bearing 356.8°). Due to the proximity of these shallow depths, vessels are advised to proceed slightly to the E when transiting the channel at the junction of the 323.7° range with the 356.8° range.

The charted range, located close W of the ASRY Shipyard and in range bearing 106°54', marking the outbound channel from the Deep Water Jetty, is difficult to discern from a distance. The front range is a black guano-covered triangle set close to the water; the rear range consists of three adjoining white/orange triangles that can blend into the background of the ASRY Shipyard behind it.

It has been reported (2007) that departing vessels have been leaving Deep Draft Channel and transiting the areas W and N of Fasht al Dibal. There are unconfirmed reports of uncharted rocks expending up to 8m off the sea bottom; other uncharted shoals may exist in this area. Vessels are recommended to remain in the marked and charted Deep Draft Channel.

Dredging and construction works are in progress (2009) in the vicinity of Khalifa Bin Salman Port and the GIIC Jetty.

It has been reported (2009) that, due to how close the buoys marking the Deep Draft Channel have been set to the channel limits, prevailing currents may cause these buoys to be set into the channel.

It has been reported (2009) that wind-borne dust can reduce visibility to less than 1.5 miles and the port may be closed when the visibility is reduced to less than 1 mile.

It has been reported (2012) that the sector light leading to Deep Water Pier is not operational.

16.7 Al Manamah (26°14'N., 50°35'E.) (World Port Index No. 48310), the capital of the country, is located on Ras ar Rumman (26°14'N., 50°35'E.), the N extremity of Al Bahrayn. The town is an important commercial center. The outer harbor, about 4 miles N of the town, is used chiefly by local craft and ships discharging into lighters.

Winds—Weather.—Although Fasht al Jarim, the extensive detached reef N of Al Bahrayn, protects the harbor from the shamal, it does not prevent considerable sea from making up in the outer harbor. When the wind is strong, however, communication with the shore is seldom interrupted and vessels ride easily at the anchorage. Inner Harbor affords much better shelter, but it is usually full of local craft.

Tides—Currents.—The tidal current N of Jazirat al Muharraq sets WSW and ENE at a velocity of 1 to 2 knots.

The tidal current setting S along the E side of Fasht al Jarim joins the WSW current and turns SW into the harbor.

The tidal current setting NE across the entrance of Inner Harbor is appreciable and caution is advised.

Depths—Limitations.—The least depth in the approach channel to Outer Harbor is 6.1m; from Outer Harbor to Inner Harbor it is 4.6m, but vessels drawing more than 4m should not enter Inner Harbor. Depths in Outer Harbor are 5.8 to 11.9m; depths in the Inner Harbor are 1.8 to 5.5m.

The principal dangers in the approach to Al Manamah include **Fasht al Jarim** (26°24'N., 50°30'E.), an extensive reef having its N end about 17 miles NNW of Qalali.

Three low-lying islands have been constructed from material dredged from a channel which extended 2.7 miles NE from position 26°23'N, 50°27.5'E. The NE end of the channel ends in a

small harbor surrounded by reclaimed area. The harbor is dredged to 4.7m, the channel depth is 3.6m and marked by beacons.

Jadam (26°22'N., 50°30'E.), a sand bank, is the S extremity of Fasht al Jarim; shoal flats extend S and at least about 6 miles E. Detached 5.5m patches lie up to 3.5 miles E.

Ras Khusayfah Spit (26°19'N., 50°35'E.), with very shallow depths, extends 3.5 miles NW of **Qassar Khusayfah** (26°17'N., 50°37'E.) and close to the fairway.

West Spit (26°17'N., 50°31'E.), with depths up to 5.5m, lies on the W side of Outer Harbor and is marked close E by a lighted buoy. Al Manamah is fronted by drying reefs which extend N from the town and NE to Jazirat al Muharraq, which is also fronted by drying reefs extending 2.5 miles NW to Outer Harbor of Al Manamah.

Ras Dawarin (Ras Zurawen) (26°15'N., 50°34'E.), marked by a lighted beacon, is the W extremity off Ras ar Rumman.

Al Manamah Harbor is entered between Ras Khusayfah Spit and the shoal flat extending SE from **Jadam** (26°22'N., 50°30'E.).

The Inner Harbor is a bight in the reefs WNW of Al Manamah. It affords good shelter and is usually congested with small vessels having a draft of less than 4m. The reefs bordering Inner Harbor are all flat and show up well in a good light. There are several small piers for shallow draft craft only.

Customs Pier, with a depth of 1.5m alongside, has a floodlit tower at its head.

Aspect.—Several mosques are reported conspicuous in Al Manamah. About 2.5 miles SW of Ras ar Rumman are the ruins of a large mosque with twin minarets. The upper part of the minarets are good marks over the tree tops until the ship nears Inner Harbor.

Abu Mahir Fort (26°14'N., 50°37'E.), with its several towers, is conspicuous from the anchorage. It stands on a low detached bank which becomes an islet at HW. Domes on the Ruler's Palaces are good marks. Portuguese Fort, a shapeless light-colored heap of stones 3 miles W of town, shows up well in the early morning light.

Pilotage.—There is no pilotage service.

Anchorage.—Anchorage is available in Outer Harbor, in depths of 7 to 9m, over a bottom of sand and coral, with the N end of Jazirat al Muharraq bearing between 085° and 090°.

Caution should be taken when anchoring here, as a dangerous wreck, with a depth of 9.1m, and two submarine cables lie in the vicinity. Vessels with a draft of less than 4m may anchor in Inner Harbor over a bottom of sand and mud, with the lighted tower on Ras Dawarin bearing 000°, distant 0.5 mile.

Directions.—From seaward, proceed as safe navigation permits to Bahrain Approach Lighted Buoy (26°22'N., 50°47'E.).

From Bahrain Approach Lighted Buoy, steer W to pass close S of Bahrain Outer Lighted Buoy (26°21'N., 50°42'E.) and then N and W of Bahrain Inner Lighted Buoy, lying 5 miles NW of the N extremity of Jazirat al Muharraq.

At Bahrain Inner Lighted Buoy, alter course to bring the W shoulder of **Jabal ad Dukhan** (26°02'N., 50°33'E.) to bear 182° ahead, and keep it so, until approaching the anchorage.

Alternatively, steer for Portuguese Fort bearing about 195°, ahead, until the N end of Al Muharraq bears about 105°; then alter course as necessary for the anchorage.

Caution.—It is essential that the vessel fix its position accurately before entering the channel, as the buoyage has been reported to be unreliable. If the vessel's position is in doubt, it should not proceed into depths of less than 11m.

If the buoys are not seen due to poor visibility, the vessel should fix its position frequently. Particular caution should be taken to avoid the shoal patches E of Fasht al Jurin and those off Ras Khusayfah Spit.

Artificial reefs lying W of Fasht al Jurin can reduce charted depths by as much as 2m.

16.8 From Al Manamah, a channel leads NW among the reefs and other dangers to the anchorage at Ras Tannurah, a distance of about 30 miles. Vessels with a maximum draft of 4.6m can transit this channel.

Pilots, embarked at Al Manamah, should be employed. This passage is entered between **West Spit** (26°17'N., 50°31'E.) and the flat extending S from Fasht al Jarim.

For the first 6 miles, the channel is about 1 mile wide, but then opens into a basin known as Khawr al Bab.

There are a few 5.5m patches in the fairway, and in **Khawr al Bab** (26°24'N., 50°25'E.), an extensive shoal with a least depth of 4.1m.

From Khawr al Bab, the passage leads between **Najwah** (26°33'N., 50°15'E.), a reef marked 0.5 mile W by a lighted beacon, and **Hayr as Sarah** (26°32'N., 50°24'E.), a pearl bank.

There are depths of about 9.1 to 14.6m between the reef and bank. Lighted buoys mark the fairway.

Bahrain—West Coast

16.9 The N side of Al Bahrayn is fronted by reefs and shallows extending as far as 4.5 miles offshore.

Umm an Nasan (Umm Nasan) (26°09'N., 50°24'E.) is a low and sandy island with two rocky peaks, the W of which is conspicuous. Two very small islands lie on the fringing reef N and NE of Umm an Nasan. A submarine oil pipeline, laid from Al Khubar, is landed on the coast of Al Bahrayn, just E of Umm an Nasan.

Malik Fahd Causeway (26°10'N., 50°22'E.) spans Dawhat Salwa, between Saudi Arabia and Al Bahrayn. The bridge/causeway, which extends along the N shore of Umm an Nasan, may best be seen on the appropriate chart. The main navigational span in the causeway is Bridge No. 3, located 4 miles from the Saudi Arabian shore.

The width of the span is 122m, with a vertical clearance of 28.5m and a depth under the span of 7m. The fairway, for a distance of 0.8 mile on each side of the bridge, is marked by lighted beacons.

Bridge No. 1 and Bridge No. 4, situated 0.5 mile and 7.5 miles, respectively, from the Saudi Arabian shore, both have a span with a navigable width of 45m, a vertical clearance of 15.5m, and a depth under the span of 5.5m.

Bridge No. 5, at the E end of the causeway between Al Barayn and Umm an Nasan, has a navigable width of 45m, a vertical clearance of 13m, and a depth under the span of 4.5m.

Lights are shown from the channel piers of all the bridges; green lights are shown on the W side of the span while red lights are shown on the E side of the span. The piles are floodlit.

Anchoring and fishing are prohibited within 500m of all em-

bankment bridges and navigational channels.

Az Zallaq (26°03'N., 50°29'E.) is a village with a T-head pier having a depth of 2.4m alongside. Barges from the mainland discharge cargo at the pier. Landing is good at the village only.

Anchorage is taken about 3 miles off the village, in a depth of 9m, with the highest peak on Umm an Nasan bearing 335°. The anchorage should be approached with the village bearing 081°.

Ras al Barr (25°48'N., 50°34'E.), the S end of Al Bahrayn, is a long low, sandy point which cannot be approached closer than 5 miles due to shallow flats which extend to Az Zallaq.

Caution.—Extensive changes to depths and navigational aids have occurred off the SE and SW coasts of Bahrain and in Dawhat Salwa. Vessels are urged to navigate with caution in these areas, especially S of 26°00'N.

Saudi Arabia—Dawhat az Zuhun to Damman Port

16.10 Dawhat az Zulum (26°00'N., 50°05'E.) is an extensive shallow basin located 23 miles NW of Ras Sayyah (25°37'N., 50°16'E.), with uninhabited shores backed by many sand hills, one of which rises 36m on the S side of the basin.

Between the W end of Al Bahrayn and the mainland W, the passage is obstructed to a great extent by reefs, through which constricted and shallow channels lead to the mainland and Az Zallaq.

The preferred channel lies close W of Umm an Nasan. It is marked by lighted beacons, even numbered on the E side, and has a least depth of 4.9m. Natural landmarks in the area are best in fixing positions, but there may be difficulty due to refraction and mirage.

The tidal currents set N and S, attaining a rate of 2 or 3 knots at springs.

Al Aziziyah (26°11'N., 50°13'E.), about 19 miles NNE of Dawhat az Zuhum, has a prominent desalination plant, a power station with five conspicuous chimneys, and a jetty used by local tankers. Two more jetties stand 1 mile S of Al Aziziyah. Unauthorized navigation is prohibited in the approach channel to these jetties, which has a depth of 6m and is marked by buoys.

The W end of the Malik Faud Causeway, linking Saudi Arabia and Bahrain, is located about 3 miles N of Al Aziziyah and has been previously described in paragraph 16.9.

Al Khubar (26°17'N., 50°13'E.) lies 6 miles N of Al Aziziyah and is approached from the S via a channel leading W close N of the causeway, then N between the coastal bank and **Hadd Shabib** (26°14'N., 50°14'E.), an extensive rocky shoal area fronting this part of the coast. The harbor is used only by local fishing vessels. There are depths of less than 6m in the channel, which is marked by buoys.

Az Zahran (Dhahran) (26°18'N., 50°08'E.) is a city and the site of oil tanks and pipelines leading to Ad Dammam and Al Khubar.

Ras Kawakib (26°22'N., 50°13'E.), on the mainland about 15 miles NW of Al Bahrayn and 5 miles N of Al Khubar. Reefs extend 8 miles E and NE from the point, with drying sand banks at the reef's outer end. Al Midra ash Shamali is a high conspicuous hill about 8 miles WSW of Ras Kawakib. A large radar scanner is on it.

16.11 The coast from Ras Kawakib to Ras Abu Ali is fronted by many reefs and shoals, through which are several channels marked by navigation aids. The shores are generally low and sandy along this coast, with the oil tanks and refinery on Ras Tannurah the most conspicuous objects.

With the exception of the settlement at Al Jubayl, the coast is almost uninhabited. Detached shoal patches lie as far as 40 miles offshore. A channel suitable for the arrival and departure of deep-draft vessels, and governed by a Traffic Separation Scheme, provides access to the portion of the coast containing Ad Dammam, Ras Tannurah, and Ju Aymah terminals.

Ad Dammam and Ras Tannurah may also be approached from the E by an inshore channel, described below.

Vessels utilizing this channel are restricted in length and draft; see the channel descriptions for details. Ju Aymah Oil Terminal is provided with a separate deep-water departure channel, which is described below.

The deep-water approach and departure channels for all three terminals are governed by an IMO-adopted Traffic Separation Scheme, best seen on the appropriate chart.

Mariners are reminded that Rule 10, of the International Regulations for Preventing Collisions at Sea, applies to IMO-adopted Traffic Separation Schemes, and that a vessel not using a Traffic Separation Scheme shall avoid it by as wide a margin as is practicable.

Depths—Limitations.—Vessels utilizing Main Channel are required to maintain an underkeel clearance of 1.5m at all times. Entering vessels are restricted to a draft of 16.5m plus the height of tide for an absolute maximum draft of 18m.

Departing vessels with a draft in excess of 19.5m must wait for enough of a tidal rise to maintain the required underkeel clearance.

Main Channel, entered about 50 miles N of **Jazirat al Muharraq** (26°16'N., 50°37'E.), is available to dry cargo vessels approaching Ad Dammam with a draft of more than 10.4m, the channel is also open to tankers approaching Ras Tannurah with like drafts, and lengths of 244m or greater.

All other vessels should use East Channel. All vessels approaching Ju Aymah should use Main Channel. Main Channel shows general depths of 25 to 45m from the N end of the TSS to its junction with the traffic lanes for Ju Aymah.

South of the junction, the inbound lane is restricted to a width of about 0.2 mile due to a shoal reported to exist in position 26°50.5'N, 50°10.0'E.

The S end of the scheme has been wire dragged to a depth of 17.7m. The critical area in the outbound lane is in the vicinity of the S end. The dangers lying near Main Channel are described with Ras Tannurah in paragraph 16.14.

The Ju Aymah Departure Channel, with depths of 38 to 56m, provides a safe route for laden vessels proceeding from Ju Aymah Oil Terminal to sea, and is best seen on the chart.

East Channel is a buoyed channel providing access to Ad Damman or Ras Tannurah. This fairway is open to dry cargo vessels drawing 10.4m and less, or tankers of like drafts and lengths of less than 244m. The fairway is reported to have a least known depth of 12.2m, but passes over an 11.9m depth about 15 miles NE of Ras Tannurah.

Pilotage.—See Damman Port (paragraph 16.12) and Ras

Tannurah (paragraph 16.14) for details on pilotage.

Regulations.—See Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean for details pertaining to vessels in Saudi Arabian waters.

See Damman Port (paragraph 16.12) and Ras Tannurah (paragraph 16.14) for details on required entry messages, departure regulations, and other regulations.

Inbound vessels should contact the Ras Tannurah pilots on VHF channels 14 and 16 when 100 miles from Ras Tannuruh/ Ras al Ju Aymah for anchoring, boarding, and berthing instructions.

Inbound vessels may not exceed a speed of 5 knots between Lighted Buoy E and the S limit of the tanker anchorage E of Sea Island. After passing S of Lighted Buoy 9, inbound vessels must not overtake and must maintain an interval of at least 1 mile between ships proceeding in the same direction.

Outbound vessels may not exceed a speed of 5 knots between the S limit of the tanker anchorage and Lighted Buoy G and Lighted Buoy 18. Until N of Lighted Buoy B, outbound vessels may not overtake and must maintain an interval of at least 1 mile between ships proceeding in the same direction.

All vessels using East Channel should keep to the starboard side of the fairway. Overtaking is prohibited between Lighted Buoy RTE 4 and Lighted Buoy RTE 8. Outbound vessels should not depart this channel until Lighted Buoy RTE 2 has been cleared.

All anchored vessels should maintain a listening watch on VHF channels 10 and 16.

Anchorage.—North Holding Anchorage, centered about 28 miles N of Ras Tannurah, shows charted depths of 25 to 48m, bottom quality unknown. Holding Anchorage, about 20 miles NE of Ras Tannurah, shows charted depths of 19.8 to 27m, bottom quality unknown.

Directions.—See also the Regulations topic. Sail as safe navigation permits to the vicinity of Ras Tannurah Lighted Buoy, then proceed W to the appropriate lane of the Traffic Separation Scheme. If proceeding to North Holding Anchorage, do not leave the TSS until clear of Ras Tannurah Entry Lighted Buoy in position 27°06'N, 50°23'E.

Take care when navigating near either end, but exercise particular caution near the junction of Main Channel and the Ju Aymah traffic lanes; partially-loaded tankers sailing from Ras Tannurah to Ju Aymah may be met, in addition to other traffic following the scheme.

Vessels sailing from North Holding Anchorage to the berths should enter the inbound lane of the Traffic Separation Scheme and not pass W of **Fasht Gharibah** (27°00'N., 50°13'E.).

Vessels that are departing Ras Tannurah and are heading for North Holding Anchorage should follow the outbound traffic lane as through proceeding to sea, then alter course W at Ras Tannurah Approach Lighted Buoy and proceed to the anchorage.

Vessels should not cross the separation zone in order to proceed directly to the anchorage.

Vessels should steer WNW to pass 1 mile N of Lighted Buoy RTE2. Then alter course to SSW to pass W of Lighted Buoy RTE6 and E of Lighted Buoy RTE5; then steer WSW to pass between Lighted Buoy RTE7 and Lighted Buoy RTE8.

Take care not to steer too N a course, as Hayr Khawrah, a shoal with a least charted depth of 3.6m, lies just N of the track. The channel passes between many shoals and dangers best seen on the chart.

Caution.—Local authorities should be contacted for the latest information on depths and approach routes before using the Eastern Channel.

Dammam Port (26°30'N., 50°12'E.)

World Port Index No. 48335

16.12 Dammam Port, also known as King Abdul Aziz Port or Mina al Malik Abd al Aziz, is the principal dry cargo port on the E seaboard of Saudi Arabia. The port is connected by road and rail to the mainland. The port is formed entirely on reclaimed land.

The basins and jetties are connected to the mainland by a wide causeway, 3.5 miles long, carrying a road and a railway.

Another large area of reclaimed land, known as Al Shati, extends 3 miles N from the town of Ad Dammam, 3 miles W of the causeway.

There is limited shelter for small craft at the SE corner of Al Shati, but otherwise there are no port facilities at Ad Dammam.

Saudi Ports Authority Home Page—The Ports

http://www.ports.gov.sa

Winds—Weather

During the shamal season, the NW winds may blow fresh to strong for 3 or 4 days at a time, diminishing at night. Lighters can not be worked during the shamal because of wind conditions and choppy seas.

Damman Control Tower

Southeast winds are light and not bothersome. The highest swells usually occur with S winds. In the summer, the climate

is very hot and humidity is high. The climate is pleasant during the winter.

Tides—Currents

The mean range of tide in port is about 1.3m. Tidal currents in the vicinity of the main wharf attain a velocity of 4 knots. The flood current sets SE and the ebb current sets NW across the harbor entrance. Tidal currents have been reported to reach a rate of 6 knots.

Depths—Limitations

The approach channel has been dredged (2016) to a depth of 16.5m up to a circular maneuvering area centered on approximate position 26°31.3'N, 50°12'E. The approaches to the East Basin have been dredged to a depth of 15.0m. The port authorities should be consulted for the latest information.

Ships anchored, in and outside the anchorages and channel, constitute a hazard while transiting Port Damman Channel, as the channel buoys and beacons are often hidden from view.

Dredging in the approaches and channels, as well as alongside piers, may necessitate the removal or shifting of beacons and buoys. Dredging operations are currently (2015) in progress until further notice in the following areas, as best seen on the chart:

1. Ad Damman Approach Channel.
2. Holding Anchorage.
3. In the N part of West Basin.
4. In the King Fahd Ship Repair Yard Basin.

Vessels should contact Damman Port Control on VHF channel 16 for further instructions before entering the approach channel.

East Basin, on the E side of the main quay, offers 22 berths and is approximately 1.5 miles long and 0.2 mile wide. Breakwaters protect this basin to the E and NE.

West Basin, on the W side of the main quay, has been dredged (2016) to depths between 12 and 16m, offers 19 berths, and is also approximately 1.5 miles long and 0.2 mile wide, with a breakwater protecting its W side. Two additional berths as well as land reclamation operations to expand the W dock face of the basin are in progress (2016).

Berth information for both East Basin and West Basin are given in the accompanying table titled **Damman Port—Berth Information**.

A small craft harbor exists S of East Basin and is approached through a dredged channel of 6m. The harbor consists of three small basin, with a total berthing length of 480m and depths of 4.0 to 4.9m alongside. The harbor entrance is protected by an L-shaped breakwater.

Damman Port—Berth Information

Berth	Length	Depth	Remarks	Berth	Length	Depth	Remarks
East Basin				**West Basin**			
No. 1	240m	14.0m	Bulk grain. Can accommodate a vessel with a maximum draft of 13.5m.	No. 23	240m	12.6m	Containers and ro-ro.
No. 2	240m	14.0m	Bulk grain.	No. 24	240m	12.7m	Containers.
No. 3	240m	14.0m	Bulk grain.	No. 25	240m	13.8m	Containers.
No. 4	180m	12.0m	General cargo.	No. 26	240m	13.8m	Containers.
No. 5	180m	12.0m	General cargo.	No. 27	240m	13.8m	Containers and ro-ro.
No. 6	150m	9.0m	General cargo.	No. 28	240m	13.8m	Discharging grain.
No. 7	150m	9.0m	General cargo.	No. 29	180m	13.0m	Discharging grain.
No. 8	150m	9.0m	General cargo.	No. 30	180m	12.4m	Discharging grain.
No. 9	150m	9.0m	General cargo and fertilizer.	No. 31	180m	12.7m	Containers and ro-ro.
No. 10	215m	11.0m	General cargo.	No. 32	180m	11.5m	General cargo and ro-ro.
No. 11	180m	11.0m	General cargo.	No. 33	180m	11.1m	General cargo and ro-ro.
No. 12	180m	12.0m	General cargo.	No. 34	180m	11.3m	General cargo and ro-ro.
No. 13	180m	12.0m	General cargo.	No. 35	180m	11.1m	Refrigerated cargo and ro-ro.
No. 14	180m	12.0m	General cargo and ro-ro.	No. 36	180m	11.9m	Bulk clinker and cement.
No. 15	180m	12.0m	General cargo.	No. 37	180m	11.9m	Bulk clinker, cement, and grain.
No. 16	180m	12.0m	General cargo.	No. 38	180m	10.9m	Cement and edible oils.

Damman Port—Berth Information							
Berth	Length	Depth	Remarks	Berth	Length	Depth	Remarks
East Basin				West Basin			
No. 17	180m	12.0m	General cargo.	No. 39	190m	11.0m	Explosives and hazardous cargo.
No. 18	180m	12.0m	General cargo.	No. 42	—	16.0m	Containers.
No. 19	180m	12.0m	General cargo.	No. 43	—	16.0m	Containers.
No. 20	180m	12.0m	General cargo.	—			
No. 21	240m	14.0m	General cargo.				
No. 22	240m	14.0m	General cargo and ro-ro.				
Note.—It has been reported that depths at all berths in the West Basin may be up to 2m less than charted.							

Aspect

Ad Dammam contains many modern high-rise buildings, water towers, and elevated flood lights. The control tower, on the head of the main quay, is 97m high and conspicuous. A large black and white hotel is situated at the root of Al Shati.

A stranded wreck lies 1 mile S of Najwah Lighted Beacon; another stranded wreck, lying 2.5 miles SW of the lighted beacon, is marked by a lighted buoy. Both wrecks are easily seen and provide good radar targets.

Pilotage

Pilotage is compulsory for all commercial vessels 150 gross tons and over. Pilots board vessels with a draft of less than 10m and all container vessels between Lighted Buoy D11 and Lighted Buoy D13.

Vessels with a draft over 10m, except container vessels, embark the pilot in the vicinity of Lighted Buoy D1 outside the channel.

Regulations

General.—Tankers proceeding to and from Damman Port with a draft of 10.4m and less shall use East Channel and not Main Channel.

Inbound vessels.—The vessel's ETA should be sent upon departure from the last port visited, then 5 days in advance, revising or confirming information 48 hours and 24 hours before arrival. Additionally, vessels must have an appointment (request to berth) approved prior to entry into port.

Vessels are urged to contact the local authorities or the vessel's agent, if possible, for the latest information on regulations and entry requirements for this port. See the approach channel descriptions in paragraph 16.11 for regulations and contact points dealing with these waters.

Details of the vessel's radar equipment are required prior to arrival.

Vessels should report to Ras Tannurah Port Control on VHF channel 10 on passing the following points:

1. Ras Tannurah Lighted Buoy (27°06.0'N 50°57.0'E).
2. Lighted Buoy RTE2 (26°47.0'N, 50°34.0'E).
3. Entry Lighted Buoy (27°05.0'N, 50°23.0'E).
4. Lighted Buoy A (26°56.2'N, 50°12.6'E).
5. Lighted Buoy C (26°48.3'N, 50°10.2'E).

Additionally, Dammam Port Control should be contacted 1 hour before arrival at Lighted Buoy D1 (26°37.0'N., 50°15.0'E.), marking the dredged channel leading to the port, giving the following information:

1. Vessel name.
2. LOA.
3. Maximum draft.
4. Cargo tonnage and main commodity.
5. Hazardous cargo on board, if any.
6. Whether the vessel has a list.
7. Whether the vessel has a mechanical defect.

The vessel should contact Damman Port Control again, upon passing the Lighted Buoy D1 (26°37.0'N., 50°15.0'E.). The channel should not be entered until express permission is given by Damman Port Control.

All vessels shall monitor VHF channels 10 and 16 when underway in the approach channels to Ras Tannurah and in the area of the Ju Aymah Oil Terminal and the Ju Aymah LPG Terminal. Vessels shall also monitor VHF channel 10 when underway in the Ras Tannurah Channel S of Lighted Buoy A (26°56.2'N., 50°12.6'E.), in the vicinity of Ras Tannurah Terminal, and in the anchorage areas of Ras Tannurah Terminal.

Vessels should not exceed a speed of 8 knots in the buoyed channel leading to the port. Overtaking is prohibited.

Outbound vessels.—Outbound vessels departing Ras Tannurah Anchorage shall advise Ras Tannurah Port Control 30 minutes prior to weighing anchor on VHF channel 10.

Outbound vessels shall monitor VHF channels 10 and 16 when underway in the approach channels to Ras Tannurah, in the area of the Ju Aymah Oil Terminal and the Ju Aymah LPG Terminal, in the Ras Tannurah Channel S of Lighted Buoy A, in the vicinity of Ras Tannurah Terminal, and in the anchorage areas of Ras Tannurah Terminal.

Upon passing Lighted Buoy D11, vessels will advise Ras Tannurah Port Control on VHF channel 13 of their ETA at the S extremity of the Tanker Anchorage. Outbound vessels shall also report on passing Lighted Buoy D1.

See paragraph 16.11 for further information on regulations.

Contact Information

Contact information for the port can be found in the table titled **Damman Port/Ras Tannurah—Contact Information**.

The container terminal can be contacted, as follows:

1. Telephone: 966-13-814-2338
2. Facsimile: 966-13-814-2336
3. E-mail: info@ips.com.sa
4. Web site: http://www.ips.com.sa

The Port Authority can be contacted, as follows:

1. VHF: VHF channels 12, 13, 16, 19, and 22
2. Telephone: 966-13-858-3900
3. Facsimile: 966-13-857-1727
4. E-mail: kaap@port.gov.sa

Anchorage

Anchorage berths within the port limits are usually assigned by Port Control, with the holding ground reported to he generally good.

Approach (Holding) Anchorage, consisting of four designated berths and dredged (2016) to a depth of 15m, lies on the W side of the approach channel, about 4 miles WSW of Najwah Lighted Beacon. Vessels with an loa of between 200 and 350m are required to use the anchor berths designated A, B, C, and D. A depth of 12.8m has been reported (2012) in the anchorage about 1 mile NW of the entrance to the West Basin.

Working Anchorage, on the NE side of the channel, about 3 miles SW of the beacon, shows charted depths of 9.5 to 12m.

Explosives Anchorage, SE of Working Anchorage, shows a least charted depth of 7.5m. Small Craft Anchorage, just NE of the breakwater protecting East Basin, shows charted depths of 6.5 to 10m.

East Channel Holding (Outer) Anchorage, for vessels with a draft of greater than 10m, is located about 2 miles ESE of the entrance to the Damman Approach Channel and consists of eight designated anchor berths. Berths A and B are to be used by vessels with an loa of between 200 and 350m. Berths 1-6 are to be used by vessels with an loa of less than 200m. All vessels are to contact Damman Port Control on VHF channel 16 for further instructions before entering the anchorage area.

Directions

After clearing the S end of the Traffic Separation Scheme in Main Channel, vessels should follow the buoyed channel into port.

Saudi Arabia—Damman Port to Ras Tannurah

16.13 **As Sayhat** (Sayha) (26°29'N., 50°02'E.) is a town on the coast about 5 miles W of Dammam Port. Thick date groves extend about 8 miles N of the town to Al Qatif.

Al Qatif (26°33'N., 50°00'E.) is an important town located in an oasis which extends 9 miles N and S of town, whereas the town is 3 miles inland. Al Qatif is used only by local fishing craft.

Tarut (26°34'N., 50°04'E.) is an island lying on a coastal reef extending 7 miles offshore. Darin, a town at the S end of the island, has a square fort with a prominent tower. A causeway connects the island with Al Qatif.

There is also a prominent tower in Sanabis, 2 miles N of Darin.

The low coast trends N from Al Qatif for about 6 miles to a shallow bay, which is formed by the W side of a low, sandy peninsula which extends SSE to Ras Tannurah. The entire bay around Tarut is shallow and encumbered with dangers.

The coastal bank, with depths of 5.5m, extends S from the SW end of Ras Tannurah.

Off the SW side of the sand strip forming Ras Tannurah is an area about 3 miles long, where the depths are 5.8 to 9m.

Ras Tannurah (26°38'N., 50°10'E.)

World Port Index No. 48340

16.14 The oil port of Ras Tannurah, about 5 miles NE of Tarut, is located at the SE end of a narrow, sandy strip of land.

The extremity of Ras Tannurah consists of sand over coral and is only 0.9m high.

Damman Port/Ras Tannurah—Contact Information

	Ad Damman		Ras Tannurah	
	Port Control	**Pilots**	**Port Control**	**Pilot**
Call sign:	Damman Port Control	—	Ras Tannurah Port Control	Ras Tannurah Pilot Office
VHF:	VHF channels 12, 13, 16, 19, and 22	VHF channels 71 and 73	VHF channels 10, 13, and 16	VHF channels 10, 11, 12, 13, 14, and 16
Telephone:	966-13-8332500	—	—	966-13-6731906
Facsimile:	966-13-8571727	—	—	966-13-6731669
Telex:	495-801138 DAPM SJ 495-801139 DAPM SJ	—	—	495-851111 RASPRT SJ

Winds—Weather

The winds in the area are unpredictable. Winds of varying strength may come from any quarter; the prevailing wind is from the NNW. Winds of any strength at all tend to create a sharp, but short, choppy sea, which comes up very quickly and calms down as rapidly. Winds from E cause heavy seas.

In general, the visibility of this area of the Persian Gulf is fair to excellent, but at times, usually in the middle of summer or middle of winter, fine dust is held in suspension in the atmosphere and visibility is reduced to a very short distance.

These dust phenomena are more deceptive than fog, in that mariners are apt to believe visibility to be greater than it actually is. At times, genuine sandstorms have occurred in this area. Fogs, without sand or dust, may occur in the early morning hours.

The local weather of Ras Tannurah is, on the whole, favorable, and the exposed position of the port tends to mitigate the heat of summer; however, the humidity is very great and frequently exceeds 85 per cent. Proper precautions should be taken against sun and heat stroke during the summer months.

Tides—Currents

The mean range of tide is 1.2m, with a spring range of about 1.5m. Winds may raise the tidal level to 2.4m or may reduce it to 0m. Irregular or uncertain currents may be encountered in the approach to Ras Tannurah, and mariners are cautioned to obtain a navigational fix as often as possible.

Because of the configuration of the coast in the vicinity of the piers, a local system of tidal currents prevails in the vicinity of North Pier and South Pier. The flood tidal current sets SSE and the ebb currents sets NNW.

The rate of the spring flood current is from 3 to 4 knots and the spring ebb current is from 1 to 3 knots, but the direction of the wind materially influences these rates and may even, in the case of strong winds during neap tides, stop or reverse the current. Spring ebb tidal currents of 4 to 6 knots have been experienced off the extreme S end of Ras Tannurah.

During neaps and springs, the current velocity at Sea Island is 0.6 and 1.3 knots, respectively. At North Pier and South Pier, the velocity is 1 to 2 knots during neaps and springs.

Depths—Limitations

The dangers that are lying near Main Channel are described here. Numerous other shoals and detached patches exist here and are best seen on the chart.

Rennie Shoals (27°03'N., 50°42'E.), comprising two shoals about 2 miles apart, with a least depth of 3.3m, are the outermost dangers in the approach. There is no visible indication of these shoals, other than the lighted buoys N and S of them.

Fasht Abu Safah (26°58'N., 50°23'E.) is a rocky shoal, with a least depth of 0.6m, lying on the SE side of the channel. The sea breaks heavily over the shoal at times, but with HW and a calm sea it can't be seen. Shallow water lies up to 2 miles N and W of this rocky shoal.

Hayr al Khushaynah (26°57'N., 50°18'E.), a shoal with a least charted depth of 7.9m, lies about 5 miles WSW of Fasht Abu Safah.

Fasht Gharibah (27°00'N., 50°13'E.), with a least depth of 4.6m, lies on the NW side of the approach route to Ras Tannurah and Ju Aymah Oil Terminal. The S extremity of the shoal is marked by a lighted beacon with a racon.

Hayr Abu Subayti (26°54'N., 50°14'E.), with a least depth of 4.3m, lies 5.5 miles S of Fasht Gharibah.

Hayr as Safra (26°53'N., 50°08'E.), with a least depth of 2.1m, is marked at its SE and NW ends by lighted buoys.

Berth Limitations—North Pier and South Pier

North Pier

Berth	Minimum depth	Maximum draft	Maximum vessel length
6	13.6m	12.6m	219.7m
7	12.0m	11.0m	198.1m
8	14.1m	13.1m	219.7m
9	13.8m	11.8m	219.7m
10	15.1m	14.1m	283.5m
11	13.6m	12.6m	219.7m

South Pier

Berth	Depth alongside	Maximum vessel length
1	9.8m	207.3m
2	9.6m	189.0m
3	9.6m	170.7m
4	9.1m	170.7m

Hayr al Buhaym (26°52'N., 50°10'E.), with a least depth of 8.8m, lies close to Main Channel SE of Hayr as Safra.

Hayr al Wasiah (26°48'N., 50°12'E.), a sandy shoal with a least depth of 8.4m, lies on a ridge with depths of less than 15m extending N to Hayr Abu Subayti and S along the E side of the channel to 6 miles NE of Ras Tannurah.

Hayr Khawrah (26°40'N., 50°18'E.), an extensive shoal on the E side of the channel, has a least depth of 3.5m.

Ras Tannurah, an open roadstead E of a peninsula, is partially protected by off-lying reefs, shoals, and the peninsula. These shoals tend to ease the sea movement of the tankers loading alongside, but lighters and small craft have difficulty.

The harbor consists of Sea Island Terminal, described below; Ju Aymah Oil Terminal, described in paragraph 16.15; and Ju Aymah LPG Terminal, described in paragraph 16.16.

South Pier, about 366m long, is connected to shore by a causeway. The pier contains Berths 1, 2, 3, and 4. It has been reported that these berths are not presently in use. Berth limitations are, as follows: Range lights, shown about 0.5 mile NNW of the root of the causeway, lead close N of the N end of the pier.

North Pier, 701m long, located 0.5 mile N of South Pier, is connected to shore by a causeway. The pier contains Berths 6, 7, 8, 9, 10, and 11. Vessels up to 135,000 dwt can be accommodated. Bulk petroleum products can be loaded at all berths, while Berths 6, 8, and 10 also service LPG vessels.

Berth limitations for North Pier and South Pier are given in the table titled **Berth Limitations—North Pier and South Pier**.

West Pier, on the W side of Ras Tannurah about 0.5 mile NNW of the tip of the point, is a 96m long concrete mole with a depth alongside of 5.8m. Freighters with a draft of 5.5m discharge cargo alongside.

West Oil Pier, L-shaped and with a depth of 5.5m alongside its head, is used for bunkering small craft and loading coastal tankers. A submarine oil pipeline, laid S to Ad Dammam, is landed close to the N of the West Oil Pier. Beacons mark the extent of the submerged pipeline.

Sea Island Terminal, offshore berths lying 1.5 miles NE of N Pier, consists of four loading platforms, with four breasting dolphins on each side joined by a catwalk.

Sea Island Terminal—Berthing Limitations

Berth	Length	Minimum depth	Maximum vessel size
15	426m	26.5m	300,000 dwt
16	426m	26.7m	220,000 dwt
17	421m	25.5m	327,000 dwt
18	421m	26.4m	327,000 dwt
19	533m	25.5m	No limit
20	533m	25.6m	No limit

Note.—Vessels departing the terminal can have a maximum sailing draft of 21m at high water.

There are six active berths at Sea Island Terminal; Berth 12 and Berth 14 have lighted buoys, which prevent using the berths, moored alongside. The entire terminal is almost 1 mile long and has a depth of 26m alongside.

Loaded drafts are governed by the limiting depths in the departure channel, as well as the 1.5m underkeel clearance required.

Sea Island berths are usually reserved for very large tankers loading crude oil. The limiting dimensions are given in the table titled **Sea Island Terminal—Berthing Limitations**.

Aspect

A large oil tank farm is located within 1.5 miles N of Ras Tannurah.

Light and gas flares burn near the root of the causeway leading to North Pier; red obstructions lights, about 155m high, are shown from the flare structures.

The various gas flares are first seen on approaching port, especially a flare about 5 miles NW of North Pier. On closing port, the radio towers topped by lights, oil tanks, sheer legs, and towers on the wharves come into view.

Pilotage

Pilotage for vessels proceeding to or from the tanker berths at Ras Tannurah is compulsory. Vessels proceeding through Main Channel directly to Ras Tannurah Terminal board the pilot S of Lighted Buoy H, as advised by Ras Tannurah Port Control.

If the vessel is proceeding from Tanker Anchorage to a berth, the vessel will be boarded about 1.5 miles SE of the S end of Sea Island Terminal, dependent on weather and tidal conditions.

Outbound vessels of 150,000 dwt and over, with a draft of 18.28m or more, may request additional pilotage assistance to line up for the Deep Water Departure Channel. Such pilotage is compulsory for vessels with a draft of 20.73m or more. The pilot will remain on board until the vessel is aligned on a safe course for the Departure Channel.

Regulations

A vessel should send its ETA at Ras Tannurah Entry Lighted Buoy 72 hours, 48 hours, and 24 hours prior to arrival to Saudi ARAMCO. The message should be followed by an accurate ETA immediately upon departure from the previous port.

Vessels should contact Ras Tannurah Port Control on VHF channel 10 or 16 when within 100 miles of the port for anchoring, boarding, and berthing instructions.

Tankers should provide the following information:

1. ETA at Ras Tannurah Lighted Buoy.
2. Arrival and sailing drafts.
3. Last port of call.
4. Arrival displacement.
5. Oxygen content in cargo tanks.
6. Cargo requirements with sequence.
7. Status of previous defects, if any.
8. Tank pressures and temperatures (LPG vessels).
9. Current defects.
10. ISPS information (ISSC validity and level).

Inbound vessels should report to Ras Tannurah Port Control on VHF channel 10 on passing the following points:

1. Ras Tannurah Lighted Buoy (27°06.0'N 50°57.0'E).
2. Lighted Buoy RTE2 (26°47.0'N, 50°34.0'E).
3. Entry Lighted Buoy (27°05.0'N, 50°23.0'E).
4. Lighted Buoy A (26°56.2'N, 50°12.6'E).
5. Lighted Buoy C (26°48.3'N, 50°10.2'E).

All vessels shall monitor VHF channels 10 and 16 when underway in the approach channels to Ras Tannurah, in the area of the Ju Aymah Oil Terminal and the Ju Aymah LPG Terminal, in the Ras Tannurah Channel S of Lighted Buoy A, in the vicinity of Ras Tannurah Terminal, and in the anchorage areas of Ras Tannurah Terminal.

Outbound vessels should contact Ras Tannurah Port Control 1 hour prior to the completion of loading operations on channel 13. Outbound vessels at the anchorages off Ras Tannurah should contact Ras Tannurah Port Control on VHF channel 10 at least 30 minutes prior to hauling up.

Listening watches are to be maintained, as follows:

1. Inbound vessels—VHF channels 13 and 16 from S of Lighted Buoy A until the pilot boards.
2. When anchored in the South Holding Anchorage or the Freighter Anchorage—VHF channels 13 and 16.
3. When anchored in the North Holding Anchorage—VHF channels 10 and 16.
4. When berthed—VHF channels 13 and 16.
5. Outbound vessels—VHF channels 13 and 16 from pilot disembarkation until reaching Lighted Buoy A.

Tankers proceeding to and from Ras Tannurah with a length of less than 244m shall use East Channel and not Main Channel.

See paragraph 16.11 for further information on regulations.

Contact Information

Contact information for Port Control and the pilots can be found in paragraph 16.12 in the table titled **Damman Port/Ras Tannurah—Contact Information**.

Saudi ARAMCO can be contacted, as follows:

1. Call sign: ARAMCO Terminal Planner
2. VHF: VHF channels 12, 13, 14, and 16
3. Telephone: 966-13-8746861
4. Telex: 495-801220 SAMXB SJ

Ras Tannurah Port Authority can be contacted, as follows:

1. Telephone: 966-13-6734252
2. Facsimile: 966-13-6731397
   966-13-6731669

Anchorage

The holding ground within the anchorages off Ras Tannurah is reported to be only fair, with a varied bottom.

The anchorages here are exposed and difficult for boat and lighter work. Vessels should use a good s ope of cable in unfavorable weather conditions.

Tanker Anchorage, centered about 4 miles ENE of Ras Tannurah, shows charted depths of 18.5 to 30.5m, with a spoil ground charted near its center. Vessels with a draft of less than 18.2m use this anchorage. Vessels with a draft of greater than 18.2m can use the 21.9m swept area located about 1 mile N of Sea Island Terminal outside the charted anchorage prohibited area.

Freighter Anchorage, about 2 miles ESE of Ras Tannurah, shows charted depths of 10 to 14m. Anchorage for vessels carrying explosives lies just S of Freighter Anchorage, with charted depths of 10 to 12m. Anchorage can be taken SW of West Pier, in a depth of about 7.3m, hard bottom. This anchorage is not recommended as the tidal currents, even at neaps, are strong. The anchorage is sheltered from the shamal, but the kaus sends in a heavy sea. A line of mooring buoys lies on the W side of the anchorage.

Anchorage is prohibited within the vicinity of the berths and the submarine pipelines leading to them, all of which may best be seen on the chart.

Directions

See the channel descriptions and the Regulations topic in paragraph 16.11. The approaches to the loading berths may best be seen on the chart.

Cautions

At times there are strong tidal currents in the vicinity of Ras Tannurah. Near Sea Island, the tidal currents set N and S at velocities usually not exceeding 1 knot.

A ship rounding Ras Tannurah should have enough way on to offset tide rips and eddies. The N submarine oil pipeline, laid between Sea Island Terminal and the shore, is marked by a light shown from a pile structure 3.5 miles N of Ras Tannurah.

There are depths of 7.5 to 10.7m about 0.5 mile N and NNE of North Pier, near the maneuvering area for North Pier and Main Channel.

A well, with a least depth of 0.5m, has been reported to lie about 19 miles NE of Ras Tannurah Lighted Buoy, in approximate position 27°23.8'N, 51°06.1'E.

A lighted conductor pipe, extending about 15m above the surface and stabilized by eight anchors, stands about 11.5 miles NNE of Ras Tannurah Lighted Buoy in position 27°16'48"N, 51°02'57"E. Vessels should not pass within 1.5 miles of the pipe, which is reported (2010) to be radar conspicuous at a distance of 5 miles.

A dangerous wreck lies in the approaches to Ras Tannurah in position 27°09.8'N, 50°51.6'E about 8.5 miles ENE of the entrance to Ras Tannurah Main Channel and about 13 miles ESE of the end of Ju Aymah Departure Channel. The location of the wreck is best seen on the chart.

Abu Sayef Oil Field (26°59'N., 50°31'E.), best seen on the chart, lies S of the approach channel to Ras Tannurah. A circular anchorage area, with a radius of 1 mile and charted depths of 13.3 to 23.0m, lies off the SE corner of the oil field and is best seen on the chart.

Ju Aymah Oil Terminal (26°56'N., 50°02'E.)

World Port Index No. 48343

16.15 Ju Aymah Oil Terminal is an offshore oil-loading facility located about 7 miles NNE of **Ras al Juaymah** (26°49'N., 50°00'E.). A tank farm and a radio mast, marked by

red obstruction lights, are located close NW of the point.

The restricted area surrounding the oil terminal berths is restricted to vessels under pilotage proceeding to and from the loading berths. The SW corner of this area is contiguous with the NE corner of the restricted area for the Qatif Oil Field.

Winds—Weather.—See paragraph 16.1 for further information.

Depths—Limitations.—The channel to the terminal has a least charted depth of 7m in a shoal area just N of the port limits. A shoal, marked by a buoy, has a least depth of 11.5m, and lies just SW of the charted limits to the pilot boarding area. The area encompassing the Single Point Moorings, the LPG Jetty, and the LPG Anchorage lie within a swept area, the limits of which are best seen on the chart.

Ju Aymah Oil Terminal		
Berth	**Maximum depth**	**Maximum vessel size**
SPM No. 31	32.1m	500,000 dwt
SPM No. 32	33.8m	500,000 dwt
SPM No. 33	34.0m	500,000 dwt
SPM No. 34	35.0m	750,000 dwt
SPM No. 35	32.0m	750,000 dwt
SPM No. 36	32.2m	450,000 dwt

There are no draft limitations when departing. Six SPM berths, best seen on the chart, are connected to a central platform by a submarine pipeline. The limitations are given in the table titled **Ju Aymah Oil Terminal**.

Pilotage.—Pilotage is compulsory for the port. Pilots board by helicopter W of Gharibah Beacon (26°59.5'N., 50°13.0'E.). The helicopter service operates on VHF channels 11, 12, 13, 14, and 16.

Outbound vessels of 150,000 dwt and over, with a draft of 18.28m or more, may request additional pilotage assistance to line up for the Deep Water Departure Channel. Such pilotage is compulsory for vessels with a draft of 20.73m or more. The pilot will remain on board until the vessel is aligned on a safe course for the Departure Channel.

Pilots normally disembark by helicopter.

Regulations.—A vessel should send its ETA at Ras Tannurah Entry Lighted Buoy 72 hours, 48 hours, and 24 hours prior to arrival to Saudi ARAMCO. The message should be followed by an accurate ETA immediately upon departure from the previous port.

Vessels should contact Ras Tannurah Port Control on VHF channel 10 or 16 when within 100 miles of the port for anchoring, boarding, and berthing instructions.

Tankers should provide the following information:

1. ETA at Ras Tannurah Lighted Buoy.
2. Arrival and sailing drafts.
3. Last port of call.
4. Arrival displacement.
5. Oxygen content in cargo tanks.
6. Cargo requirements with sequence.
7. Status of previous defects, if any.
8. Tank pressures and temperatures (LPG vessels).
9. Current defects.
10. ISPS information (ISSC validity and level).

Inbound vessels should report to Ras Tannurah Port Control on VHF channel 10 on passing the following points:

1. Ras Tannurah Lighted Buoy (27°06.0'N 50°57.0'E).
2. Lighted Buoy RTE2 (26°47.0'N, 50°34.0'E).
3. Entry Lighted Buoy (27°05.0'N, 50°23.0'E).
4. Lighted Buoy A (26°56.2'N, 50°12.6'E).
5. Lighted Buoy C (26°48.3'N, 50°10.2'E).

All vessels shall monitor VHF channels 10 and 16 when underway in the approach channels to Ras Tannurah, in the area of the Ju Aymah Oil Terminal and the Ju Aymah LPG Terminal, in the Ras Tannurah Channel S of Lighted Buoy A, in the vicinity of Ras Tannurah Terminal, and when anchored in the North Holding Anchorage.

Vessels bound for the port may be instructed to anchor at the pilot station and wait. Vessels proceeding to the port should listen to the berthing schedules broadcast by HZY in advance of arrival. Inbound vessels proceeding directly to the boarding ground should radio the Ras Tannurah pilots on passing Ras Tannurah Lighted Buoy.

Outbound vessels should contact Ras Tannurah Port Control 1 hour prior to the completion of loading operations on channel 13. Outbound vessels at the anchorages off Ras Tannurah should contact Ras Tannurah Port Control on VHF channel 10 at least 30 minutes prior to hauling up.

Listening watches are to be maintained, as follows:

1. Inbound vessels—VHF channels 13 and 16 from S of Lighted Buoy A until the pilot boards.
2. When anchored in the South Holding Anchorage or the Freighter Anchorage—VHF channels 13 and 16.
3. When anchored in the North Holding Anchorage—VHF channels 10 and 16.
4. When berthed—VHF channels 13 and 16.
5. Outbound vessels—VHF channels 13 and 16 from pilot disembarkation until reaching Lighted Buoy A.

See paragraph 16.11 for further information on regulations.

Contact Information.—Saudi ARAMCO can be contacted, as follows:

1. Call sign: ARAMCO Terminal Planner
2. VHF: VHF channels 12, 13, 14, and 16
3. Telephone: 966-13-8746861
4. Telex: 495-801220 SAIMXB SJ

16.16 Ju Aymah LPG Terminal (26°52'N., 50°03'E.) (World Port Index No. 48342), an L-shaped pier, on the outer arm of which is the loading platform, is connected to the shore by a causeway extending 5 miles NNE from a position 1.5 miles SE of Ras Ju Aymah.

Depths—Limitations.—The LPG loading platform provides a berth on each side, in a depth of about 23.8m. Vessels of 25,000 to 200,000 dwt can be accommodated. The maximum arrival draft at the terminal is 16.3m; the maximum sailing draft is 23m.

Aspect.—Leading lights, in line bearing 244.75°, mark the approach leading into the anchorage area. The lights are exhibited from a causeway about 1 mile from the jetty head.

Pilotage.—Pilotage is compulsory. Pilots board in the LPG anchorage, about 2 miles S of Ju Aymah SPM No. 36. Arriving

LPG carriers will be instructed either to proceed to Northern Holding Anchorage or Ju Aymah pilot boarding position.

Outbound vessels of 150,000 dwt and over, with a draft of 18.28m or more, may request additional pilotage assistance to line up for the Deep Water Departure Channel. Such pilotage is compulsory for vessels with a draft of 20.73m or more. The pilot will remain on board until the vessel is aligned on a safe course for the Departure Channel.

Regulations.—A vessel should send its ETA at Ras Tannurah Entry Lighted Buoy 72 hours, 48 hours, and 24 hours prior to arrival to Saudi ARAMCO. The message should be followed by an accurate ETA immediately upon departure from the previous port.

Vessels should contact Ras Tannurah Port Control on VHF channel 10 or 16 when within 100 miles of the port for anchoring, boarding, and berthing instructions.

Tankers should provide the following information:

1. ETA at Ras Tannurah Lighted Buoy.
2. Arrival and sailing drafts.
3. Last port of call.
4. Arrival displacement.
5. Oxygen content in cargo tanks.
6. Cargo requirements with sequence.
7. Status of previous defects, if any.
8. Tank pressures and temperatures (LPG vessels).
9. Current defects.
10. ISPS information (ISSC validity and level).

Inbound vessels should report to Ras Tannurah Port Control on VHF channel 10 on passing the following points:

1. Ras Tannurah Lighted Buoy (27°06.0'N 50°57.0'E).
2. Lighted Buoy RTE2 (26°47.0'N, 50°34.0'E).
3. Entry Lighted Buoy (27°05.0'N, 50°23.0'E).
4. Lighted Buoy A (26°56.2'N, 50°12.6'E).
5. Lighted Buoy C (26°48.3'N, 50°10.2'E).

All vessels shall monitor VHF channels 10 and 16 when underway in the approach channels to Ras Tannurah, in the area of the Ju Aymah Oil Terminal and the Ju Aymah LPG Terminal, in the Ras Tannurah Channel S of Lighted Buoy A, in the vicinity of Ras Tannurah Terminal, and when anchored in the North Holding Anchorage.

Special regulations are in force at the terminal. The LPG anchorage, for cooling tanks, is shown on the chart centered about 3 miles NE of the terminal. The holding ground is fair and extra cable is recommended.

Outbound vessels should contact Ras Tannurah Port Control 1 hour prior to the completion of loading operations on channel 13. Outbound vessels at the anchorages off Ras Tannurah should contact Ras Tannurah Port Control on VHF channel 10 at least 30 minutes prior to hauling up.

Listening watches are to be maintained, as follows:

1. Inbound vessels—VHF channels 13 and 16 from S of Lighted Buoy A until the pilot boards.
2. When anchored in the South Holding Anchorage or the Freighter Anchorage—VHF channels 13 and 16.
3. When anchored in the North Holding Anchorage—VHF channels 10 and 16.
4. When berthed—VHF channels 13 and 16.
5. Outbound vessels—VHF channels 13 and 16 from pilot disembarkation until reaching Lighted Buoy A.

See paragraph 16.11 for further information on regulations.

Contact Information.—Saudi ARAMCO can be contacted, as follows:

1.	Call sign:	ARAMCO Terminal Planner
2.	VHF:	VHF channels 12, 13, 14, and 16
3.	Telephone:	966-13-8746861
4.	Telex:	495-801220 SAMXB SJ

Directions.—The Ju Aymah Departure Channel is open to vessels leaving the port for sea and has already been described in paragraph 16.11.

16.17 Qatif Oil Field (26°53'N., 49°58'E.), lying within a restricted area, the limits of which are shown on the chart, extends from 4 to 6 miles N from the coast in the vicinity of Ras al Ju Aymah and Ras al Qulayah.

Numerous well heads and associated structures usually exhibiting lights, submarine pipelines, and unlighted obstructions lie within the limits of the oil field. Great care should be taken by ships navigating in the vicinity.

The port of **Ras al Ghar** (26°54'N., 49°52'E.) (World Port Index No. 48341) is located about 2 miles N of the point of the same name. The terminal consists of five piers, with depths alongside of 10 to 12m, protected by a breakwater and connected to the coast by a causeway.

The port is approached through a buoyed channel which is best seen on the chart. The least depth in the channel is 10.6m. Lights, in line 214°, mark the last leg of the channel.

Pilotage is compulsory and should be requested at least 6 hours before arrival at the channel entrance. The pilot boards near Ras al Ghar Entry Lighted Buoy. The pilots can be contacted on VHF channels 16 and 67. Pilotage is available 24 hours.

Anchorage for cargo vessels is available in a charted area, entered about 4 miles NE of the port, in depths of 10 to 22.5m, bottom quality unknown. An explosives anchorage area lying N of the port is described in paragraph 16.18.

The coast between Ras Tannurah and **Ras al Qulayah** (26°51'N., 49°57'E.) is low and sandy. **Ras al Ghar** (26°52'N., 49°52'E.) is a cliff, located about 1 mile ESE of the root of the Ras al Ghar causeway. A large power plant is located 2 miles E of Ras al Ghar on the coast.

Jabal Zulayfayn, about 2 miles SW of Ras al Ghar, is a conspicuous black hill. Currents set parallel to the coast.

Jazirate Al Jurayd (27°12'N., 49°57'E.), an offshore sandy islet, is reef-fringed for at least 0.5 mile N and up to 0.1 mile S of the islet. A conspicuous round gray tower, 43m high, stands near the center of the island. A racon is located at an unlit beacon off the SE coast of the island.

Jazirat Jana (27°22'N., 49°54'E.), a sandy reef-fringed islet affording shelter from the kaus and shamal, is marked by a light. Stranded wrecks lie 0.5 mile E and 2.5 miles NW of the islet; a dangerous wreck, with a depth of 8.7m, lies 2.5 miles NNW of the islet.

Al Jubayl (Jubail) (27°05'N., 49°40'E.)

World Port Index No. 48338

16.18 Al Jubayl, originally built to relieve the congestion at Ad Damman, is essentially two ports sharing an artificial basin extending up to 5.5 miles offshore. Several other basins and

Al Jubayl—King Fahd Industrial Port Sea Tanker Terminal

Approach to Al Jubayl—Al Jurayd Light

Al Jubayl—Approach to Commercial Port

Al Jubayl—Commercial Port Berths No. 1 to 8

Al Jubayl Pilot Boat

harbors lie within the port area and are described below.

Saudi Ports Authority Home Page—The Ports
http://www.ports.gov.sa

Winds—Weather.—See paragraph 16.1 for further information.

Tides—Currents.—The tidal rise at Al Jubayl is 1.6m at MHHW, and 0.7m at MHW.

A W current, with rates of 1 to 3 knots, has been reported (2010) in the approach to the port. Currents of up to 2 knots have been reported (2011) in the vicinity of the piers.

Depths—Limitations.—The buoyed approach fairway to the port, entered about 9 miles ESE of Jana, shows general depths of about 22 to 53m as far as the S end of Freighter Anchorage.

From the S end of the deep water channel to the entrance fairways for the berthing areas, the roadstead shows depths of about 7.9 to 33m.

Commercial Port, the southernmost of the major commercial berthing facilities, offers 16 berths and is entered via a buoyed channel dredged to a depth of 14m.

Al Jubayl Fishing Harbor, S of Commercial Port, has depths of up to 3m.

King Fahd Industrial Port, composed of Industrial Quay and two Petrochemical Basins, is entered between the detached breakwater S of the port and the N breakwater, which extends 0.9 mile S of the causeway. The entrance to the port has been dredged to a depth of 16m.

Petrochemical Basin No. 1 lies between the N breakwater and a pier extending S from the causeway; four berths are located on W side of the basin and four berths are located on the E side.

Petrochemical Basin No. 2 lies W of the pier extending S from the causeway; there will be a total of seven berths in the basin when construction is completed.

Industrial Quay, extending S from the causeway, is located W of Petrochemical Basin No. 2; the ore unloaders alongside the berths are conspicuous. A shoal depth of 9.5m lies close SW of Berth No. 23.

Open Sea Tanker Terminal, located on an extension of the causeway, is nearly 1.2 miles long, with alongside depths of 26 to 28.5m. Four berths, numbered Berth No. 61 to Berth No. 64, are available, although only Berth No. 61 is operational.

King Abdul Aziz Naval Base (26°59'N., 49°42'E.) lies about 3 miles S of the entrance to the Commercial Port.

The area S of 27° 00'N and W of 49°43'E is a restricted area for use by authorized vessels only. The harbor is protected by breakwaters and provides berthing alongside five finger piers.

The N entrance to the harbor is approached via the Main Approach Channel, dredged to a depth of 12m at its inner end, although depths of as little as 11m have been reported (2005). The channel is marked by lighted buoys and range lights. The range lights, in line bearing 203°, lead through the breakwaters into port.

Within the harbor, there is a dredged depth of 12m, although lesser depths have been reported (2005).

The E entrance to the harbor, with depths of 3.1 to 7.1m, is approached by the Secondary Approach Channel, with depths

of as little as 7.1m, running parallel to and 1 mile E of the main channel and marked by range lights, in line bearing 203°.

Berth information is given in the accompanying table titled **Al Jubayl—Berth Information**.

Aspect.—Three conspicuous flares stand close together near the shore, about 2 miles NW of the town center. Al Jubayl water tower, which is conspicuous, stands near the shore about 1 mile S of the town center. About 2.5 miles further S is another conspicuous water tower, standing in the vicinity of the Naval Base. At night, the cranes in the Commercial Harbor, which are floodlit, are prominent.

Pilotage.—Pilotage is compulsory for all vessels greater than 150 gross tons and is available 24 hours. Pilots may be ordered through Jubayl Port Control and board in the vicinity of Lighted Buoy No. 7 or close E of Lighted Buoy No. 9, as requested.

Regulations.—Vessels should send an ETA 7 days, 5 days, 72 hours, 48 hours, and 24 hours in advance. A revised ETA should be sent when any changes occur.

Vessels should contact Jubayl Port Control on VHF channel 16 when passing Jubayl Fairway Buoy, giving the following information:

1. Vessel's length.
2. Beam.
3. Draft.
4. ETA.

The movement of LPG vessels is done during daylight hours only.

It should be noted that no type of ballast is permitted to be discharged directly to the sea. Clean ballast is discharged ashore.

Contact Information.—Contact information for the port is given in the table titled **Al Jubayl—Contact Information**.

Anchorage.—Outer Anchorage, which is the anchorage for tankers, lies in a charted area NW of the outer end of the approach channel, about 4 miles NW of Jazirat al Jurayd. The anchorage shows depths of 36 to 48m, bottom quality unknown.

Al Jubayl—Berth Information

Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
Commercial Port					
No. 1	212m	12.0m	—	See Note 1.	General cargo.
No. 2	212m	12.0m	—	See Note 1.	General cargo.
No. 3	212m	12.0m	—	See Note 1.	General cargo.
No. 4	212m	12.0m	—	See Note 1.	General cargo.
No. 5	212m	12.0m	—	See Note 1.	General cargo.
No. 6	212m	12.0m	—	See Note 1.	General cargo.
No. 7	212m	12.0m	—	See Note 1.	General cargo.
No. 8	212m	12.0m	—	See Note 1.	General cargo.
No. 9	300m	14.0m	—	See Note 2.	General cargo.
No. 10	300m	14.0m	—	See Note 2.	General cargo.
No. 11	250m	14.0m	—	See Note 2.	Grain.
No. 12	250m	14.0m	—	See Note 2.	Grain.
No. 13	250m	14.0m	—	See Note 2.	General cargo.
No. 14	250m	14.0m	—	See Note 2.	General cargo.
No. 15	250m	14.0m	—	See Note 2.	Containers and ro-ro.
No. 16	250m	14.0m	—	See Note 2.	Containers and ro-ro.
King Fahd Industrial Port—Industrial Quay					
No. 21	230m	12.7m	—	See Note 2.	Sulphur.
No. 22	230m	13.9m	—	See Note 2.	General cargo.
No. 23	240m	14.0m	—	See Note 2.	General cargo.
No. 24	250m	13.6m	—	See Note 2.	Iron ore.
No. 25	250m	13.2m	—	See Note 2.	Iron ore.
No. 26	230m	13.2m	—	See Note 2.	Bulk and bagged urea.

Al Jubayl—Berth Information					
Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
No. 27	245m	13.7m	—	See Note 2.	Bulk and bagged urea.
No. 28	245m	13.7m	—	See Note 2.	Bulk and bagged urea.
No. 29	255m	13.7m	—	See Note 2.	Bulk and bagged urea.
King Fahd Industrial Port—Petrochemical Basin No. 1					
No. 41	282m	15.1m	250m	See Note 3.	Chemicals and butane gas. Can accommodate vessels up to 80,000 dwt.
No. 42	282m	15.2m	250m	See Note 3.	Chemicals. Can accommodate vessels up to 80,000 dwt.
No. 43	282m	15.8m	250m	See Note 3.	Chemicals. Can accommodate vessels up to 80,000 dwt.
No. 44	282m	14.4m	250m	See Note 3.	LPG. Can accommodate vessels up to 80,000 dwt.
No. 51	282m	14.7m	250m	See Note 3.	Petroleum products. Can accommodate vessels up to 80,000 dwt.
No. 52	282m	16.1m	250m	See Note 3.	Chemicals and petroleum products. Can accommodate vessels up to 80,000 dwt.
No. 53	282m	15.6m	250m	See Note 3.	Chemicals and LPG. Can accommodate vessels up to 80,000 dwt.
No. 54	282m	16.3m	250m	See Note 3.	Chemicals and petroleum products. Can accommodate vessels up to 80,000 dwt.
King Fahd Industrial Port—Petrochemical Basin No. 2					
No. 31	282m	13.9m	250m	12.9m	Under construction. Will accommodate vessels up to 80,000 dwt.
No. 32	282m	13.6m	250m	12.9m	
No. 33	282m	13.2m	250m	12.9m	
No. 34	282m	13.4m	250m	12.9m	
No. 35	282m	13.2m	250m	12.9m	
No. 36	282m	12.6m	250m	12.9m	Chemicals. Can accommodate vessels up to 80,000 dwt.
No. 37	282m	13.8m	250m	12.9m	Chemicals. Can accommodate vessels up to 80,000 dwt.
Open Sea Tanker Terminal					
No. 61	348m	28.0m	350m	25.6m	Can accommodate vessels up to 300,000 dwt.
No. 62	348m	28.0m	335m	24.0m	Under construction. Will accommodate vessels up to 300,000 dwt.
No. 63	348m	28.0m	346m	24.0m	
No. 64	348m	28.0m	335m	25.0m	

Note 1.—The maximum permissible draft is 10.8m at low water and 11.4m at high water.

Note 2.—The maximum permissible draft is 12.6m at low water and 13.3m at high water.

Note 3.—The maximum permissible draft is 14.4m at low water and 15.2m at high water.

Al Jubayl—Contact Information			
	Commercial Port	**King Fahd Industrial Port**	**Port Control**
Telephone	966-13-3620600	966-13-3578000	—
Facsimile	966-13-3623340	966-13-3578011	—
Telex	495-831005 JUPT SJ	495-832031 JUBIPT SJ	—
Call sign	—	—	Jubayl Industrial Marine
VHF	—	VHF channel 67	VHF channels 16, 17, 20, and 67

Inner Anchorage, also charted NW of the approach channel, lies about 6 miles NE of the King Fahd Industrial Port and shows charted depths of 17.2 to 37.0m, bottom quality unknown. It should be noted that the pilot boarding ground overlaps this anchorage.

Naval Anchorage, centered about 5 miles ESE of King Fahd Industrial Port, shows charted depths of 10.1 to 32m, holding ground not stated.

Explosives Anchorage, charted about 9 miles SE of the terminal, offers depths of 11.6 to 25.0m.

Caution.—Aids to navigation in the area are reported (2005) to be unreliable. They may be missing, unlit, or out of position.

Depths less than those charted have been reported (2007) in the approaches to the port.

It has been reported (2010) that many buoys in the approach to the Commercial Port are small and difficult to distinguish, as well as being faded to almost white, making it difficult to discern the actual color of the buoy.

Numerous fishing nets lie in the approaches to the port. At night, dhows will shine a searchlight if a vessel approaches their lines and nets.

Al Jubayl Lighted Fairway Buoy

16.19 Al Barri Oil Field (27°12'N., 49°42'E.) adjoins the N side of the port of Al Jubyal and occupies the shallow bay Dawhat Abu Ali and its approaches and the vicinity N and E of Ras Abu Ali. The oil field, encompassed by a restricted area, contains many well heads and associated structures, some of which exhibit lights, and other submerged and unlit obstructions.

Special caution should be exercised when in the vicinity and vessels should keep well clear of the area. Less water than charted was reported about 10 miles SSW of Ras Abu Ali.

Saudi Arabia—Ras Abu Ali to the Saudi Arabia/Kuwait Border

16.20 Ras Abu Ali (27°18'N., 49°42'E.) is the E point of Abu Ali, an island forming the N side of Dawhat Abu Ali. A sand spit, with depths of 1.2 to 5.5m, extends 2.5 miles E from the point. The sea breaks heavily on the spit and ships should give it a wide berth. A tomb, in ruins, stands on a hill close within Ras Abu Ali.

The coast between Abu Ali and Ras al Qulayah, about 121 miles NNW, is fronted by numerous reefs, drying banks, and shoals, many of which are unsurveyed. The coast is low and sandy, with marshy ground inland. Most of the dangers are contained within the 40m curve, which lies 45 or more miles offshore.

There are several steep-to islets and reefs which lie as far as 57 miles offshore and are difficult to distinguish in hazy weather or after a shamal.

Jazireh-Ye Farsi (Jazurat al Farisiyah) (27°59'N., 50°10'E.), the outermost of five islets, is fringed by reefs which are clearly visible. Landing can be made on the W side of the islet, which is marked by a light and racon, and is a good radar target at 17 miles distant under normal conditions. Depths of less than 6m may exist as far as 1 mile off the islet.

Lighted production platforms lie about 20 miles SW, 12.5 miles SE and, in the SE part of a charted well head area, about 14 miles NW, respectively, of Jazireh-Ye Farsi. All the production areas are located within charted restricted areas.

Jazirat Al Arabiyah (27°47'N., 50°11'E.), a sand and rock islet fringed by a partly-drying reef, is marked by a cairn and light. Landing can be made only on the N side of the islet.

Jazirat Harqus (27°56'N., 49°41'E.), a low barren islet, is fringed by a reef which makes a landing impossible. The islet is marked by a light. Isolated shoal patches are charted in the area.

16.21 Jazirat Karan (Al Qiran) (27°43'N., 49°50'E.), a very low and level islet, is reef-fringed, steep-to, and marked by a light. A stranded wreck lies about 1.5 miles NNE of the island.

Anchorage can be taken off the SE side of the islet, in a depth no less than 31.1m, coarse sand, fair holding ground, and protected from the shamal.

Jazirat al Qurayyin (Jazirat Kurayn), a low sandy reef-fringed islet, is difficult to distinguish, including on radar. A light is shown from the islet.

An extensive but shallow bay is entered between the NW side of Abu Ali and **Ras az Zawr** (27°25'N., 49°19'E.), a low

Ras al Khair Port

sandy point. In the N part of the bay is an inlet extending W, known as Dawhat Musallamiyah; an inlet extending S is known as Dawhat ad Dafi.

Jazirat Qannah (27°22'N., 49°19'E.), an islet low in the W part and high in the E part, has a fort and round tower on its summit and a village at its N part. Sand banks extending about 2 miles NE of the islet front a boat basin, with a depth of 5.5m.

Dawhat Musallamiyah (27°25'N., 49°14'E.) is entered between Ras az Zawr and Jazirat Qannah. The island of Al Musallamiyah, on which is located a village, lies 5 miles within the bay entrance. Reefs and shoals, visible at high tide, and extending N from Jazirat Qannah, reduce the entrance of the bay to a width of 0.2 mile. Boats are able to reach the village through an intricate channel at HW. There is a conspicuous cliffy bluff on the mainland just S of the island. A branch channel leads S between the mainland and Jazirat Qannah to the village on that island.

Anchorage, unsheltered, can be taken, in depths of 7.3 to 9.1m, about 5 miles NE of the fort on Jazirat Qannah. An allowance of at least 1m of water should be made when anchoring due to the action of winds and tide lowering the water level.

16.22 Fasht al Kashsh (27°30'N., 49°30'E.), a large unsurveyed area with numerous reefs and drying reefs, best seen on the chart, lies with its center 9.5 miles E of **Ras al Ghar** (27°28'N., 49°18'E.). A microwave tower, position approximate, lies near the point.

Dangerous shoals, some of which break, lie as far as 20 miles N and NNE of Ras al Ghar.

16.23 Ras al Khair Port (27°32'N., 49°11'E.) lies about 7 miles NW of Ras al Ghar.

Depths—Limitations.—A buoyed approach channel, with a dredged depth of 16.2m over a width of 175m, leads to the port.

Berth Nos. 1 to 3, on the E side of the basin, have a total berthing length of 783m, with a depth of 15m alongside. Berth No. 4, on the S side of the basin, is a service jetty with an alongside depth of 6m.

Vessels with a draft of up to 13.5m can be accommodated at any time. Vessels with a maximum draft of 14.25m can be accommodated at high water.

Pilotage.—Pilotage is compulsory. Pilots board about 1.25 miles NE of the beginning of the buoyed channel in position 27°43'22.8"N, 49°24'27.0'E in the vicinity of Lighted Buoy RAZ1 and Lighted Buoy RAZ3.

Aspect—Landmarks.—A refinery lies about 1 mile S of the basin.

Range lights, in line bearing 231°, lead through the dredged channel and into the basin.

Contact Information.—The port can be contacted on VHF channel 16.

Anchorage.—Four circular anchorage areas, with charted depths of 20 to 25m, each with a radius of 1,000m and designated SA1 to SA4, are located ESE of the pilot boarding position and are best seen on the chart.

Caution.—Construction activities are in progress (2011) on the W side of the basin.

16.24 Between Ras al Ghar and **Ras at Tanaqib** (27°50'N., 48°53'E.), a low point rising to a flat-topped hill, there are numerous submarine pipelines, oil wells, platforms, etc., which ships should avoid approaching. The area is encompassed by a Restricted Area designation.

Port Tanaqib (27°46'N., 48°53'E.), located about 4 miles S of Ras Tanaqib within a Restricted Area, is comprised of a pier able to accept a vessel with a length of 60m and a draft of 5m. A channel, marked by lights, leads from seaward to the pier.

Ras Saffaniyah (27°59'N., 48°47'E.) is a low coastal point on the N side of which is a barge pier with several oil storage tanks standing near its root.

Fasht Buldani (28°00'N., 49°06'E.) is an unsurveyed danger area extending 21 miles offshore between Ras Tanaqib and **Ras al Mishab** (28°11'N., 48°38'E.). The area has many above and below-water reefs and shoals and should not be approached by day in depths of less than 30m; at night, an even wider berth is recommended. The approximate limits of the area are shown on the charts.

Caution.—An IMO-adopted Area to be Avoided, best seen on the chart, has been established on Fasht Buldani. All tankers, gas carriers, and chemical tankers, regardless of their size, and all other vessels greater than 50,000 gross tons, should avoid the area.

Ras al Mishab (28°07'N., 48°38'E.)

World Port Index No. 48348

16.25 Ras al Mishab, primarily a small dry cargo port, was originally built as a base of supplies for the Trans-Arabian Pipeline. There are eight berths, including one for the discharge of bulk cement.

Winds—Weather.—The winds and weather are similar to that of Ras Tannurah, except that the anchorage and wharf areas are more protected from N winds. This is because of their location on the lee side of Ras al Mishab. Visibility is often affected by dust in the atmosphere.

Tides—Currents.—The tides are diurnal, with a mean range of about 1.3m. It is reported that the maximum tidal range is 2m.

The currents in the area are irregular. Strong currents setting in a NW and SE direction are reported in the approach W of Jazireh-ye Farsi.

Depths—Limitations.—The dredged Entrance Channel from Fairway Buoy runs in an NE to SW direction. It is 125m wide and has a uniform depth of 11m. It has been reported that the maximum draft allowed to enter the port was 10m.

A pier connected to shore by a causeway, about 0.5 mile long, supplies alongside berthing. The pier is 400m long. There are four berths, with charted depths of 11.9m alongside, on each side of the pier.

The charted loading wharf about 1 mile NE of the head of the pier is no longer in service.

A barge pier lies at the head of a causeway, which lies about 0.5 mile WNW of the Main Wharf. The inner approaches to the barge pier are dredged to 3.6m.

Aspect.—Jazirat Mishab (28°10'N., 48°38'E.), close S of Ras al Mishab, has high cliffs on its E side and numerous 1.8m patches lying on a bank extending 3 miles E of the island and about 1 mile W of the channel.

A sandy ridge, covered at HW, extends E from the island to within 0.5 mile of the channel. A beacon marks the E edge of the ridge.

The coastal reef and shoals extend N of the beacon and adjoin the entrance channel. The harbor is primarily an open roadstead which is somewhat protected by the surrounding reefs and Ras al Mishab.

Jabal Amudah (28°10'N., 48°36'E.) is a 31m high dark hill which appears to have four hummocks when seen from seaward.

There are four conspicuous cement silos, from which lights are shown, on the pier.

Pilotage.—Pilotage is compulsory and is available during daylight hours only. The pilot boards about 5 miles ENE of Ras al Mishab.

Regulations.—Vessels should send their ETA and request for pilotage to the harbormaster 24 hours in advance, confirming 12 hours and 2 hours prior to arrival.

Contact Information.—The harbormaster may be contacted (call sign: Ras al Mishab) on 2182 kHz or VHF channel 9, 11, 13, 14, or 16. The harbormaster maintains watch from 0300 until 1400 each day except Friday; a continuous watch is also maintained beginning 12 hours before a vessel is expected.

Anchorage.—Anchorage is available, clear of the fairway, as charted, about 13 miles NE of Ras al Mishab. The harbormaster should be contacted for advice before anchoring.

A circular anchorage area, 1 mile in radius and best seen on the chart, is situated close E of the buoyed entrance channel. Foul ground lies close SE of the anchorage area. The anchorage area overlaps the Restricted Area for the Saffaniyah Oil Field.

Directions.—From the pilot boarding position vessels should steer S to the Fairway Buoy, which is moored 4 miles NE of the wharf. Passing close-to either side of this buoy brings the first pair of range beacons in line 217°. This alignment leads to the dredged buoyed channel. When the inner pair of range beacons are in line, they should be steered for on a bearing of 251°, which leads to the wharf.

Caution.—It is advisable to arrive at Jazireh-ye Farsi just before daybreak, as the light on the islet is more easily seen than is the islet itself by daylight.

Caution is necessary as the outer approach channel passes over a submarine pipeline contained within a Prohibited Anchorage Area, best seen on the chart.

16.26 Ras al Mishab (28°11'N., 48°38'E.) is a low sandy point faced in places with low cliffs. The depths off the coast between Ras al Mishab and Ras al Qulayah are irregular and offer no guide to a coastal approach.

In depths of less than 14.6m the bottom is sand or rock, but in greater depths it is mud. Except for small boats, there is no shelter from the shamal, which blows from the NNW and raises a sea along this coast.

Tidal currents set NNW and SSE and are strong at times. Between Ras al Mishab and Ras al Khafji, about 14 miles NW, the coast consists of sand hills.

Dawhat al Asli (28°20'N., 48°32'E.), a shallow bay, is contained between Ras al Mishab and Ras al Khafji.

Qassar Umm as Sahal (28°14'N., 48°40'E.), a patch which dries 0.5m, lies near the edge of the coastal reef extending 4 miles NE of Ras al Mishab.

Al Kumrah (28°21'N., 48°54'E.) is a detached shoal with a least depth of 0.8m. A gas/oil separator installation is located 1 mile SE of Al Kumrah. The facility consists of three lighted

platforms and a flare structure which is visible from a distance.

Numerous oil well structures, pipelines, and obstructions lie as far as 25 miles E of Ras al Khafji.

Ras al Khafji (28°24'N., 48°32'E.) is a small harbor basin located about 1 mile NW of the point with the same name, and close within the entrance of Khawr al Maqta, a constricted inlet. The basin is approached via a buoyed channel dredged to a depth of 5.5m.

Range lights lead through the center of the channel, which is marked by lighted buoys. Two wharves in the harbor have a depth of 5.5m alongside. There is a coast radio station in the harbor.

Caution.—A dangerous wreck lies close S of the range line.

Ras al Khafji Oil Terminal (28°26'N., 48°35'E.)

World Port Index No. 48349

16.27 Ras al Khafji is an oil terminal port. Oil wells are located in areas as far as 29 miles ENE of Ras al Khafji. Since there are many oil pumping structures, platforms, oil rigs, submarine pipelines, and flares in the area, use caution.

Winds—Weather.—The local weather is reported to be hot and dry. Prevailing winds are light and from NNW.

Tides—Currents.—The maximum range of tide is 1.8m. Tidal currents near the loading berths run parallel to the shore and have a maximum velocity of 1.5 knots.

Depths—Limitations.—Depths in the approaches and at the loading berths are adequate for a VLCC.

There are several detached shoal patches shown on the charts in the vicinity of the oil platforms.

A dangerous sunken rock, awash, is located about 17 miles NE of Ras al Khafji, N of Lighted Buoy No. 5.

A 0.7m patch, marked by Lighted Buoy No. 3, lies about 4 miles further E.

The oil-loading facilities located here consist of four offshore berths.

Berth No. 1 and Berth No. 2, located about 3 miles ENE of Ras al Khafji, are multi-point moorings able to accept vessels up to 243m long and up to 100,000 dwt. Vessels usually moor on a NNW heading with both anchors down, secured to one buoy forward, and three buoys aft. Berth No. 1 will accept a maximum draft of 14.3m, while Berth No. 2 will accommodate a draft of 15.2m.

Vessels berth at Berth No. 1 and Berth No. 2 during daylight hours only.

Berth No. 3 and Berth No. 4 are Single Point Moorings (SPM), located, respectively, 4.5 and 6.5 miles NE of Ras al Khafji; vessels from 100,000 to 300,000 dwt can be accommodated. Berth No.3 will handle alongside drafts of 16.5m, and up to 17.1m, with a suitable rise of tide. Berth No. 4 will take vessels with drafts of 19.5m, or up to 20.1m on a rising tide.

Aspect.—The oil tank farm and radio masts located close NW of Ras al Khafji are conspicuous. Flares on the point and flare stacks in the area of the offshore wells are prominent.

Pilotage.—Pilotage is compulsory for all tankers loading and unloading at the terminal.

The mooring master boards in the charted tanker anchorage area about 1.7 miles NE of Berth No. 4.

Regulations.—The vessel's ETA should be sent 72 hours and 6 hours in advance.

Vessels should confirm the ETA before arrival, inform Port Control of the time of anchoring, and maintain a continuous listening watch on VHF channel 16.

An IMO-adopted Traffic Separation Scheme, best seen on the chart, is located in the approaches to Ras al Khafji.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channel 16
2. Telephone: 966-13-7660555 (extension 5202)
3. Facsimile: 966-13-7662776
4. E-mail: tmd@agoc-aoc.com.sa

Anchorage.—A charted tanker anchorage, 2 miles in diameter, is located 8 miles NE of Ras al Khafji. There are charted depths of 20 to 22.5m in the anchorage; the holding ground is generally good, clay and mud bottom. Buoys are moored on the W and S edge of the anchorage.

An anchorage for dry cargo ships, 1 mile in diameter, is located 2.5 miles NNE of Ras al Khafji. Vessels should anchor within 0.5 mile of a lighted buoy moored in the center of the anchorage area. There are depths of 11.2 to 15.3m, good holding ground of clay and mud, at the anchorage.

Prohibited anchorage and fishing areas, designated on the charts, lie in the vicinity of the submarine pipelines and oil fields. Navigation, except to ships under direct orders of the Arabian Oil Company, is prohibited within the areas.

16.28 Ras Bard Halq (28°30'N., 48°30'E.) is a low white sandy point from which a sand spit extends NE. A partly sunken wreck and a 2.2m shoal patch are charted on the banks seaward of the spit. The Saudi Arabia/Kuwait border lies about 4.5 miles NW of Ras Bard Halq.

Caution.—A Mine Danger Area and a former mined area, both best seen on the chart, extend E and NE from a point about 5 miles NW of Ras Bard Halq.

Kuwait—Saudi Arabia/Kuwait Border to Ras al Qulayah

16.29 Khawr al Mufattah (28°39'N., 48°23'E.), a shallow creek, with a bar in the entrance, lies about 8 miles NNW of the Saudi Arabia/Kuwait border. Fishing craft frequent the inlet.

Vessels anchor and discharge cargo into barges off the inlet entrance. At HW, the barges are unloaded by cranes on a wharf inside the entrance. There is a radio station and small oil storage tanks near the wharf.

Ras az Zawr (28°45'N., 48°24'E.) is the extremity of a low sandy projection from which a spit with depths less than 5.5m extends about 5 miles NE. A shoal area, with a least depth of 9.4m extends as far as 6 miles ESE of Ras az Zawr.

Mina az Zawr (Mina Saud) Oil Terminal (28°44'N., 48°24'E.)

World Port Index No. 48356

16.30 Mina az Zawr (Mina Saud) is an oil-loading terminal located at Ras az Zawr. The terminal is connected by pipeline to the oil production center at Wafra, 31 miles NW.

The oil refinery, with its oil storage tanks, buildings, and warehouse, stands near the point and is reported to be a good radar target. A submarine oil pipeline is laid ENE for 1.5 miles from the point to the loading berths.

Winds—Weather.—During the summer months, the winds generally are light to moderate from the N and NW, with occasional NW winds of gale force. Winds are governed by the strength of the Southwest Monsoon outside the Persian Gulf.

During autumn and early winter, the weather is fine, but in late winter and spring, strong SE winds with rough seas are frequent, due to the approach of low pressure systems. Berthing may be hindered.

Tides—Currents.—Tides are a combination of diurnal and semi-diurnal. The range of tide averages 2.7m at springs and 1.5m at neaps.

The main direction of the flood current and the ebb current is 010° to 190° but is variable. At the berths the currents set NNE to SSW.

Depths—Limitations.—The main facility is a Single Point Mooring (SPM) about 4 miles ENE of Ras az Zawr. There is a depth of 19m at the SPM, which can accommodate vessels with the following characteristics:

1. Vessel size—80,000 to 400,000 dwt.
2. Vessel length—230 to 370m.
3. Vessel draft—13.0 (maximum arrival draft) to 17.6m (maximum departure draft).
4. Minimum underkeel clearance—2m.

Berth No. 2, about 2 miles WSW of the SPM, is only used if the SPM is damaged or under repair; there is a depth of 16.4m at the berth. Vessels up to 140,000 dwt can fully load while vessels up to 370,000 dwt can partially load. The maximum departure draft may not exceed 15.85m.

The local port authority should be contacted for further information.

Aspect.—The refinery flare is the most conspicuous object observed on approaching the berths. The high lighted radio mast is also very prominent, as is Ras az Zawr Light. A power station, with two prominent high chimneys at an elevation of 193m, stands close to the coast about 3.2 miles SSW of Ras az Zawr.

A directional light, bearing 253° and leading to Berth No. 2, is shown from the harbor tower about 0.7 mile SSW of Ras az Zawr.

A pier, showing a light from its E end, extends from the shore about 3 miles S of Ras az Zawr.

Pilotage.—Pilotage is compulsory. Mooring Masters in their capacity as pilots board tankers in the anchorage area and pilot them to their berths. They supervise the mooring and unmooring and advise on loading procedures as Company Representative.

Tankers should not close the loading berths without a pilot on board. The pilot boat is equipped with VHF.

Regulations.—The vessel's ETA should be sent, via the agent, 96 hours and 72 hours in advance, with confirmation sent 48 hours and 24 hours in advance.

Contact Information.—The terminal can be contacted, as follows:

1. Call sign Mina az Zawr Marine
2. VHF: VHF channel 16
3. Facsimile: 965-23950078

Anchorage.—Anchorage can be taken in the charted Tanker Anchorage located E of the terminal, in charted depths of 17.1 to 20.9m. Three anchor berths, designated A, B, and C, are located within the anchorage area as shown on the chart. A prohibited anchorage area, best seen on the chart, surrounds the terminal.

Directions.—Tankers approaching Mina az Zawr (Mina Saud) from the Persian Gulf should pass about 2 miles S of **Mandaira Reef Beacon** (28°56'N., 48°46'E.) and then steer a course of 242° for the anchorage and pilot station. Loaded tankers depart via the deep-water channel from Berth No. 2.

Caution.—Deep-draft tankers should avoid the shoals ESE of Ras az Zawr; when approaching the anchorage keep the refinery flare hearing less than 273°.

There are several oil fields with interconnecting submarine pipelines, along with numerous detached and charted dangers, lying off the coast of Kuwait.

16.31 Zuluf Oil Field (28°23'N., 49°14'E.) is centered about 37 miles E of Ras al Khafji. This installation is no longer in operation; however, the presence of oil rigs, etc. constitutes a hazard. An anchorage is charted S of the limits to Zuluf Oil Field. The local authorities should be contacted for information concerning this anchorage before attempting to use it

Marjan Oil Field and Feridoon Oil Field are adjoining oil fields located about 63 miles ENE of Ras al Khafji. Oil platforms and rigs from which lights are shown stand throughout the area.

Although fog signals are sounded from many of the oil structures, it is advisable to avoid this charted area, even in clear weather.

Anchorage.—Anchorage is available in a charted area centered about 7 miles S of Marjan Oil Field but the local authorities should be consulted before anchoring here.

Regulations.—A Traffic Separation Scheme leads between Zuluf Oil Field, to the W, and Maharah Oil Field and Marjan Oil Field, to the E. The details of the scheme are best seen on the chart.

Caution.—An submarine oil pipeline is laid from the Marjan Oil Field NE to Jazireh-ye Khark. All the above oil fields lie in restricted areas.

16.32 Lulu Oil Field (28°38'N., 49°25'E.), consisting of a ruined platform marked close SE by a buoy, is located 12 miles W of Feridoon. Hut Oil Field (Hout Oil Field) and **Durrah Oil Field** (Dorra Oil Field) (28°48'N., 49°00'E.) are extensive, with numerous oil platforms, rigs, and obstructions within the limits shown on the charts.

A submarine pipeline is laid S from Hut Oil Field to Ras al Khafji main pipeline terminal.

Sirus Oil Terminal (Soroosh Oil Terminal) (Cyrus Oil Terminal) (29°01'N., 49°29'E.)

World Port Index No. 48468

16.33 Sirus Oil Terminal lies in the Persian Gulf about 53 miles WSW from Jazireh-ye Khark. The area has several oil wells and structures which constitute a hazard to navigation.

There is a permanently-moored oil storage tanker, reputed to

be of 130,000 dwt, which is anchored close NE of the loading berth. The terminal operates 24 hours a day, 7 days a week, weather permitting.

Winds—Weather.—During November through March, severe SE storms occur, often with little or no advance warning. Tankers at anchor and at the loading berth must have their main engines ready for immediate use. Anchored tankers should run out an adequate scope of chain.

Depths—Limitations.—Vessels up to 300,000 dwt can be accommodated although it has been reported that the maximum acceptable dimensions are 70,000 dwt and a maximum length of 290m.

Pilotage.—Pilotage is compulsory. Mooring Masters, acting as pilots, board tankers about 2 miles SE of the storage tanker and remain aboard at the loading berth to advise on loading.

Regulations.—The national flag of Iran must be displayed while at the terminal and within Iranian territorial waters.

Quarantine officers will board tankers at the berth. The standard quarantine message should be sent 24 hours before arrival.

Vessels must send their pre-arrival information to the terminal 7 days prior to the accepted range or ETA, whichever is earlier. The vessel's ETA must be sent via facsimile (98-212-2664295) to the Iranian Offshore Oil Company (addressed to Production and Planning and Export Coordination, attention Bahregan Marine) 96 hours and 48 hours in advance. Vessels must also send their ETA to the terminal 72 hours, 48 hours, and 24 hours in advance.

Vessels should start contacting the terminal on VHF channel 11 beginning 4 hours prior to arrival.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channel 11
2. Telephone: 98-212-3388520
3. Facsimile: 98-212-3388520
4. E-mail: fsuhead@soroosh.iooc.ir
   fsuloadingmaster@soroosh.iooc.ir
   fsuccr@soroosh.iooc.ir

Anchorage.—Anchorage can be taken, in a depth of 45m, in the area best seen on the appropriate chart. Anchoring is prohibited SE of the oil terminal and in the pipeline area extending S from the S side of the island.

Directions.—All tankers should approach the terminal from the SE, using caution to avoid the storage tanker and oil structures.

Caution.—The terminal is surrounded by a restricted area.

A wreck, with a depth of 31m and marked close N by a lighted buoy, lies about 7 miles NW of the oil field.

16.34 Mudayrah Reef (28°56'N., 48°46'E.), lying 23 miles NE of Ras az Zawr, is a steep-to coral reef with a least depth of 1.4m. In fine weather, the reef extent is noted by the slight overfalls; in bad weather, the reef breaks. A light marks the reef.

Jazirat Qaruh (Jazirat Qaru) (28°49'N., 48°47'E.) is a low sandy islet encircled by shoals and a drying bank. The islet is a good radar target, at a distance of 7 miles, under normal conditions. The island is marked by a light.

Jazirat Umm al Maradim (28°40'N., 48°39'E.) is a sandy islet which is steep-to on the edge of its fringing reef. A 4.2m shoal extends about 2 miles ESE of the light marking the islet.

A drying reef, marked by a light, lies 2 miles NNW of the islet.

Kuwait—Ras al Qulayah to Khawr Abd Allah

16.35 Ras al Qulayah (28°53'N., 48°17'E.) forms the low NW point of Dawhat az Zawr, which indents the coast between the point and Ras az Zawr. The bay has depths of less than 11m and is encumbered with several reefs and shoals. A spit, with depths of less than 5.5m, extends about 4 miles NE of Ras al Qulayah.

Kuwait Naval Base (Sheik Mohamed Naser Al-Ahmed Naval Base) (28°52'N., 48°17'E.), protected by two breakwaters, is located close S of Ras al Qulayah. There are charted depths of 9.4 to 10.1m at North Jetty, Main Quay, and Main Jetty; a quay located on the inner side of the breakwater has charted depths of 9.7 to 11.5m alongside. The initial access to the base is via a buoyed channel with a sector light and then by two additional sector lights, which are all best seen on the chart. It has been reported (2014) the 265° sector light is marked by a visual range consisting of two green posts with red and white horizontal striped diamond-shaped boards; however, the forward range marker is low on the post and difficult to see. The 240° sector light is marked by a visual range of two white posts. Pilotage is not required but is recommended. Vessels should contacted Kuwait Naval Base Port Control 2 hours in advance on VHF channel 16 to confirm pilot pick up and to request permission to enter the channel. The pilot boards inside the breakwater. An anchorage for naval vessels, with a charted depth of 9.2m, lies 0.3 mile ESE of the head of the breakwater.

Caution.—A vessel reported (2013) a NW current, with a rate of 2.5 knots, prior to entering the breakwater.

An area in which anchoring and fishing are prohibited extends 1 mile N, 2.5 miles E, and 3 miles S from Ras al Qulayah.

16.36 The coast between Ras al Qulayah and Ras al Ard, about 30 miles NNW, is low, stony desert, brownish in color. A few miles inland are hills 61 to 91m high. To the NE of Ras al Ard, the coast is fronted by numerous reefs and shoals. Depths of 11m and less exist as far as 37 miles SE of **Jazirat Bubiyan** (29°43'N., 48°16'E.).

Jazirat Kubbar (29°05'N., 48°30'E.) is a sandy islet, about 4m high, that is covered with brush. Reefs encircle the islet. A rocky tongue, on which the sea breaks in bad weather, extends about 0.5 mile NW of the islet, which is a good radar target at a distance of 14 miles.

A dangerous submerged rock lies 0.5 mile NNE of the islet; a 1.8m patch lies 0.5 mile W of the islet.

Unsheltered anchorage can be taken, in a depth of about 20.1m, 0.5 mile SSE of the light on the islet.

Umm al Aysh (Taylor Rock) (29°01'N., 48°35'E.) is a detached coral patch, with a least depth of 3.2m, which breaks at times. A lighted beacon stands on the E side of the rock. In fine weather, there is no indication of its presence, but in bad weather it probably breaks.

Qitat Urayfijan (29°00'N., 48°16'E.) is a small detached steep-to coral reef with depths of less than 0.4m. A lighted beacon is located off the SE edge of the reef.

Caution.—A dangerous wreck, marked by a lighted buoy, lies close SW of the E boundary of the outbound lane of the Mina Al Ahmadi Traffic Separation Scheme, in position 28°59'48"N, 48°43'00"E.

Tidal currents in the vicinity of these islets and dangers set NW and SE and attain a velocity of 1.5 knots at springs.

Mina Abd Allah (Mina al Abdulla) (29°01'N., 48°10'E.)

World Port Index No. 48360

16.37 Mina Abd Allah is an oil-loading terminal on the E coast of Kuwait, about 5 miles S of Mina al Ahmadi.

Winds—Weather.—The main prevailing winds are from NW, which may cause sandstorms, and SE, which cause a heavy swell.

Tides—Currents.—There is a mean tidal range of 3m. The tidal current has a velocity of 0.5 knot to 2 knots.

Depths—Limitations.—Depths in the approach range from 14.6 to 18.3m. Mina Abd Allah Sea Island Terminal consists of two berths primarily used for loading.

Berth No. 19, the seaward berth, accommodates tankers from 25,000 to 276,000 dwt. The minimum depth of water is 17.9m. The maximum berthing draft is 13.7m; the maximum loading draft is 16.9m.

Berth No. 18, the inner berth, accommodates tankers from 25,000 to 90,000 dwt. The minimum depth of water is 17.3m. The maximum berthing draft is 13.7m; the maximum loading draft is 16.3m.

Aspect.—The terminal consists of an offshore loading berth and an offshore platform. The berth and platform are supplied by submarine oil pipelines leading to several large oil storage tanks and the refinery ashore.

A tank farm and refinery, as well as the gas flare, are all conspicuous. A prominent radio mast stands about 1 mile SSW of the refinery.

Range lights, located on shore close S of the oil tanks, lead from the anchorage to the platform.

Pilotage.—Pilotage is compulsory. The Mooring Master, acting as pilot, boards the ship about 1.5 miles E of Mina Abd Allah Sea Island Terminal and remains on board during loading operations to assist as company representative.

Regulations.—Weather permitting, ships are berthed day or night and may depart at any time. The vessel's ETA should be sent 72 hours, 48 hours, 24 hours, and 12 hours in advance through the agent.

Every ship entering and departing port between sunrise and sunset shall display its national flag and the national flag of Kuwait.

On entering, the ship shall display its International Signal letters. Outbound ships have priority over inbound ships.

Pratique may be granted following receipt of the standard quarantine message, transmitted 48 hours before arrival, or else by the Medical Officer at the anchorage or berth.

Mina Abd Allah, Mina Ash Shuaybah (paragraph 16.38), and Mina al Ahmadi (paragraph 16.39) are surrounded by a security zone. This security zone is marked by yellow lighted buoys numbered S1 through S17. Navigation within the security zone is controlled, as follows:

1. Vessels and tankers proceeding to the Mina Ash Shuaybah commercial port must obtain permission from the Mina Ash Shuaybah control tower on VHF channel 13 to obtain permission to proceed.
2. Vessels and tankers proceeding to Mina Abd Allah, the Mina Ash Shuaybah Petroleum Products Pier, or Mina al Ahmadi must obtain permission from the Mina al Ahmadi control tower on VHF channel 69 to obtain permission to proceed.
3. Small craft and fishing boasts are requested to avoid entering the security zone and to limit transit only through the following navigational passages:
   a. Mina Ash Shuaybah commercial port—A navigational passage of 090°/270° from Lighted Buoy S7 (29°02'36"N., 48°22.'18"E.).
   b. Fahaheel dhow harbor—A navigational passage of 030°/210° from Lighted Buoy S15 (29°10'03"N., 48°12'00"E.).

An IMO-adopted Traffic Separation Scheme, best seen on the chart, is located in the approaches to Mina Abd Allah.

Signals.—For additional signals used during the loading process see the table titled **Mina Abd Allah Loading Signals**.

Mina Abd Allah Loading Signals		
Day	**Night**	**Meaning**
Start up		
One red flag	One red light	A slow rate on the loading pumps
Two red flags	Two red lights	Full loading rate
Shut down		
One red flag	One red light	A slow rate on the loading pumps
Lowering the flag hoist	Extinguishing all lights	Stop the flow

The emergency shut-down signal is a continuous sounding of the ship's whistle.

Contact Information.—The port can be contacted, as follows:

1. Telephone: 965-23262859 (Port Authority)
2. Facsimile: 965-23262265 (Port Authority)
   965-23261329 (Harbormaster)

Port Control can be contacted, as follows:

1. Call sign: Mina al Ahmadi Port Control
2. VHF: VHF channels 16 and 69
3. Telephone: 965-23262859
4. Facsimile: 965-23261329

Anchorage.—Anchorage is available for vessels awaiting a berth at the Mina Abd Allah Terminal in the charted anchorage area located about 2 miles N of Qitat Urayfijan (29°00'N., 48°16'E.). Anchorage is prohibited in an area containing the oil terminal, as shown on the chart.

Mina Ash Shuaybah (Shuaiba) (29°02'N., 48°10'E.)

World Port Index No. 48357

16.38 The port of Mina Ash Shuaybah consists of a small craft harbor, two berthing moles, and an oil pier.

Winds—Weather.—The prevailing winds are from the NW. During the summer months, fresh SE winds raise a swell which may part mooring lines.

Kuwait Ports Authority Home Page

http://www.kpa.gov.kw

Tides—Currents.—The average tidal range is 2.5m during springs and 2m during neaps. Currents generally set in a N/S direction, with a velocity of up to 2 knots at springs. The flood sets S; the ebb sets N.

Depths—Limitations.—The port basin, the majority of which have been dredged to a depth of 14m, offers 20 dry cargo berths.

The Petroleum Products Pier extends 0.5 mile ENE from the knuckle of the S mole to a T-head, which provides four tanker berths. It has been reported (2006) that the pier is being extended to include two additional berths.

Berthing information for each berth is given in the accompanying table titled **Mina Ash Shuaybah Basin—Berthing Information**.

A pier, used for the export of liquid bitumen, is located close N of the port basin. Vessels up to 5,000 dwt can be accommodated.

Aspect.—Lights are shown from the heads of all piers and the dry cargo mole. Two oil flares, 0.5 mile SW of the root of the mole, are conspicuous.

The conspicuous Control Tower, 48m high and surmounted by a radar scanner, stands at the head of the S breakwater.

Pilotage.—Pilotage is compulsory and is available 24 hours. Pilots should be requested through Mina Ash Shuaybah Port Control. Tugs come alongside after the pilot boards and secure on the offshore side.

Pilots board, as follows:

1. Petroleum Products Pier—3.25 miles ESE of the facility.
2. Port basin—1.5 miles E of Petroleum Products Pier.

Mina Ash Shuaybah Basin—Berthing Information

Berth	Length	Depth alongside	Maximum vessel		Remarks
			Draft	Length	
Mina Ash Shubayah Basin					
No. 1	140m	10.0m	9.5m	120m	Bagged and bulk fertilizer.
No. 2	160m	11.5m	9.5m	120m	Bagged and bulk fertilizer.
No. 3	200m	12.0m	10.5m	180m	General cargo, clinker, and iron ore.
No. 4	175m	7.5m	6.7m	170m	See Note 1 below.
No. 5	175m	7.5m	6.7m	170m	See Note 1 below.
No. 6	258m	10.5m	10.0m	180m	Bulk sulphur. See Note 1 below.
No. 7	200m	12.5m	11.0m	180m	General cargo, clinker, and iron ore. See Note 1 below.
No. 8	200m	12.5m	11.0m	180m	General cargo, clinker, and iron ore. See Note 1 below.
No. 9	200m	14.0m	13.0m	200m	General cargo.
No. 10	200m	14.0m	13.0m	200m	General cargo.
No. 11	200m	14.0m	13.0m	200m	General cargo.
No. 12	210m	14.0m	13.0m	200m	General cargo.
No. 13	210m	14.0m	13.0m	200m	General cargo.
No. 14	210m	14.0m	13.0m	200m	General cargo and coke.
No. 15	220m	14.0m	13.0m	See Note 2 below.	Container and ro-ro vessels.
No. 16	220m	14.0m	13.0m	See Note 2 below.	Container and ro-ro vessels.
No. 17	220m	14.0m	13.0m	See Note 2 below.	Container and ro-ro vessels.
No. 18	220m	14.0m	13.0m	See Note 2 below.	Container and ro-ro vessels.
No. 19	225m	14.0m	13.0m	200m	Limestone and clinker.

Mina Ash Shuaybah Basin—Berthing Information					
Berth	Length	Depth alongside	Maximum vessel		Remarks
			Draft	Length	
No. 20	225m	14.0m	13.0m	200m	General cargo.

Notes:
1. Only usable in good weather only, as they are exposed.
2. No limit on vessel length, but subject to berth occupancy.

Mina Ash Shuaybah Petroleum Products Pier					
Berth	Length	Depth alongside	Displacement		Remarks
			Minimum	Maximum	
No. 31	428m	15.8m	5,000 dwt	120,000 dwt	Vessels should berth port side-to.
No. 32	303m	13.7m	5,000 dwt	65,000 dwt	Vessels always berth starboard side-to.
No. 33	412m	15.8m	5,000 dwt	120,000 dwt	Vessels should berth starboard side-to.
No. 34	328m	13.7m	5,000 dwt	75,000 dwt	Vessels always berth port side-to.

Regulations.—Ships berth heading into the current. Vessels over 198m in length berth/unberth during daylight hours only.

Vessels are required to have a minimum arrival draft of 3.1m forward and 4.6m aft.

Vessels send their ETA, vessel details, and cargo details 72 hours and 36 hours in advance. The confirmation of the ETA should be sent 12 hours in advance.

Vessels should establish VHF contact with the port when within range.

Vessels carrying explosives or dangerous cargo must declare quantities and categories of same when they report their ETA.

An IMO-adopted Traffic Separation Scheme, best seen on the chart, is located in the approaches to Mina Ash Shuaybah.

The National Flag of Kuwait must be displayed during daylight hours. Other regulations are similar to those for Mina Abd Allah.

For information on the security zone surrounding Mina Ash Shuaybah and reporting requirements, see Mina Abd Allah (paragraph 16.37).

Contact Information.—Port Control can be contacted, as follows:

1. Call sign: Mina Ash Shuaybah Port Control
2. VHF: VHF channels 9, 13, 14, and 16
3. Telephone: 965-23260038
   965-23260069
4. Facsimile: 965-23262943

The Port Authority can be contacted, as follows:

1. Telephone: 965-24848483
2. Facsimile: 965-24819714

Anchorage.—The charted Outer Harbor Anchorage, centered about 3 miles E of the Mina Ash Shuaybah Petroleum Products Pier, contains ten designated circular anchorage berths, each with a diameter of about 0.25 mile. The anchorage area has depths of 18.4 to 19.9m, good holding ground, sand and clay.

Anchorage is available for vessels awaiting a berth at the Mina Ash Shuaybah Petroleum Products Pier in the charted anchorage area located about 2 miles N of Qitat Urayfijan (29°00'N., 48°16'E.). This anchorage is also used by vessels awaiting a berth at Mina abd Allah.

Vessels waiting for bunkers or orders are not permitted to anchor W of 48°15.1'E.

Directions.—Vessels are urged to contact the local authorities for the latest information on regulations and approach routes for this port before planning a voyage here.

Caution.—The approach passes within 1.5 miles of the recommended tracks for Ras al Khafji and within 0.5 mile of the foul ground extending from Ras al Qulayah.

It has been reported (2009) that the port is closed when visibility in less than 1 mile.

Mina al Ahmadi (29°04'N., 48°10'E.)

World Port Index No. 48361

16.39 Mina al Ahmadi is one of the largest oil-loading ports in the Persian Gulf, especially when joined to Mina Abd Allah, Mina Ash Shuaybah, **Al Fuhayhil** (29°05'N., 48°09'E.), and **Abu Hulayfah** (29°07'N., 48°08'E.) as a complex.

The town of Al Ahmadi, located about 3 miles inland, is connected by pipeline with the oil field at Burqan and the installations in port.

Winds—Weather.—Weather conditions are generally good. The prevailing winds are NW in summer, raising seas 1 to 1.5m high. The shamal raises a moderate sea and at times rough seas will close the port. Daybreak is the most favorable time for a lull in the seasonal winds, which are strongest in the afternoon. The NW winds may also cause sandstorms.

During the winter months, fresh sustained SE winds raise a SE swell, which may cause ships to surge and part mooring lines at the berths.

Sudden fierce squalls, with winds up to 70 knots, have been recorded, especially during the transition months of April to May and November to December.

Tides—Currents.—The mean tidal range is about 1.2m. In the vicinity of North Pier and South Pier, the tidal current sets

Courtesy of Military Sealift Command (Eric L. Beauregard)

Mina Ash Shuaybah—North Mole (Berth No. 6 through Berth No. 14)

Mina Ash Shuaybah—Control Tower

Mina Ash Shuaybah—Central Basin

N on the flood and S on the ebb with a velocity of 1 to 1.5 knots.

At Sea Island, the flood tidal current sets NW and the ebb sets SE, at a velocity of 1 to 1.5 knots.

Depths—Limitations.—The least depth in the approach is 16.5m, although there is no specific approach channel.

The deep-draft departure channel is 28 miles long; it extends from the Sea Island Terminal to Madara Reef and is marked by lighted beacons and buoys. Depths in the departure channel range from 27.4 to 31m and over.

Two patches of 27.6 to 28m lie in the channel, about 9 miles and 14 miles, respectively, from Sea Island. A sunken wreck lies in 21m of water, about 3 miles ENE of South Pier.

The harbor consists of two piers and the Sea Island Terminal. One sea berth is located S of South Pier. Ships can berth day and night.

South Pier is a T-head pier connected to shore by a trestle 0.7 mile long. The T-head is formed by an oil pier extending N for 855m and the general cargo/oil pier extending S for 328m. Berth No. 7 and Berth No. 8 are used by small craft. Berth No. 9 is out of service. The construction affecting the E face of the South Pier has been completed (2011). What were formerly designated as Berth No. 1, Berth No. 3, and Berth No. 4 are now designated as Berth No. 9 and Berth No. 10.

New Oil Pier is an L-shaped structure extending over 1 mile ENE from the shore. The pier has four berths; two berths are located on its outer face, with two additional berths on berthing arms extending from its SSE face. The outer berths are approached through an area dredged (2004) to a depth of 18m. The outer face is being extended (2008) to accommodate two additional berths.

Mina al Ahmadi—Berthing Information						
Facility	Length	Maximum draft		Displacement		Remarks
		Berthing	Loaded	Minimum	Maximum	
South Pier						
* Berth No. 1	283m	12.2m	13.2m	35,000 dwt	126,000 dwt	LPG loading. Vessels always berth port side-to.
* Berth No. 3	283m	12.2m	13.2m	35,000 dwt	100,000 dwt	Oil loading/discharge. Vessels always berth port side-to.

Mina al Ahmadi—Berthing Information						
Facility	Length	Maximum draft		Displacement		Remarks
		Berthing	Loaded	Minimum	Maximum	
* Berth No. 4	293m	12.2m	13.7m	35,000 dwt	100,000 dwt	Oil loading/discharge. Vessels always berth port side-to.
Berth No. 5	233m	7.6m	11.5m	5,000 dwt	35,000 dwt	Oil loading/discharge. Vessels always berth starboard side-to.
Berth No. 6	215m	7.6m	11.5m	1,500 dwt	5,000 dwt	Oil loading/discharge. Vessels always berth starboard side-to.
Berth No. 10	320m	12.2m	14.0m	35,000 dwt	126,000 dwt	LPG loading. It is preferred that vessels berth port side-to.
* **Note.—**The construction affecting the E face of the South Pier has been completed (2011). What were formerly designated as Berth No. 1, Berth No. 3, and Berth No. 4 are now designated as Berth No. 9 and Berth No. 10.						
North Pier						
Berth No. 11	454m	15.2m	16.9m	35,000 dwt	315,000 dwt	Oil loading. It is preferred that vessels berth starboard side-to.
Berth No. 12	351m	15.2m	16.9m	35,000 dwt	315,000 dwt	Oil loading. It is preferred that vessels berth port side-to.
Berth No. 15	265m	10.0m	16.3m	35,000 dwt	120,000 dwt	Oil loading. Vessels always berth starboard side-to.
Berth No. 16	256m	10.0m	16.3m	35,000 dwt	120,000 dwt	Oil loading. Vessels always berth starboard side-to.

Bitumen Pier, extending from the shore about 0.2 mile N of South Pier, has a T-head about 100m in length, with alongside depths of 6m. It was reported (2002) out of service.

North Pier, located about 3.5 miles N of South Pier, is connected to the shore by a trestle about 0.8 mile long. The L-head of this oil pier extends NNW for 702m. There is a depth of 18m along the outer face and a depth of 16.7m along the inner face.

Sea Island Terminal (29°07'N., 48°17'E.), about 8 miles E of North Pier and South Pier, is a steel-piled structure standing in 28.5m of water. It consists of a central loading platform, with a high control tower and six mooring and four breasting dolphins, all interconnected by catwalks. Sea Island Terminal is partially destroyed and out of service. The S part was destroyed to sea level; the N part is used as a control room for loading operations at the CALM buoys, described below.

Lighted Buoy A, Lighted Buoy B, and Lighted Buoy C mark the run of the submarine pipeline from the terminal WSW to Mina al Ahmadi.

Berth No. 22, the Single Point Mooring (SPM) tower charted E of Sea Island Terminal, is in a cooled condition and is no longer in service (2002). At one time the berth could accommodate tankers of 120,000 dwt to 500,000 dwt, with a maximum berthing draft of 15.2m and a maximum loaded draft of 27.4m. The local authorities should be consulted for information on this berth.

Two Catenary Anchor Leg Mooring (CALM) Buoys, known as Berth No. 20 and Berth No. 21, are located 2.4 miles NE and 3.1 miles ENE of Sea Island Terminal. Tankers of 120,000 dwt to 550,000 dwt can be accommodated at the CALM berths. The maximum berthing draft allowed is 15.2m; the maximum loaded draft allowed is 27.4m.

Two new SPMs, designated as Berth No. 23 and Berth No. 24, are located in the vicinity of Sea Island Terminal and the CALM berths, about 1.5 miles NW and 1.7 miles WNW of Sea Island Terminal. Submerged pipelines, marked by lighted buoys, will lead from each SPM to the shore.

Aspect.—The large tank farm and refinery towers, conspicuous from offshore, are reported to be a good radar target at a distance of 26 miles.

A gas flare shows prominently about 1 mile WNW of the root of South Pier. The oil piers and several high stacks are prominent. At night, the entire area presents a sky-glow visible for many miles seaward.

Pilotage.—Pilotage is compulsory for all berthing and unberthing operations and for all movements within the port limits and restricted areas surrounding the offshore terminals.

The pilot, acting in the capacity of Mooring Master, for North Pier, boards the vessel 2.3 miles ESE of the pier. Pilots for South Pier and New Oil Pier board about 2 miles ENE of New Oil Pier. Pilots for the offshore terminal board 1.25 miles SE of SPM No. 21.

Berthing can be accomplished at any time of the day and night, weather permitting.

The pilots can be contacted on VHF channels 67 and 68.

Regulations.—The vessel's ETA should be sent 72 hours, 48 hours, 24 hours, and 12 hours in advance, with confirmation sent 24 hours in advance, to the Kuwait Oil Company.

Vessels should establish contact with Port Control when within VHF range.

The following information should be sent to the agent prior to arrival:

Mina Ash Shuaybah—Petroleum Products Pier from ENE

Mina al Ahmadi—New Oil Pier from SE

1. ETA and last port of call.
2. Any sickness on board.
3. Number of crew seeing a doctor or dentist and number of crew unprotected against smallpox.
4. All requirements for stores, repairs, provisions, etc.

The National Flag of Kuwait must be displayed within the port limits, which lie 1 mile N of North Pier and 3 miles S of South Pier. Ships at anchor awaiting a berth should advise the harbormaster of the time the ship anchored, as well as the ship's position relative to South Pier Control.

Anchored ships are required to be ready to berth on 1 hour notice from Port Control.

Usually, no tugs or launches will come alongside before the pilot boards, therefore the ship's crew must not signal for tugs.

The main engines must be kept ready for immediate use, as well as both anchors, while at the loading berths. Ships arriving to bunker only should be properly ballasted.

The authorities refuse to handle loaded ships for bunkers only.

Pratique is granted if the standard message is transmitted 48 hours before arrival; otherwise, it will be granted at the berth or anchorage.

An IMO-adopted Traffic Separation Scheme, best seen on the chart, is located in the approaches to Mina Al Ahmadi.

A restricted area and prohibited anchorage area, best seen on the chart, surrounds the approaches to Mina al Ahmadi and the oil terminals. Only vessels visiting the oil terminals may navigate in the restricted area. All other vessels should use the appropriate traffic separation scheme.

For information on the security zone surrounding Mina al Ahmadi and reporting requirements, see Mina Abd Allah (paragraph 16.37).

Signals.—Deep-draft ships, with a draft of greater than 21.3m, that are restricted as to movement in the channel, are required to display the following signals:

1. By day—a black cylinder.
2. By night—four red lights, vertically disposed.

Contact Information.—The terminal can as given in the table titled **Mina al Ahmadi—Contact Information**.

Mina al Ahmadi—Contact Information		
	Port Control	**Port Authority**
Call sign:	Mina al Ahmadi Port Control	—
VHF:	VHF channels 16 and 69	—
Telephone:	965-23262859	965-23261558
		965-23261899
Facsimile:	965-23261329	965-23262265
E-mail:	—	kduaij@kockw.com

Anchorage.—Vessels should contact the local authorities for the latest information on depths and anchorage locations before anchoring.

Anchorage for vessels awaiting a berth at North Pier or South Pier is available in an area centered about 2.5 miles S of Sea Island Terminal.

Anchorage for vessels awaiting a berth at the SPM berths is available in an area centered 6.5 miles ESE of Sea Island Terminal.

Outer Waiting Anchorage Area, for vessels without loading or discharge instructions, is 5 miles WSW of Umm al Aysh (29°01.5'N., 48°34.5'E.), clear of the Deep Water Departure Channel.

Anchorage is available in the charted Special Anchorage Area 3.5 miles SE of Sea Island Terminal. This anchorage, which has depths of 24 to 29m, is used by deep-draft vessels Sor vessels engaged in tank cleaning, cooling, or bunkering operations.

A charted Restricted Area surrounds Sea Island Terminal. Passage is prohibited except for vessels proceeding to or from the terminal. Anchorage is also prohibited in this area, except in an emergency.

Anchoring is prohibited in the charted restricted area and prohibited anchorage area, best seen on the chart, surrounding the approaches to Mina al Ahmadi and the oil terminals.

An prohibited anchorage area lies between the two Restricted Areas and is best seen on the chart.

Directions.—From **Ahmadi Lighted Buoy** (28°56'N., 48°53'E.), about 33 miles from port, a course of 296° for 22 miles will lead to a position about 2 miles N of Jazirat Kubbar. Then steer various courses to the berth or anchorage assigned by Port Control or the harbormaster. The least depth over this route is 17.1m.

Deep-draft ships depart via the lighted buoy channel shown on the charts between Sea Island Terminal and Kasr Mudayrah. Vessels in a light condition should keep clear of this channel.

Caution.—Mariners are cautioned to keep well clear of the port area and on no account are they to pass within a distance of 2 miles of North Pier or South Pier without a pilot on board.

A submarine cable, best seen on the chart, extends seaward from a point about 8 miles N of North Pier. Anchoring and trawling are prohibited within 0.5 mile of this cable.

Construction is in progress in an area extending about 11 miles seaward from North Pier, as best seen on the chart. This area includes Sea Island Terminal, the SPM located E of Sea Island Terminal (Berth No. 22), the CALM buoys (Berth No. 20 and Berth No. 21), and the new SPMs (Berth No. 23 and Berth No. 24).

16.40 The low sandy coast between **Abu Hulayfah** (29°07'N., 48°08'E.) and **Ras al Ard** (29°21'N., 48°06'E.) contains several villages, some of which have forts nearby.

Both Abu Hulayfah and Al Fintas are villages; the former contains a fort. Another conspicuous fort and minaret stand atop a hill about 5 miles SW of Ras al Ard. Palaces near the coast are prominent.

Ras al Ard (29°21'N., 48°06'E.), low and sandy, is marked by a light and a racon. A ferry harbor lies close W of the point. A prominent building stands close W of the ferry harbor.

16.41 Kuwait Harbor (29°25'N., 47°55'E.) is a large inlet indenting the coast between Ras al Ard and a point about 12 miles NNE. A mud flat, with depths of 9m and less, extends up to 29 miles SW, 18 miles S, and about 7 miles SE of the point. Mud flats extend up to 5.5 miles off the inlet's N and S shores.

A prohibited anchorage area stretches across the entrance of the inlet and is best seen on the chart.

Off Ras al Ard during SE winds, a very heavy sea breaks off the point. At springs, the tidal currents off Ras al Ard are strong. The NW shamal raises a considerable sea in the S part of the inlet, the wind being particularly strong between May and October.

Dust storms are common. Strong SE winds arise during winter months, raising a swell in the harbor. The mean tidal range is about 2.8m.

Jazirat Faylakah (29°27'N., 48°20'E.) lies on an extensive mud flat. This island, on the E side of the approach to the harbor, is very low. A small, but conspicuous tomb stands on the SW end of the island. A radio mast, about 300m high, is located l.5 miles E of the tomb. The village of Az Zawr is situated near the middle of the NW side of the island. There is a boat landing near the village.

Maskan (29°29'N., 48°15'E.), a sandy islet lying on an extensive mud flat, is marked by a lighted tower on its SE side and a lighted beacon on its NW side.

16.42 Jazirat Awhah (29°23'N., 48°27'E.) and **Ras al Yahi** (29°24'N., 48°28'E.), a sandy islet and a rocky drying patch, respectively, are marked by a light and a buoy. A cairn marks the S side of the islet.

Kuwait Towers

Ras Ajuzah (29°23'N., 48°00'E.) lies about 6 miles WNW of Ras al Ard. The point is low and fronted by a rocky flat and a spit extending about 2 miles NNW of the point. The end of the spit is marked by a light.

The point may be identified by Kuwait Towers, a group of slender conspicuous pointed towers standing close SW; the highest of the group reaches an elevation of 182m and is marked by obstruction lights.

Two conspicuous radio masts, each 76m high, stand 0.4 mile SSW and 0.5 mile S, respectively, of the point. A breakwater extends 0.3 mile NNE from the point.

Ras Ajuzah is at the NW end of a bight, indenting the coast for 5.5 miles WNW of Ras al Ard. The bight has depths of less than 5.5m; an inshore channel, showing depths of 2 to 21m, runs as far as **Salimiyah** (29°21'N., 48°04'E.).

The N shore of Kuwait Harbor is fringed by a mud flat, with depths of less than about 5.5m, that extends about 8 miles S from shore.

The S shore of the harbor is indented by three shallow bays, with the E part of the middle bay containing the port of Al Kuwayt.

Al Kuwayt (Kuwait) (29°23'N., 47°58'E.)

World Port Index No. 48370

16.43 The port of Al Kuwayt, also known as Mina ash Shuwaykh, is located on the S side of Kuwait Harbor and is entered between Ras Ajuzah and Ras Ushayriq (Ras ad Dawhah), about 8 miles W.

Dawhat Abu Talhah, at the head of the harbor, is filled with extensive drying sand and mud flats. Al Akaz is an extensive reef in the center of the harbor, which dries in patches, and consists of dead coral, mud, and sand.

Fasht al Hadibah (29°24'N., 47°57'E.) is the outer end of a shallow rocky spit on the W side of the approach to the port. A light is shown from a beacon close E of Fasht al Hadibah, about 2 miles NW of Ras Ajuzah.

Winds—Weather.—Prevailing winds are reported to be from the NW. Winds from NW or SE can create a heavy swell in the harbor.

Tides—Currents.—The tidal range is about 3.4m. Winds from the N tend to lower the height of tide while winds from the S tend to increase the height of tide.

Tidal currents off the entrance to the port, E of the light at the N end of Fasht al Hadibah, set ENE and WSW and may attain rates of 2 to 3 knots at springs; within the entrance the currents set fairly through the channel.

Depths—Limitations.—The city of Al Kuwayt is fronted for about 0.5 mile seaward by shallow flats which partly dry.

Boat basins, dry at LW, are contained within stone breakwaters marked by lights.

Ash Shuwaykh (29°21'N., 47°56'E.) (World Port Index No. 48370), the principal part of the port, has deep-water berthing facilities fronted by Mina ash Shuwaykh.

Outer Shuwaykh Channel (Outer Entrance Channel) leads 2 miles SW from a position between the lights marking Fasht al Hadibah and the spit N of Ras Ajuzah. Inner Shuwaykh Channel (Inner Entrance Channel), a continuation of Outer Shuwaykh Channel, leads SW to two basins, named Basin Approach and Bandar ash Shuwaykh.

Both channels, 150m wide and marked by buoys and beacons, should be used with caution; Outer Shuwaykh Channel

(Outer Entrance Channel) is also marked by a directional light. Both channels are reported (2002) to have a least depth of 7.0m; the deep center portions of the channels are reported (2002) to have a depth of about 9.0m, but are only 50 to 75m wide; depths of as little as 6.5m have been reported (2016) in the channel.

Berth information for Ash Shuwaykh can be found in the accompanying table titled **Al Kuwayt (Mina ash Shuwaykh)—Berth Information**.

A fishing harbor, dredged to a depth of 6.7m, lies on the NW side of the harbor.

Two dolphin berths, accepting vessels with a length of 183m and a maximum draft of 8m, are located at the extreme NE end of the harbor.

Aspect.—See paragraph 16.42 for landmarks located on Ras Ajuzah. High buildings and towers are prominent in the city.

Liberation Tower, 372m high, stands about 2 miles SW of Kuwait Towers.

A power station stands on the SE side of the entrance to the basin. A conspicuous flour mill stands 0.3 mile SW of the power station.

Pilotage.—Pilotage is compulsory for all merchant vessels 400 nrt or over entering the dredged channel. The pilot boards about 1 mile NE of the entrance to the dredged channel.

Pilots can be contacted on VHF channels 9, 13, and 16.

Regulations.—The vessel's ETA should be sent to the Al Kuwait harbormaster 24 hours before arrival, along with the following information:

1. Vessel's name.
2. Vessel's ETA at anchorage.
3. The IMO class number and UN page number of any dangerous cargo.
4. Quantity of cargo for Kuwait.
5. Whether the cargo is ready for discharge.
6. Whether cargo equipment is in order and specific capacity.
7. Draft fore and aft.
8. Length overall.
9. Crew's general health and whether they are vaccinated.
10. Ports visited in the 2 weeks before arrival.

There are coast and port radio stations located at the signal station. The visual signal station maintains a 24-hour watch, and messages, including arrival messages, can be passed to and from ships in the outer anchorage.

A continuous listening watch is maintained on port radio VHF channel 16. Ship's radios cannot be used alongside and VHF channels 12 and 16 can only be used to communicate with the signal station.

Vessels should maintain a continuous listening watch on VHF channel 16 when approaching Ras al Ard (29°21'N., 48°06'E.) from seaward. Vessels at anchor awaiting berthing instructions should listen on VHF channel 16, as follows:

a. 0400 to 0600.
b. 0800 to 1100.
c. 1600 to 1800.

Vessels should cable the port health officer with select information and a request for free pratique prior to arrival.

Al Kuwayt (Mina ash Shuwaykh)—Berth Information

Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
No. 1	198m	10.0m	175m	9.5m	General cargo and bulk grain
No. 2	208m	10.0m	175m	9.5m	General cargo
No. 3	183m	10.0m	175m	9.5m	General cargo
No. 4	177m	10.0m	175m	9.5m	General cargo
No. 5	186m	10.0m	175m	9.5m	General cargo
No. 6	198m	10.0m	175m	9.5m	General cargo
No. 7	198m	10.0m	175m	9.5m	General cargo
No. 8	212m	10.0m	220m	9.5m	Bulk cement
No. 9	200m	10.0m	220m	9.5m	—
No. 10	200m	10.0m	220m	9.5m	—
No. 11	200m	10.0m	220m	9.5m	—
No. 12	200m	10.0m	225m	9.5m	Containers
No. 13	180m	10.0m	225m	9.5m	Containers
No. 14	200m	6.7m	220m	6.0m	—
No. 15	180m	6.7m	180m	6.0m	—
No. 16	155m	6.7m	110m	6.0m	—
No. 17	200m	8.5m	220m	8.0m	—

Al Kuwayt (Mina ash Shuwaykh)—Berth Information					
Berth	Length	Depth alongside	Maximum vessel		Remarks
			Length	Draft	
No. 18	180m	8.5m	200m	8.0m	—
No. 19	200m	8.5m	220m	8.0m	Reefer vessels
No. 20	200m	8.5m	220m	8.0m	Reefer vessels
No. 21	200m	8.5m	220m	8.0m	Livestock vessels

Courtesy of Earth & Marine Envoronmental Consultants

Al Kuwayt—Liberation Tower

When the vessel reaches the anchorage and anchors, it should contact the port health officer on VHF channel 16. The Kuwait National Flag must be displayed at all times within the territorial waters of Kuwait.

It has been reported that vessels with a draft of 7.5m or greater could only enter the harbor at or near HW.

Contact Information.—The harbormaster can be contacted, as follows:

1. Call sign Kuwait Harbor Control
2. VHF: VHF channels 11, 12, and 16
3. Telephone: 965-22449154
   965-22435873

The Port Authority can be contacted, as follows:

1. Telephone: 965-24819757
2. Facsimile: 965-24818472
   965-24814196

Anchorage.—Vessels wishing to berth at Al Kuwayt must first proceed to the appropriate anchorage before berthing. No vessel is allowed to enter the dredged channel unless it has been assigned a berth by the harbormaster.

Anchorage areas A to E are shown and marked on the chart; ships should anchor according to requirements as tabulated on the chart. A dangerous wreck, marked close N by a buoy, lies between the E side of Anchorage Area C and the W side of Anchorage Area D, in position 29°25.7'N, 48°03.0'W. Other dangers in the anchorage areas are best seen on the chart.

Anchoring is not permitted in Mina ash Shuwaykh. A prohibited anchorage area extends NE and E of Ras al Ard.

Caution.—Vessels are urged to contact the local authorities for the latest information on regulations and approach channels before planning a voyage here.

It has been reported that navigational aids may be unlit or out of position and that harbor installations were damaged.

Take care to avoid the many small craft anchored off the dredged areas of the port, as they may be unlighted.

It has been reported (2009) that Outer Shuwaykh Channel (Outer Entrance Channel) lies 150m E of its charted position.

Construction of a causeway and artificial islands is underway in an area crossing Khalij al Kuwait W of Al Kuwait, in an area bounded by lines joining the following positions:

a. 29°21'16.8"N, 47°54'01.8"E.
b. 29°22'42.6"N, 47°53'58.4"E.
c. 29°34'39,6"N, 48°02'03.6"E.
d. 29°33'58.2"N, 48°04'55.2"E.
e. 29°21'39.0"N, 47°55'51.0"E.

16.44 Dawhat Kazimah (29°25'N., 47°48'E.), the inner part of Kuwait Harbor, is entered N of **Ras Ushayriq** (Ras ad Dawhah) (29°23'N., 47°51'E.), a point marked by a conspicuous chimney, about 61m high. The shores of this bay are low and sandy.

Umm an Naml (29°23'N., 47°52'E.) is a rocky islet lying on mud flats, which extend around the shores forming Dawhat Kazimah. Numerous detached and isolated rocky and sandy patches, some marked by buoys, are scattered throughout the bay; they are best seen on the chart.

Doha Harbor (Mina ad Dawhah) (29°23'N., 47°48'E.) (World Port Index No. 48374) is a dhow and coastal harbor is located SSW of **Qit at Abu Talih** (29°24'N., 47°48'E.), a small reef with a depth of 0.6m and marked by a lighted buoy. The channel to Doha Harbor, which has a least charted depth of 4.7m, is marked by lighted buoys. The harbor is also marked by a light. There are nine berths, with a total length of 2,600m and an alongside depth of 4.3m. Berthing is allowed during daylight hours only.

For pilotage information, reporting information, and radio listening watch requirements, see Al Kuwayt (paragraph 16.43).

Doha Harbor can be contacted, as follows:

1.	Call sign:	Mina Doha
2.	VHF:	VHF channels 14 and 16
3.	Telephone:	965-24875507
		965-24878453
4.	Facsimile:	965-24871217

Doha Power Station (29°22'N., 47°48'E.), with four prominent chimneys, stands near the coast on the S side of the bay 3 miles WSW of Ras Ushayriq.

Entry is prohibited in a rectangular area centered 2.5 miles NNW of Ras Ushayriq. The corners of the restricted area are marked by lighted buoys.

16.45 Jazirat Bubiyan (29°43'N., 48°14'E.), low and barren, partly covered at HW, lies with **Ras al Barshah** (29°35'N., 48°13'E.), its S point, located 3 miles NE of Kuwait Harbor. It is separated from the mainland NE by Khawr Abd Allah and from the mainland SW by Khawr as Sabiyah; the latter channel trends around the N end of Jazirat Bubiyan, separating it from Jazirat Warbah.

There are numerous rocks and drying patches in approaching Khawr as Sabiyah; the channel is only for small craft. The mud flat extends from Kuwait Harbor to about 3 miles E of Ras al Barshah.

It has been reported (2005) that a deep-water facility, to be opened in 2009, is under construction on Jazirat Bubiyan. The facility will consist of a ro-ro terminal, an oil terminal, and a general cargo port.

Jazirat Warbah (30°00'N., 48°04'E.) is low and flat. Warbah Spit, drying 0.6m, extends at least 2.5 miles E of the island, leaving only a very narrow channel into **Khawr Shetana** (30°02'N., 48°03'E.).

Khawr Abd Allah

16.46 Khawr Abd Allah (29°53'N., 48°20'E.), entered about 6 miles S of the entrance of Shatt Al Arab via the buoyed channel of **Khawr Al Amaya** (29°35'N., 48°55'E.), trends about 35 miles NW to Jazirat Warbah.

East of the E extremity of Jazirat Warbah (30°00'N., 48°09'E.), Khawr Abd Allah divides into two channels. The N channel, which has been dredged to accommodate ocean-going vessels, consists of two parts; Khawr Shatanah is the E part and Khawr Saka is the W part. Khawr Bubiyan, the S channel, is not recommended.

The channel about 4 miles above the W end of Khawr Saka is known as Khawr Umm Qasr; above that, it is known as Khawr az Zubayr.

Tides—Currents.—In Khawr Abd Allah, springs rise about 4.2m and neaps about 3.7m; mean LW springs have a rise of 0.6m. At Umm Qasr, springs rise 4.6m; neaps rise about 4.2m. It has been reported (2003) that tidal levels may be up to 1m less than predicted.

The tidal currents in the entrance of Khawr Abd Allah attain a velocity of l.5 knots in the spring on a rising tide and 2.5 knots on a falling tide. Tidal currents in the narrower sections of the waterway at the N end of Khawr Abd Allah, in Khawr Shatanah, and off Umm Qasr can reach a rate of 6 knots. Extreme care should be taken when transiting the area during lower low water; tidal heights have been reported to be as much as 1m lower than expected. In addition, a NW wind can lower the tidal height by up to 0.2m and delay low water by as much as 30 minutes; a SE wind will have the opposite effect.

Little is known about the non-tidal currents in Khawr Abd Allah. Currents are influenced by tidal, wind, and particularly river conditions. It is believed that a current sets S to SE from February to July due to the fresh water outflow which is greatest between May and July and least during October and November. During the dry season, which extends from September to December, the current is believed to set from E to W across the entrance.

Depths—Limitations.—The channel through Khawr Abd Allah and continuing up to Umm Qasr was dredged in 2005.

Umm Qasr from SE, distant about 1 mile

The channel has a width of about 200m. Dredged depths in the channel are, as follows:

1. Channel entrance (Lighted Buot No. 2/Lighted Buoy No. 3) to Lighted Buoy No. 16/Lighted Buoy No. 17—11.0m.
2. Lighted Buoy No. 16/Lighted Buoy No. 17 to Lighted Buoy No. 24 (E of Jazirat Warhah)—12.5m.
3. Lighted Buoy No. 24 (E of Jazirat Warhah) to close W of Lighted Buoy No. 34 (E entrance to Khawr Umm Qasr)—12.3m.

Caution is necessary as depths in the channel are subject to siltation and are liable to change. Mariners are advised to keep within the dredged channel as uncharted shoals may exist in the areas outside the dredged channel. Mariners are also urged to consult local authorities to obtain the latest information concerning controlling depths and maximum authorized drafts.

Several shoals are reported to lie in the approach to the Khawr Abd Allah and Umm Qasr.

Athan Shoal (29°44'N., 48°35'E.) has a least depth of about 2.7m.

Fasht al Ayk (29°45'N., 48°30'E.) is a detached bank of hard sand, which dries 0.9m.

Atlassi Shoal (29°54'N., 48°21'E.) has a least depth of 4.2m.

There are numerous other shoals of 1.8m and greater lying in Khawr Abd Allah.

Aspect.—The entrance of Khawr Abd Allah lies between **Ras al Qayd** (29°46'N., 48°22'E.) and Maraqqat Abd Allah, the extensive, partly drying flats lying NE. Both shores of the inlet are low alluvial land covered with reeds and grass and fronted by shallow mud flats.

Several beacons stand on the HW line on both sides of Khawr Abd Allah.

The channel through Khawr Abd Allah and continuing up to Umm Qasr is marked by lighted buoys.

Anchorage.—A holding anchorage for vessels bound for Umm Qasr lies about 3 miles ESE of the E extremity of Jazirat Warbah. The charted stranded wrecks should be given a wide berth.

Caution.—Aids to navigation are reported (2013) to be unreliable and may be unlit, out of position, or missing. Other uncharted buoys have been reported (2013) to exist within Khawr Abd Allah.

It has been reported (2003) that large deep-draft vessels navigating in Khawr Saka may encounter shallow water effects leading to a loss of control.

In addition to the charted dangers, many uncharted wrecks and obstructions have been reported (2005) in Khawr Abd Allah, Khawr Shatanah, and Khawr az Zubayr.

A dangerous wreck, partly uncovering at low water, has been reported (2007) to lie in mid-channel close N of the charted position of missing Lighted Buoy No. 22.

Several Former Mine Danger Areas (MDA), best seen on the chart, are located in Khawr Abd Allah. In a Former Mine Danger Area, mines could still present a hazard. Anchoring, fishing, or sea bed operations are not recommended anywhere within these areas. However, when anchoring is necessary, it should be carried out only within the designated anchorage areas, as directed by local authorities. Caution is also necessary, as drifting mines may be encountered anywhere.

Acts of piracy have been reported (2005) in the approaches

Umm Qasr—Berth 20

to Khawr Abd Allah.

Umm Qasr (30°01'N., 47°57'E.)

World Port Index No. 48399

16.47 Umm Qasr is situated on the W bank of Khawr Umm Qasr, about 4 miles NW of its junction with Khawr Saka.

Winds—Weather.—Heavy squalls may be experienced here, especially during late afternoon. As these squalls may occur without warning, vessels should be securely moored.

Tides—Currents.—The tidal rise at Umm Qasr is 4.2m at MHW, while at MLHW, the rise is 0.7m.

No tidal information is presently available for Khawr al Zubair. The current can attain a rate of 4 knots.

The local authorities and the pilot should be consulted for further information on tides, currents, and tidal currents.

Depths—Limitations.—The largest vessel to use the port was 48,000 dwt, with a draft of 13.2m.

South Port, the Iraq Container Terminal, and the Iraq Projects Terminal front Khawr Umm Qasr S of the entrance to Umm Qasr Basin. A shoal depth of 6m lies close E of Berth No. 8. Obstructions, with depths of 7m, lie close E of Berth No. 9.

North Port and the Basra Gateway Terminal lie along the SW side of Umm Qasr Basin, which has been reported (2013) dredged to a depth of 12.5m. See table titled **Umm Qasr—Berth Information** for detailed berth information.

Pilotage.—Pilotage is compulsory. Vessels bound for Umm Qasr or Khawr al Zubair will board the pilot in position 29°41'N, 48°46'E about 2 miles W of Al-Basra Oil Terminal (Mina al Bakr Terminal) (29°41'N., 48°49'E.) or in position 29°59'05.4"N, 48°12'41.4"E.

Umm Qasr—Berth Information

Berth	Length	Depth	Remarks
South Port			
No. 1	280m	9.0m	Bulk and general cargo.
No. 2	200m	10.0m	General cargo and wheat.
No. 3	200m	10.0m	General cargo.
No. 6	183m	9.0m	General cargo.

Umm Qasr—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
No. 7	183m	9.5m	General cargo.
No. 9	172m	8.0-9.0m	L-shaped jetty serving a cement complex.
Iraq Container Terminal			
No. 4	187m	10.0m	Containers.
No. 5	187m	10.0m	Containers.
Iraq Projects Terminal			
No. 8	260m	8.5m	Break bulk and project cargo.
North Port			
No. 10	208m	12.5m	Grain.
No. 11	200m	12.5m	General cargo.
No. 11A	363m	—	Containers.
No. 12	200m	12.5m	Containers.
No. 13	200m	12.5m	Containers.
No. 14	200m	12.5m	Containers.
No. 15	200m	12.5m	Containers.
No. 16	200m	12.5m	Containers.
No. 17	200m	12.5m	Containers.
No. 18	200m	12.5m	Containers.
No. 19	200m	12.5m	Containers.
No. 21	250m	12.5m	Containers, vehicles, and ro-ro cargo.
Basra Gateway Terminal			
No. 20	200m	12.5m	Containers.

Harbor pilots will board in the vicinity of Lighted Buoy No. 36, about 0.5 mile SSW of the S extremity of Jazirat Hijam (30°01'N., 47°58'E.), although it has been reported (2011) that the harbor pilot boards vessels less than 0.5 mile from the berths.

The river pilot can be contacted on VHF channels 14 and 16. The harbor pilot can be contacted on VHF channels 12 and 16.

It has been reported (2011) that pilots board from harbor tugs that are not marked as pilot vessels.

Regulations.—Vessels bound for Umm Qasr or Khawr al Zubair should send their ETA, on VHF channel 12 or 16, to Umm Qasr Port Control 48 hours, 24 hours, and 12 hours in advance, as well as to obtain the latest details concerning navigation in Khawr Abd Allah. Vessels should also report, on both inbound and outbound transits, when passing Lighted Buoy No. 23 and Lighted Buoy No. 24.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Umm Qasr Port
2. VHF: VHF channels 12 and 16

Anchorage.—Anchorage may be obtained in Khawr Umm Qasr, about 2 miles below the port.

Caution.—Caution is advised, as details on aids to navigation marking the channel are presently lacking. The local authorities and pilots should be contacted for the most current information.

Night or twilight transit of the approach channels to Umm Qasr is not recommended without a pilot.

Due to the existence of unexploded ordnance and numerous uncharted wrecks vessels should only anchor as directed by local authorities.

Less water than charted has been reported off Berth No. 3, Berth No. 4, and Berth No. 5.

16.48 Khawr al Zubair (Khor al Zubair) (30°11'N., 47°54'E.) (World Port Index No. 48004) lies about 11 miles upriver from Umm Qasr.

Tides—Currents.—The ebb current, which runs strongly and causes considerable eddies, can attain a rate of 3 knots along the berths.

Depths—Limitations.—Charted depths in the approaches to Khawr al Zubair are as little as 8.3m. Local authorities should be consulted for details of the latest controlling depths and the maximum authorized drafts.

Berth No. 1 is blocked in its approach by wrecks with a depth of 1.1m. Berth No. 2 to Berth No. 8 have been dredged (2005) to a depth of 8m. Berth No. 9, Berth No. 10, and Berth No. 11 have been dredged (2005) to a depth of 11.2m. Less wa-

ter than charted has been reported (2011) off the berths in the port.

Depths as shoal as 4.5m have been reported (2016) alongside and in the vicinity of Berth No. 9. All berths are subject to siltation as well as abnormal waters levels which may be as much as 1m less than expected at lower low water.

Contact Information.—The port can be contacted, as follows:

1. Telephone: 964-0780-1815784
2. E-mail: khoralzubair@iraqports.com

See Umm Qasr (paragraph 16.47) for information on pilotage, reporting requirements, and the approach channels.

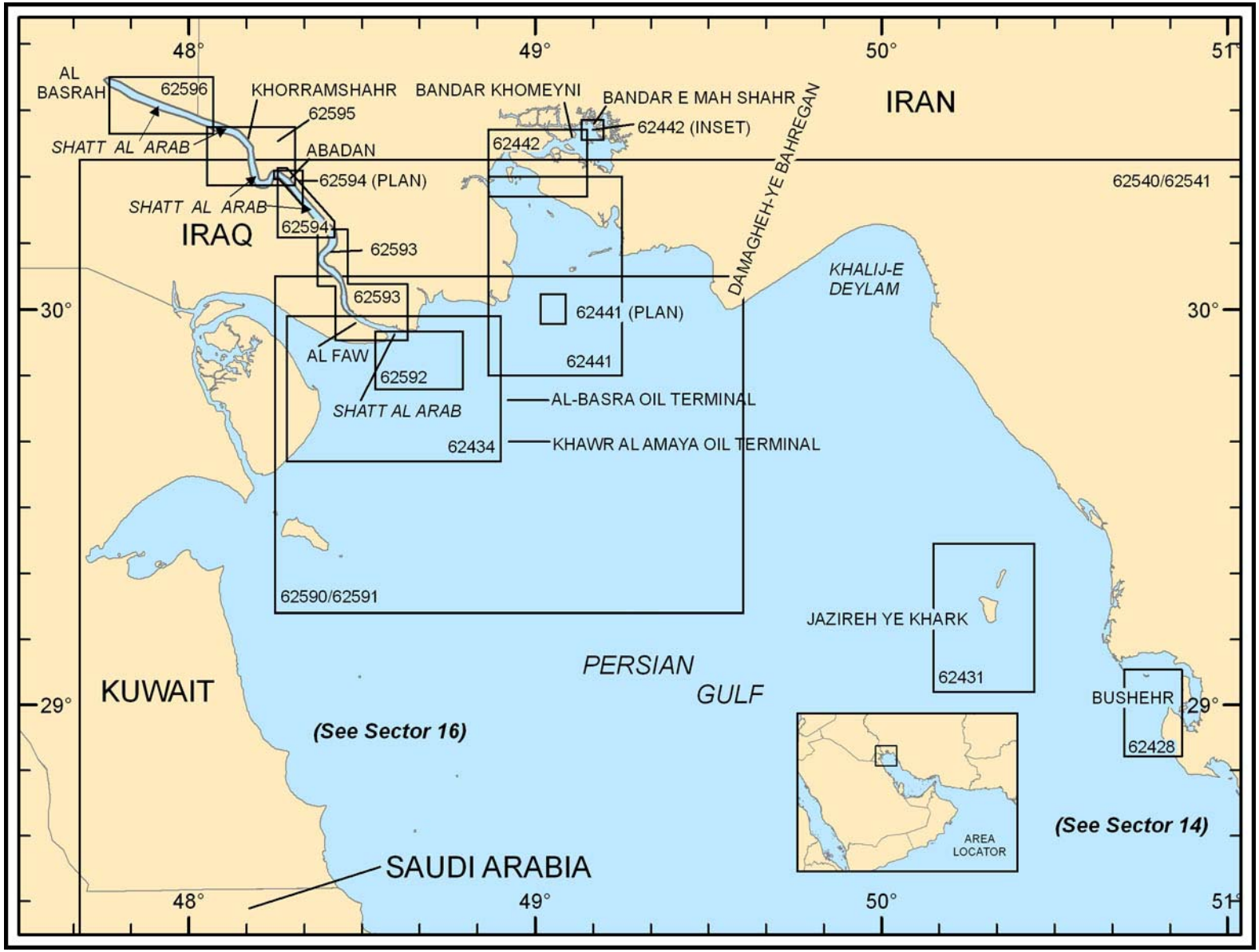
Anchorage may be obtained off the berths at Khawr al Zuhair, where the river is about 0.3 mile wide.

Caution.—Recent surveys (2003) in the approaches to Khawr al Zubair have shown that the dredged channels have silted up considerably, especially along their sides.

Due to the existence of unexploded ordnance, vessels should only anchor as directed by local authorities.

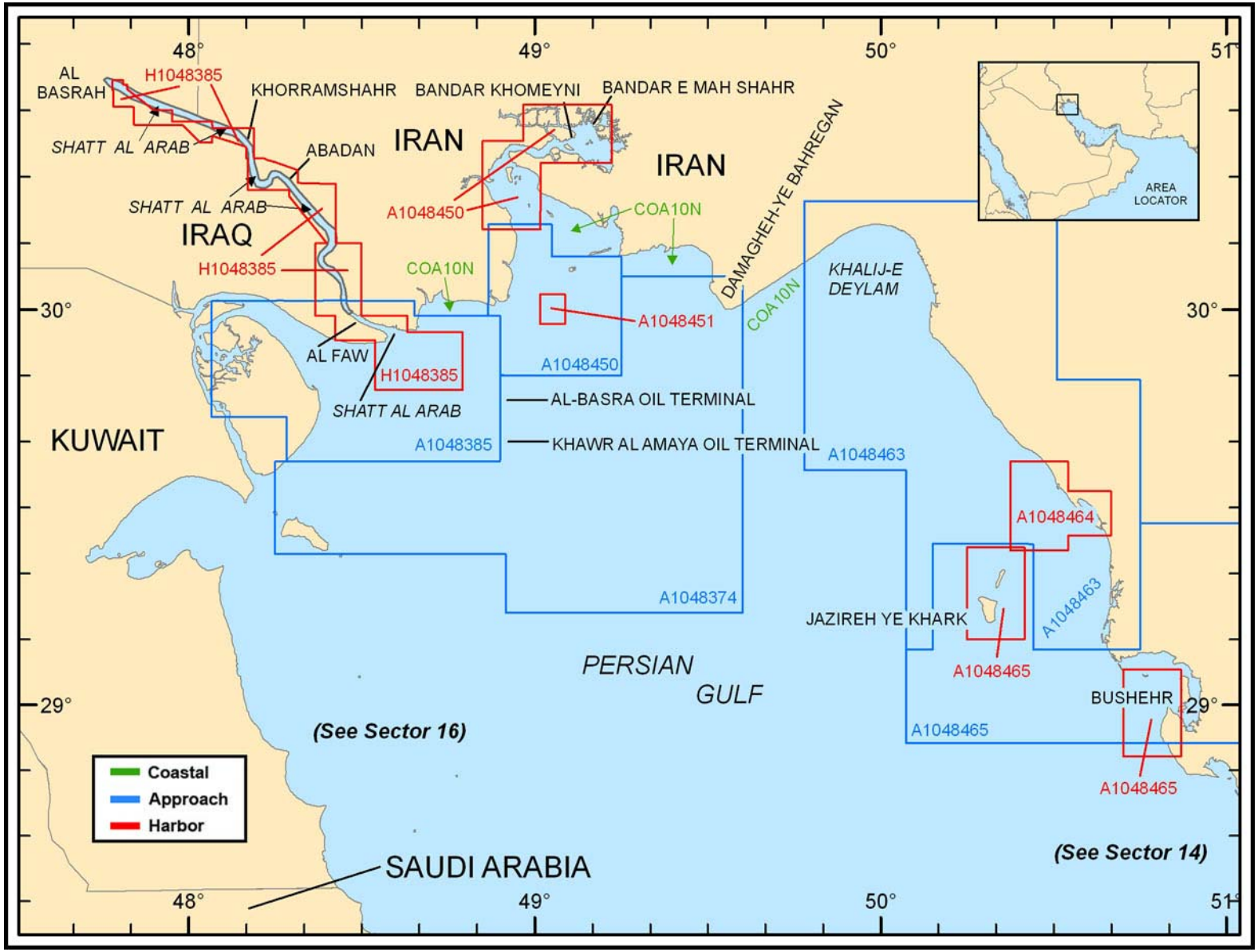
Many wrecks, obstructions, and stranded wrecks lie in Khawr al Zubayr and the approaches to Al Zubayr. The precise locations of some of these are not known. Certain wrecks may also contain unexploded ordnance.

16.49 Khawr al Zubair LPG Terminal (30°08'N., 47°55'E.) (World Port Index No. 48006) is located on the W bank of the river, about 4 miles S of Khawr al Zubair and 7 miles N of Umm Qasr. The facility consists of two berths for LPG vessels and one berth for tankers. Vessels up to 120m long, with a draft of 4.8m at LW and 7.9m at HW, can be accommodated; the northernmost berth is being dredged (2007) to accommodate vessels up to 150m long, with a draft of 8m at LW. Berthing and unberthing is done only between sunrise and sunset.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **17** — CHART INFORMATION



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SECTOR 17 — DNC LIBRARY INFORMATION

SECTOR 17

THE PERSIAN GULF—IRAN—BUSHEHR TO THE SHATT AL ARAB

Plan.—This sector describes the coast, with adjacent islands and dangers along the N part of the Persian Gulf, from Bushehr to the head of the gulf. Khowr-e Musa and the Shatt al Arab are also described. The sequence of description is NW from Bushehr.

General Remarks

17.1 The stretch of coast from Bushehr to the Shatt al Arab, excluding the complex indentations between Damagheh-ye Bahrgan and the Shatt al Arab, has a total length of about 210 miles.

The coast for the most part is low and mountains, with the exception of Kuh-e Bang, are some distance inland. Two small islands lie off the S part of this coast.

Important river and tidal inlet oil ports are reached through the head of the gulf. Banks of less than 5.5m extend from 1 to 1.5 miles offshore; bars and shoals constitute nearshore obstructions. Exposed anchorage is 2 to 3 miles offshore; several tidal inlets offer shelter for small craft.

It has been reported that the ports of Abadan and Khorramshahr are not in operation. The Shatt al Arab must be cleared of wrecks and extensive dredging is required before these two ports may be used by ocean-going ships again.

Drilling platforms, which may or may not show lights, may exist from time to time almost anywhere in this area. All vessels heading for Iranian ports should report to Bandar Abbas Port Control on passing Ras al Kuh, stating their ETA at the Strait of Hormuz and their destination.

If clearance is not granted before passing Bandar Abbas, then vessels should begin to proceed to the Bandar Abbas anchorage.

Several offshore oil fields, some lying within charted limits or restricted areas, are situated within the waters covered by this sector. Vessels should navigate with extreme caution within the vicinity of or within such fields, as numerous above and below-water charted and uncharted dangers to navigation exist here. Unauthorized vessels should avoid entering restricted areas.

Winds—Weather.—The dominant wind in this area of the Persian Gulf is the NW shamal, which prevails for 9 months of the year. In winter, the shamals average force 3 to 4, although occasionally they may reach force 7 for 3 or more days at a time. During the summer, although there is not much change in the prevailing wind direction, the winds tend to decrease in force. The shamal causes dust storms in the Persian Gulf, which reduce visibility at sea to less than 2 miles.

Other strong local winds are experienced, such as the SE kaus, the NE nashi, and the SW suhaili. In the summer, from April to September, the coastal regions experience temperatures of over 32°C.

The whole coast is almost rainless and humidity is high. In winter, from October to March, the coastal regions have a mild and relatively pleasant climate, with daytime temperatures from about 13° to 21°C.

Tides—Currents.—Currents in the Persian Gulf are variable in strength and direction. Tide and current conditions at the head of the gulf are very complex because of the variation in flow of water from the Shatt al Arab at various seasons, the presence of extensive drying mud flats and tidal inlets, and the influence of onshore or offshore winds.

Along the coast between Bushehr and Damagheh-ye Bahrgan, the tidal currents run generally parallel to it and have a velocity of about 0.5 to 1.5 knots. In the vicinity of Jazireh-ye Khark and Jazireh-ye Kharku, tidal currents set NW and SE at a rate sometimes exceeding 2 knots. Off Damagheh-ye Bahrgan, the tidal currents set almost E and W.

The tidal currents in the lower part of Khowr-e Musa set NNW and SSE, turning about at the time of HW or LW. In the vicinity of Bandar-e Shahpur, currents attain a velocity of 3 knots.

Depths—Limitations.—The offshore approaches to the coast between Bushehr and Damagheh-ye Bahrgan are clear, except for two small easily-avoided islands about 30 miles NW of Bushehr.

Nearshore approaches should be made with caution and during HW because of the mud flats and shoals which fringe most of this coast. The 20m curve ranges from 5 to 24 miles offshore. Between Damagheh-ye Bahrgan and the mouth of the Shatt al Arab, about 55 miles W, the offshore approaches are mostly shallow and obstructed by shoals and drying mud flats, except for dredged channels leading into Khowr-e Musa and the Shatt al Arab. The 20m curve will be found from 15 to 40 miles off the poorly-defined shore.

Regulations.—All vessels heading for Iranian ports should report to Bandar Abbas Port Control on passing **Ras al Kuh** (25°48'N., 56°17'E.), stating their ETA at the Strait of Hormuz and their destination. If clearance is not received before passing Bandar Abbas, vessels should proceed to the Bandar Abbas anchorage. For further information, see Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Caution.—It has been reported that some charted oil production platforms in the Persian Gulf may have been removed. In many cases, all that remains of the platform are pipes extending from 3.1 to 6.1m above the waterline; these pipes do not show up well on radar and are a hazard to navigation.

A Mine Danger Area (MDA), located W of Khawr al Amaya Oil Terminal and best seen on the chart, is located in the area covered by this sector. Mariners are warned that a greater mine threat exists within an MDA and no swept routes have been established in this area. Caution is also necessary, as drifting mines may be encountered anywhere.

Bushehr to the Shatt al Arab

17.2 **Bushehr** (28°59'N., 50°50'E.), a town at the N end of a 12-mile long peninsula, is situated on a rocky ridge having an elevation of not over 12m. The port facilities face the inlet

which separates Bushehr from the mainland to the E. Between Bushehr and Damagheh-ye Bahrgan, about 88 miles NW, the coastline is fairly regular, except for two large shallow bays.

The coast itself consists of a low, sandy plain of varying width, with large marshy areas in places and an occasional rocky hill. A rough mountain range backs the plain and heights up to 1,037m are within 35 miles of the shore.

Kuh-e Bang, about 300m high, is 52 miles NNW of Bushehr, its summit rising about 2 miles inland; its seaward face is precipitous and from S it appears as a conspicuous bluff.

Anchorage is generally poor because of exposure to the shamal or the kaus. Small craft can shelter in the bay N of Bushehr and in the many tidal inlets and stream mouths.

The best anchorage for large vessels is in the bay E of Damagheh-ye Bahrgan. Anchorage in the lee of Jazireh-ye Khark offers shelter from the shamal or a kaus, but the holding ground is rocky and indifferent.

Between Damagheh-ye Bahrgan and the estuary of the Shatt al Arab, about 55 miles W, the coast is a complex of indentations and is poorly defined. The shores are almost entirely marshy or swampy and fringed by extensive mud flats. Most of the shores are subject to temporary inundation and are intersected by many tidal inlets and several large rivers. Backing the marshy shores is a low swampy plain, which extends a considerable distance inland before giving way to desert plains. Several small villages lie along the river banks and on the more solid parts of the plain. The important ports of Bandar-e Khomeyni and Bandar-e Mahshahr are about 34 and 41 miles from the bar at the entrance of Khowr-e Musa. Abadan and Khorramshahr are about 42 and 56 miles inside the Shatt al Arab from the Rooka Channel entrance. Anchorage can be taken almost anywhere in the channels and inlets which intersect the fringing mud flats, and anchorage and berthing facilities are available at the four above mentioned ports; the degree of protection offered varies at the different anchorages.

Bushehr (28°59'N., 50°50'E.)

World Port Index No. 48470

17.3 Bushehr, once a major port for Iran, has been relegated to minor importance with the growth of the oil ports. However, Bushehr serves as the port for two provinces in Iran.

Winds—Weather.—The shamal occurs from June to September; dust and haze reduce visibility to less than 1 mile.

Gales from SW are frequent in winter; during January and February they prevent lightering operations about 3 days a week. The climate is hot and humid, with annual temperatures averaging 24°C.

Ports and Maritime Organization Home Page

http://www.pmo.ir

Tides—Currents.—Tidal currents are generally weak in the outer roadstead and attain a velocity of about 1 knot at springs in the Inner Anchorage; they set NNE to ENE and SW to WSW. Off the town in Khowr-e Soltani, the currents are very strong. The winds have a considerable effect on the currents and the water level. A 1.5 knot N to S current has been reported along this section of coast. The shamal causes the currents to turn and lower the general level, sometimes as much as 0.3m; the kaus raises the general level. The highest spring tide is during July.

Depths—Limitations.—An extensive flat, with depths of less than 5m, fills the bay between Bushehr and Ras osh Shatt, 9 miles NW, except for an area of deeper water known as Khowr-e Deyreh, which forms the Inner Anchorage. Obstructions and wrecks are charted in the vicinity of the channel entrance, about 4 to 5 miles W of **Jafreh** (28°58'N., 50°49'E.).

A flat, with depths of less than 2m, extends 2 miles NW and N of Bushehr; its NW end, known as **Ras ol Marg** (29°02'N., 50°48'E.), extends to the entrance channel leading to port.

The flat E of Ras ol Marg is known as **Kad Lakfeh** (Lakfeh Sands) (29°01'N., 50°49'E.). The sea seldom breaks on this flat, except at very LW or during strong winds.

Raqqat ol Ali (29°02'N., 50°46'E.), with general depths of less than 2.5m, is the sandy S extremity of an extensive flat extending S from **Ras osh Shatt** (29°06'N., 50°42'E.) to a position about 4 miles WNW of the N end of Bushehr.

The approach to Bushehr is made through two buoyed channels. The outer channel, which cuts through Khowr-e Deyreh, is 150m wide and has been dredged (2008) to a depth of 10.8m; the inner channel, which cuts through Khowr-e Bahrani, is 140m wide and has been dredged (2008) to a depth of 10.3m. The depths in the approach channels are maintained as far as possible by periodic dredging although silting may occur. A turning basin at the inner end of the inner channel has a dredged depth of 10.0m.

Vessels up to 30,000 dwt, with a maximum length of 200m, can use the port.

Bushehr—Berth Information

Berth	Length	Depth	Maximum vessel		Remarks
			Size	Draft	
No. 1	250m	11.0m	25,000 dwt	10.0m	Liquid bulk
No. 2	194m	12.0m	30,000 dwt	10.5m	Reefer and general cargo
No. 3	194m	12.0m	30,000 dwt	10.5m	Reefer and general cargo
No. 4	174m	9.5m	15,000 dwt	9.0m	Reefer and general cargo
No. 5	174m	9.5m	15,000 dwt	9.0m	Reefer and general cargo
No. 6	155m	9.5m	15,000 dwt	9.0m	Reefer and general cargo

Bushehr—Berth Information					
Berth	Length	Depth	Maximum vessel		Remarks
			Size	Draft	
No. 7	286m	5.0m	500 dwt	4.5m	Dhows
No. 8	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 9	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 10	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 11	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 12	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 13	110m	7.5m	5,000 dwt	7.0m	General cargo
No. 14	140m	2.4m	—	2.0m	General cargo

An oil pier about 100m long, with a depth of 7.5m alongside, lies on the SW side of Khowr-e Soltani.

A naval berth on the SW side of **Khowr-e Pudar** (28°58'N., 50°52'E.) is often available to commercial vessels with a draft up to 6.4m. This berth is suitable only for direct delivery or special cargo discharge due to the restricted size of the berth.

Aspect.—The harbor at Bushehr is formed by **Khowr-e Soltani** (28°59'N., 50°51'E.), which extends SE for 2 miles between the peninsula and the mainland. The NE side of the harbor is composed of drying mud flats; the W side, formed by the peninsula, is partly fronted by a seawall which dries at LW. A village and tower are conspicuous on the N coast of a very low island lying NNE of Bushehr.

The quarantine station and hospital are prominent on an island lying 2.5 miles NE of Bushehr. Radio towers and several buildings, including one with high arched windows and three towers standing at the S end of Jafreh, are all prominent.

The outer approach channel is marked by range lights in line bearing 043°.

Pilotage.—Pilotage is compulsory for all ships or craft entering the dredged channel and proceeding to Bushehr. The pilot boards ship at the Outer Anchorage, about 2 miles NW of the channel entrance.

Regulations.—Vessels send their ETA 48 hours in advance. The message should include details of cargo to be discharged.

To minimize departure delays, the date and time of arrival, as well as the ETD, should be sent to the Port and Quarantine Officer upon arrival.

All cargo documents (manifests, bills of lading, etc.) should indicate the discharge port as "Special Economic Zone, Persian Gulf Bushehr Ports."

No quarantine message is necessary if there is a clean bill of health. The Medical Officer boards the ship at the Outer Anchorage to grant pratique. The national flag of Iran must be displayed at all times while the ship is in port.

Contact Information.—The port can be contacted, as follows:

1. Telephone: 98-771-2252051-17
2. Facsimile: 98-771-2252051-17

Anchorage.—Ships waiting to enter Khowr-e Soltani, or whose draft will not permit them to enter the Inner Anchorage, should anchor in the Outer Anchorage as convenient NW of the entrance to the dredged channel. The anchorage can accommodate vessels with a maximum draft of 11.0m. The anchorage is open to the shamal and the kaus.

A small vessel may anchor, temporarily, in a depth of about 4m, with the building with two towers, standing 1.5 miles NNE of Jafreh, bearing about 080°, distant 0.5 mile.

Khowr-e Deyreh (29°01'N., 50°48'E.), containing the Inner Anchorage, is an area about 1 mile long, with depths of 4.9 to 6m, mud, good holding ground. The anchorage is approached through the outer entrance channel. The farther NE anchorage is taken, the better the shelter from the shamal.

Directions.—Approaching from SE, a vessel should pass about 6 miles off Ras-e Halileh and proceed NW, in depths not less than 11m, until the Outer Anchorage is reached. Depths decrease regularly as the coast is approached.

From the Outer Anchorage, steer in the fairway of the buoyed channel to the Inner Anchorage. The range beacon alignment of 043° should be strictly adhered to. From the Inner Anchorage, steer through the buoyed channel, whose axis runs 143° to 323° to the harbor.

The turn into this fairway is sharp, therefore caution is advised.

Caution.—A ship bound for Khowr-e Soltani should note that a turn of 100° must be made at the junction of the outer and inner channels where the width is 0.5 mile. The tidal currents set E and W across the mouth of Khowr-e Soltani and off the town the currents are strong. The shamal lowers the water level; the kaus raises it.

It has been reported (2010) that significant development has occurred in the port, especially near the entrance to Khowr-e Soltani (28°59.0'N., 50°50.6'E.), and that lesser depths than charted may exist in the approach channel due to siltation. Local authorities should be contacted for the latest information.

Jazireh-ye Khark (Kharg Island)

17.4 Jazireh-ye Khark (Kharg Island) (29°14'N., 50°19'E.) and Jazireh-ye Kharku lie about 19 and 21 miles WNW and NW, respectively, of **Ras osh Shatt** (29°06'N., 50°42'E.).

Jazirat-ye Khark, the S and larger of the two islands, has table-topped hills running N and S throughout the island.

About 0.5 mile NE of the summit is Mir Mohammed Tomb, a conspicuous conical tower topped by a small dome.

Hills that are at the S end of the island terminate in several precipitous bluffs on which there are detached hummocks.

The hills at the NW part of the island terminate in cliffs. A wedge-shaped hill at the N end of the island is prominent. Gas flares, some burning from towers, are conspicuous from the offing.

A lighted radio mast is conspicuous, and a tank farm near the S and SW end the island, appears prominently.

The W coast of Jazireh-ye Khark consists of several rocky points, between which are sandy beaches; the hills on that side end abruptly in cliffs. On the E side of the island is a cultivated plain terminating NE in a low, sandy point, on which is situated the airport.

A high radio mast, marked by red lights, stands near the NE end of the island. A naval boat basin, protected by breakwaters, is situated about 1 mile W of the NE extremity.

Fishermans Harbor, protected by a breakwater, is situated 0.5 mile W of the NE end of the island.

Jazireh-ye Khark is fringed by a reef which extends as far as 0.4 mile offshore. A sandspit, with a least depth of 4m, extends almost 1 mile E from the NE end of the island.

A velocity of 2 knots or more is attained over the spit with a SE tidal current.

A bank with depths less than 18.3m extends 1.5 miles SE from the SE side of the island.

Jazireh-ye Kharku (29°19'N., 50°21'E.), controlled by the Navy, is an uninhabited very low island, composed of white sand covered by coarse grass.

Except off its steep-to N end, the island is reef-fringed for almost 1 mile offshore. There is a light shown from the N end of the island. Submarine oil pipelines connect the islands with the mainland. The waters adjacent to the island are prohibited to commercial shipping.

In the channel between the two islands, the fairway is about 1 mile wide, with irregular depths ranging from 7.3 to 11.3m.

A depth of 9.7m can be carried through the channel. Local knowledge is necessary.

An obstruction lies about 1.3 miles E of the S extremity of the island. A stranded wreck lies 1.5 miles ESE of the S extremity of the island.

Caution.—It has been reported (2005) that lesser depths than charted exist in the approaches to Jazireh-ye Khark and Jazireh-ye Kharku.

17.5 Kharg Island Oil Terminal (29°14'N., 50°20'E.) (World Port Index No. 48465), the principal crude oil-loading terminal in Iran, is situated about 0.5 mile E of Jazireh-ye Khark. Other facilities are situated SW and W of the island.

Winds—Weather.—The prevailing winds are from the NW, so the loading pier is partially sheltered. Southeast winds, strong during the winter, may cause berths to become untenable.

From May to September, the weather is very hot and humid, whereas from November to March, the weather is mild and pleasant.

Tides—Currents.—The maximum tidal rise is 2.4m, with an average tidal height of 1.2m above chart datum.

Tidal currents generally set parallel with the E coast and loading pier, with a maximum velocity of about 1.5 knots. In the vicinity of the N end of the loading pier a strong W set is experienced for a short time about 4 hours after high tide.

Depths—Limitations.—Depths in the approaches are adequate for deep-draft ships. There are numerous oil rigs and platforms, connected to shore by submarine pipelines, situated off the SW coast of Jazireh-ye Khark.

Other submarine oil pipelines are laid from the S end of the island SW to the Feridoon Oil Field and the Ardeshir Oil Field.

An oil company boat harbor is formed by the inner part of the causeway and a N breakwater. Lights mark the N and S sides of the entrance. The least depth of water alongside tug berths is 6m. Other berths have a depth of 4m.

Main Jetty (29°13.8'N., 50°20.3'E.) is a T-head pier connected to the shore by a stone causeway and trestle jetty. The T-head is 1,840m long, with five berths on its outer face and five berths on its inner face, which can best be seen on the chart.

The berths are exposed to SE winds; winter storms can raise seas 2 to 3m high. Limiting factors at each berth are, as follows:

Main Jetty			
Berth No.	**Depth alongside**	**Maximum vessel size**	**Maximum sailing draft**
1	21.3m	Berth is not operational	
2	19.8m	Berth is not operational	
3	21.3m	275,000 dwt	20.42m
4	20.1m	Berth is not operational	
5	21.3m	275,000 dwt	20.73m
6	18.3m	100,000 dwt *	16.15m
7	18.3m	175,000 dwt	17.07m
8	19.2m	Berth is not operational	
9	17.4m	175,000 dwt	16.46m
10	16.1m	90,000 dwt	14.02m
* Maximum length of 274m.			

Sea Island Terminal (Azarpad Terminal) (29°13.7'N., 50°17.2'E.) is an offshore oil-loading platform situated about 2 miles NW of the S extremity of Jazireh-ye Khark. The terminal is 548m long, and provides two inner berths and two outer berths, best seen on the chart. The berths cannot handle vessels that are less than 150,000 dwt. Limiting factors are, as follows:

Sea Island Terminal			
Berth No.	**Depth alongside**	**Maximum vessel size**	**Maximum sailing draft**
11	32.0m	500,000 dwt	29.87m
12	29.5m	300,000 dwt	27.43m
14	25.9m	Berth is not operational	
15	27.4m	500,000 dwt	29.87m

All the above berths can become untenable during prolonged periods of strong NW winds. Tankers should use the maximum

number of mooring lines. Quick release hooks are provided.

Darius Oil-Loading Terminal (Daryush Terminal) (29°12.7'N., 50°20.8'E.) is an offshore mooring berth situated about 1 mile off the SE corner of Jazireh-ye Khark. There is only one berth. The tanker is secured to five mooring buoys with both anchors out. Unlit buoys mark the oil pipeline between shore and terminal.

The mooring berth, in a depth of about 19.8m, can accommodate a tanker up to 160,000 dwt loading to a maximum draft of 18.3m, provided the distance from the stern to the loading manifold does not exceed 152m.

The terminal operates 24 hours a day, 7 days a week.

The sea berth is somewhat protected from the prevailing NW wind, but berthing may become impossible after prolonged S winds.

An oil company small craft harbor, situated close N of the shore end of the oil pipeline to Darius, is formed by a stone causeway with a breakwater extending N from its outer end. There are depths of 4.6 to 5.5m in the harbor. The approach channel is marked on each side by three lighted beacons.

Khemco Loading Pier (29°12.8'N., 50°20.2'E.), about 0.5 mile SE of the small craft harbor, consists of two piers extending ESE for 0.3 mile to a 360m long T-head formed by dolphins. Liquefied sulphur and LPG are loaded in tankers berthed alongside the T-head.

Berthing is carried out day and night. There is 12.8m of water alongside the T-head at low tide.

Pilotage.—Pilotage is compulsory from the anchorage area to the terminals. Berthing Masters, acting in a pilot capacity, board tankers at the anchorage, berth them, and remain aboard as Safety and Loading Coordinators.

Dry cargo vessels discharging cargo at the anchorage do not require a pilot or Boarding Master. The Khemco Terminal Berthing Master will board the ship at the anchorage or outside the port area.

Berthing Masters board tankers bound for Kharg Island Terminal and Sea Island Terminal about 1.2 miles E of the Kharg T-head pier. The pilot for Darius Oil-Loading Terminal boards 2 miles seaward of the terminal. Vessels are berthed day or night.

Ships should not approach closer without the Boarding Master aboard. Ships bound for Sea Island Terminal must, unless otherwise instructed, proceed to the anchorage off the E side of the island.

The pilots can be contacted, as follows:

1. VHF: VHF channel 10, 12, 16, and 77
2. Telephone: 98-93-332381

Regulations.—Vessels send their ETA 72 hours, 48 hours, 36 hours, and 24 hours in advance; an additional 12-hour notification is required for Darius Oil-Loading Terminal. The 36-hour message should contain the following information:

1. Cargo requirements and supplier.
2. Deballasting time.
3. Loading rate.
4. ETA at the anchorage.
5. Arrival and departure drafts.
6. Other information as required by the operators.

Vessels should not use VHF channels 10, 12, 16, and 77 for intership traffic while in the anchorage and alongside. A continuous listening watch on VHF channel 16 should be maintained while at anchor.

There is a port radio station at Jazireh-ye Khark. Ships are advised to use this VHF/RT when within range of the harbor, using standard frequencies. In poor visibility, when a ships approach may not be observed from shore, radiotelephone use can avoid delay in berthing.

Pratique can be requested by radio 72 hours before arrival in the harbor. The Standard Quarantine Message should be sent to "Port Health Officer Khargiran." Regulations generally pertain to all terminals within the harbor.

All vessels within Iranian territorial waters (12 miles seaward of land and adjacent islands) and harbor limits must display the Iranian national flag during daylight hours.

On arrival, all ships proceed E of the East Harbor Limit, anchor, and await the Berthing Master. All the area within the harbor limits is a Prohibited Anchorage and Restricted Maneuvering Area. Only ships berthing and unberthing are allowed to transit the area.

While at anchor, ships should maintain normal listening watch on VHF/RT (Kharg Island).

Tending mooring lines while at Sea Island Terminal must be done one line at a time and under supervision of a ships officer.

Contact Information.—The port can be contacted, as follows:

1. Call sign: IOOC Marin
2. VHF: VHF channels 4, 12, 14, 16, and 20
3. Telephone: 98-212-2664296
   98-212-3942865
   98-212-1239383 (mobile emergency)
4. Facsimile: 98-212-2664295
5. Telex: 88-212707

Anchorage.—Designated anchorage areas have been established SE and E of Kharg Island, as follows:

1. Anchorage Area A (centered about 4.5 miles SE of the S extremity of Kharg Island)—Vessels bound for Sea Island Terminal.
2. Anchorage Area B (centered close E of Anchorage Area A)—Dangerous cargo anchorage.
3. Anchorage Area C (centered about 6 miles E of the S extremity of Kharg Island)—Vessels bound for Main Jetty.
4. Anchorage Area D (centered about 3.5 miles ENE of the head of Main Jetty)—Ship-to-ship oil transfer anchorage.

Dry cargo vessels anchor, in at least 21.9m, about 0.5 mile SE of Darius Oil Loading Terminal. Anchorage off the E side of Jazireh-ye Khark is sheltered when the Outer Anchorage at Bushehr is untenable due to the weather. Dry cargo vessels anchor on good holding ground NE of the **Naval Boat Harbor** (29°15'N., 50°20'E.) and discharge cargo into barges.

The limits of the Prohibited Anchorages and Restricted Areas as well as the Harbor Limits are best seen on the charts.

Directions.—Ships approaching from W, and going to anchor E of Jazireh-ye Khark, should pass S of the island.

Ships approaching Kharg from S should keep at least 2.5 miles E of the island; ships approaching from N should keep W of the island and outside the Restricted Area. Ships should not pass between the islands.

Caution.—Dangerous wrecks, some marked by lighted buoys and best seen on the chart, are located between the S extremity of Jazirat-ye Khark and the Iranian coast.

17.6 The coast between **Ras osh Shatt** (29°06'N., 50°42'E.) and Ganaveh is low and sandy. Inlets breaking the continuity of the coast in several places have shallow entrances but greater depths within. Local craft transit some of the inlets to villages.

Bandar-e Rig (29°29'N., 50°38'E.), a village, is fronted by two sandy islets which give partially-sheltered anchorage to small craft.

Ganaveh (29°33'N., 50°31'E.), a group of villages situated about 0.5 mile inland, has a few date palms and a conspicuous large tomb with a spire.

Bandare Khowr (29°34'N., 50°31'E.), the tidal mouth of a river fronting Ganaveh, has drying sands extending 0.5 mile off its mouth. Large dhows can enter the river at HW. A water tank, a radio mast, and lighted derrick post are conspicuous.

An oil company has quarters SE of the river entrance, which is marked by a beacon. Stakes mark the sides of the river channel, with the port side markers having oil drum topmarks. About 183m within the entrance is a jetty with steps which affords a sheltered landing at all stages of the tide.

Anchorage can be taken, in about 5.5m, good holding ground of clay and mud, about 2 miles offshore SW of Ganaveh. Larger vessels anchor about 5 miles SSW of Bandar-e Khowr entrance, clear of the Prohibited Anchorage Area.

The coast between Ganaveh and **Ras-e Tanb** (29°56'N., 50°09'E.) is low, sandy, and interspersed with steep high hillocks. Tombs mark the summits of some hillocks.

Kuh-e Bang (29°45'N., 50°22'E.), a conspicuous mountain, has a summit rising 2 miles inland and a seaward face which is precipitous; from S this face appears as a conspicuous bluff.

Emam Hasan (29°52'N., 50°15'E.) is a village with a conspicuous mosque. Pipelines for oil are laid from the coast near the village W towards Damgheh-ye Bahrgan, WSW to an oil field SW of the entrance to Khowr-e Musa, and SW to offshore oil-loading terminals. A flare burns on the coast near the pipeline landings; a lighted oil rig stands 7.5 miles W of Emam Hasan.

17.7 Barkan Oil-Loading Terminal (Bahregan Oil Center) (29°44'N., 50°10'E.) (World Port Index No. 48464) is situated 20 miles NW of Ganaveh. The terminal consists of two berths. The terminal operates continuously night and day, 7 days a week. Berthing and unberthing, however, is only carried out in calm to moderate weather conditions.

Barkan Oil Center, situated on the coast 20 miles NNW of Ganaveh, may be identified by two oil flares which burn continuously near its vicinity.

Depths—Limitations.—Berth No. 1, the inner berth, consisting of a group of six mooring buoys in a depth of about 15.5m, lies about 5 miles SW of Barkan Oil Center. It can accommodate tankers up to 45,000 dwt. Berth No. 2, the outer berth, consists of an SBM, in a depth of 24m about 8 miles SW of Barkan Oil Center, that can accommodate tankers up to 250,000 dwt. An underkeel clearance of 1m is required at both berths.

There are no reported surface dangers in the area of the berths. However, anchorage is prohibited within 1.2 miles of the berths and within 1 mile on either side of the submarine oil pipelines laid between the berths and oil center.

When tidal and wind conditions oppose each other, it is incumbent upon the master to exercise caution on approaching the loading berths, especially at night and in poor visibility. Flood tidal currents set NW; ebb tidal currents set SE.

Radar is of great help in ascertaining distance from the buoy at night and in locating the floating loading hoses at night and during periods of low visibility. The tanker, when about 0.5 mile from the berth, should only have way on for steerage and should keep the SBM and floating hoses on the port bow.

Pilotage.—Pilotage is compulsory. Vessels wait for a pilot about 2 miles S of the terminal.

Regulations.—Vessels should send their ETA via facsimile (98-212-2664295) to the Iranian Offshore Oil Company (addressed to Production and Planning and Export Coordination, attention Bahregan Marine) 96 hours and 48 hours in advance.

Vessels should start contacting the terminal (call sign: Bahregan Marine) on VHF channel 11 beginning 4 hours prior to arrival.

All ships must display the Iranian national flag from the foremast while in the territorial waters of Iran.

Anchorage.—Anchorage can be taken in suitable depths about 2 miles SW of Berth No. 2.

Caution.—Submarine pipelines are laid from Barkan Oil Center to the offshore loading berths and also to Nowrouz Oil Field 49 miles WSW. They are also laid from a position 2 miles NW of the oil center to Bahrgan Sar Oil Field. Mariners should not anchor near the pipelines.

Port limits embracing Barkan Oil-Loading Terminal and Barkan Oil Center extend about 10 miles offshore and are best seen on the chart. Vessels should not enter the port limits without permission from Barkan Oil Center Port Radio.

A dangerous wreck, marked close W by two buoys, lies about 1 mile SW of Berth No. 2.

Three stranded wrecks lie about 3 miles NW of the terminal.

17.8 Khalij-e Deylam (30°00'N., 50°00'E.), a large bay, indents the low coast between **Ras-e Tanb** (29°56'N., 50°09'E.) and Damagheh-ye Bahrgan.

Bandar-e Deylam (30°04'N., 50°09'E.) is a coastal town with a large, conspicuous fort which appears as an island from the offing. Local craft can reach town at HW via a creek leading through drying mud flats. A high radio mast stands 2 miles S of the fort.

Anchorage can be taken, in about 7.3m, soft mud, about 4 miles offshore, or, in 5.5m, clay, about 3 miles W of town. The anchorages are sheltered from the shamal; the kaus does not raise the usual sea and swell, even though it is strong.

A lighted oil rig stands 4 miles SW of **Shah Abu ol Shah** (30°11'N., 50°05'E.), a town near the head of the bay which is backed by a range of high hills extending to Damagheh-ye Bahrgan.

Damagheh-ye Bahrgan (30°00'N., 49°34'E.), a very low strip of sand covered at HW, is fronted for at least 5 miles by mud flats, some of which dry. Two conspicuous date groves stand about 3 miles N of the point.

Caution.—A submarine pipeline is laid from Bahrgan Sar Oil Field to the coast 2 miles NW of Barkan Oil Center.

Mariners should not approach within 3 miles of Bahrgan Sar Oil Field and Hendijan Oil Field. Mariners are advised not to anchor near the pipeline. The limits of these oil fields are best seen on the chart.

17.9 Rud-e Zohreh (30°04'N., 49°30'E.) empties through a delta into the Persian Gulf. The river has several tortuous reaches but only one main channel. The river approach is through mud flats, with the channel marked by poles and a beacon; the latter is situated 2.5 miles SW of Damagheh-ye Bahr-an. Dhows and a local vessel with a draft of 2.4m have ascended the river to **Hendijan** (30°15'N., 49°43'E.).

Khowr-e Musa (30°05'N., 49°14'E.) is entered between Ras-e Tanub and Bu Seyf (Bu Sif). Navigation is restricted by tidal flats, which dry in places, to a constricted channel near the W shore of the estuary.

Khowr-e Musa is about 22 miles long and leads to a channel about 14 miles long with an average width of 305m, ending at Bandar-e Mahshahr. Khowr-e Musa is approached via a deep channel, marked by lighted buoys and beacons, about 25 miles long and 0.5 mile wide, which is entered at **Khowr-e Musa Light Vessel No. 1** (29°37'N., 49°34'E.).

An anchorage, designated for vessels carrying dangerous cargo, is located in position 29°45'51'N, 49°20'09"E.

An anchorage, designated for vessels carrying general cargo, is located close W of Khowr-e Musa Lighted Buoy No. 5, in position 29°51'35.9'N, 49°12'30.0"E.

At the inner end of the channel, in the vicinity of Lighted Buoy No. 5, depths decrease and the fairway becomes more constricted in the vicinity of The Bar. The channel has a dredged depth (2010) of 13m over a width 244m.

After clearing the bar, depths increase in the channel allowing commercial ships to transit as far as Bandar Khomeyni and tankers to the oil port of Bandar-e Mah Shahr, a total distance of 37 miles from the end of Bar Channel.

It has been reported (2010) that a second channel, marked by lighted buoys, with a length of about 9 miles and a depth of 7m over a width of 500m, has been established W of the main channel in Khowr-e Musa between position 29°56.3'N, 49°06.3'E and position 30°03.2'N, 49°00.0'E. This channel has been designated one-way towards Bandar-e Mahshahr.

Fasht ol Mova (30°04'N., 49°10'E.) is a large area of flats, which dry in patches, between Ras-e Tanub, The Bar, and Khowr-e Musa Channel. There are numerous detached shoals, with depths of less than 9.1m, lying as far as 30 miles S, SE, and SSE of Ras-e Tanub.

Fasht ol Mova is traversed by several inlets, the principal one being **Khowr-e Qazlan** (30°08'N., 49°07'E.), which joins Khowr-e Musa about 21 miles N of Bu Seyf. The entire area is unsurveyed. It is reported that an unlighted metal platform with a disused tide gauge, standing on a shoal about 27 miles SSE of Ras-e Tanub, is a good radar target.

The shore bank, adjacent to the W side of the Khowr-e Musa approach channel, extends as far as 13 miles SE of Bu Seyf, and depths of less than 11.4m exist up to 27 miles SE. An oil platform, from which a light is shown, stands 11.5 miles SW of Khowr-e Musa Light Vessel No. 1.

Flares burn close N of the platform. There are lighted and unlighted oil rigs within 5 miles of the oil platform. A submarine oil pipeline is laid from the platform to the oil terminal at Barkan.

Ardeshir Oil Field (29°15'N., 49°35'E.) is connected by a pipeline E to Kharg Island. Oil rigs, moved at intervals, constitute a possible hazard in the approaches to Khowr-e Musa.

17.10 The Bar (30°00'N., 49°03'E.), lying about 6 miles E of Bu Seyf at the entrance of Khowr-e Musa, is a very constricted channel with a dredged depth of about 12.2m (1992). It is the principal ship channel; within the bar the channel is 1.5 miles wide.

The banks in the entrance of Khowr-e Musa are liable to change. A conspicuous disused tide gauge, about 21m high, makes an excellent daymark. The sides of The Bar channel are marked by lighted beacons. The least width of the channel, between Buoy 15 and Beacon 22, is 302m.

Tides—Currents.—About 5 miles SE of The Bar, the tidal current attains maximum spring velocities of 0.5 and 1.5 knots on the flood and ebb, respectively.

The most difficult part of Khowr-e Musa, especially when the tidal currents are strong, is reported to be in the vicinity of its junction with **Khowr-e Vosta** (30°23'N., 48°55'E.).

Tidal currents of 3.5 knots on the flood and 4.5 knots on the ebb have been experienced in the vicinity of the bend 1.5 miles N of the junction.

Caution should be exercised when passing Qassar Bin Siswan, where the ongoing current attains a velocity of about 3 knots and raises eddies and tide rips over the shoal.

Depths—Limitations.—Qassar Bin Siswan (30°12'N., 48°58'E.), a shoal with a least depth of 1.2m and marked by a lighted buoy, lies in the middle of Knowr-e Musa. The main ship channel lies W of the shoal. An extensive drying reef lies on the E edge of the channel about 2 miles SSE of the shoal. Jazireh-ye Qa-br-e Nakhoda lies on flats about 7 miles NNW of Qassar Bin Siswan.

The Khowr-e Musa turns ENE in the vicinity of Knowr-e Vosta and continues navigable for 5 miles or more when it then becomes the **Khowr-e Mahshahr** (30°27'N., 49°10'E.).

Pilotage.—Pilotage is compulsory. The pilot vessel, painted white and with the name "Khor Musa" in black letters on each side of the hull, maintains station near the entrance to the dredged channel through the bar. When not on station, the pilot vessel is replaced by a tug. Pilots board near Lighted Buoy No. 12 (29°53.4'N., 49°12.6'E.). Pilots will board ships at night. During adverse weather conditions, the pilot vessel may proceed above The Bar for shelter.

On request via radio, the pilot vessel will function as a radio beacon. Vessels requiring this service should make direct radio contact and obtain the precise position of the pilot vessel.

During periods of low visibility due to fog, dust, or sand storms, the pilot vessel will, in addition to the usual signals under such conditions, sound the letters PV in Morse Code on the siren every 15 minutes beginning on each hour; the signal is sounded more frequently on the approach of a vessel.

The pilots can be contacted, as follows:

1.	Call sign:	Khormusa Pilots
2.	VHF:	VHF channel 16
3.	Telephone:	98-652-2522455
		98-652-2522456
		98-652-2522457
4.	Facsimile:	98-652-2226902
5.	Telex:	88-612051 BNDR IR

Regulations.—Vessels should contact Bandar Khomeyni Coast Radio Station (EQN) on VHF channel 16 upon arrival at the pilot boarding position to advise ETA at the port.

Anchorage.—In the event of fog or a thick dust storm, an-

chorage can be taken in the W part of the channel W of Jazireh-ye Qabr-e Nakhoda.

17.11 Bandar-e Emam Khomeyni (30°26'N., 49°05'E.) (World Port Index No. 48460), a river port, is about 34 miles from the bar at the entrance to Khowr-e Musa. The port itself is built on reclaimed land enclosed by a coral wall; the adjacent area in all directions consists of barren marshes and mud flats. The port area is subject to flooding during heavy rains.

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Winds—Weather.—The prevailing wind is the NW shamal, which blows throughout the summer months, starting about 0900 daily and dying out about sunset.

The N winds of winter are often interrupted by a strong SE kaus. With a combination of high wind and choppy sea, berthing and cargo lightering are not permitted. Rainfall is experienced during November through March and is usually associated with S gales. Between April and November shade temperatures range between 32° and 52°C. Sun temperatures often reach 74°C. Fog may occur during October and November.

Tides—Currents.—Tides are considerably affected by strong winds. Variations up to 3 hours in time and 0.9m in height are recorded. Northwest winds tend to lower the level and retard the predicted times of high and LW. Winds from the SE have the opposite effect.

The mean tidal rise at HWS is 4m; the mean tidal rises at HWN is 3m. At The Bar, the MHHW has a rise of 3.4m and MLHW has a rise of 2.7m above chart datum. The rise of tide at The Bar is shown by an automatic tide indicator near Inner Khowr Musa Lighted Buoy No. 28.

At Bandar-e Emam Khomeyni, the average time of HW is 1.5 hours later than on The Bar. The MHHW has a rise of 5.2m; the MLHW has a rise of 4.3m.

Depths—Limitations.—Bandar-e Emam Khomeyni is an important commercial port, with the river providing a natural harbor.

Depths in the river off the berths range from about 16.5 to 36.6m. A dangerous wreck, with a depth of 12.5m, lies about 0.5 mile SW of the W extremity of Western Jetty.

Eastern Jetty, consisting of Berth No. 1 through Berth No. 3, is 530m long and has depths of 8.5 to 10m alongside; the jetty is being expanded (2009). Western Jetty, consisting of Berth No. 4 through Berth No. 6, is 550m long and has a depth of 11.5m alongside.

The Ore Terminal, located between Eastern Jetty and Western Jetty, can accommodate vessels up to 35,000 dwt, with a maximum draft of 15m and a maximum length of 183m. The ore-loading berth is also used to load livestock.

Many other berths, with depths of 9 to 13m alongside and which may best be seen on the chart, extend W from the head of Western Jetty and then NW along the E bank of Khawr-ye Dowraq. The ro-ro terminal is located close E of Berth No. 7. The container terminal, with charted depths of 10 to 13m, consists of Berth No. 11 through Berth No. 15.

There are numerous lighters in port. A barge basin exists on the E side of town and is dredged to 3.6m. A slip and jetties, lie close S of the barge basin. The basin and approaches are dredged to 7m.

The grain terminal, which is dredged to 10m on its W side and 13m on its E side, extends about 0.1 mile SE from the area E of the barge basin. About 0.5 mile E of the grain terminal, a fertilizer plant has six berths with depths alongside of 13.4 to 14.0m, although silting may reduce the available depths.

A petrochemical terminal exists at Bandar-e Emam Khomeyni E of the grain terminal. Tankers up to 25,000 dwt can discharge at the jetty via pipelines connected to the storage tanks.

The Gulf Agency Company (GAC) operates a self-contained terminal situated N of the port of Bandar-e Emam Khomeyni. The terminal is comprised of 17 jetties, with depths of 7m alongside.

Vessels with a maximum length of 238m, a maximum beam of 42m, and a maximum draft of 12.5 can be accommodated. Vessels with a draft of 11.3m or less can enter 24 hours at any state of the tide.

Pilotage.—Pilotage is compulsory. Pilots board ships SE of the entrance to the dredged channel through The Bar near Lighted Buoy No. 12. See paragraph 17.10 for further information.

Pilots will conduct ships during the day and at night, weather permitting, as far as Bandar-e Emam Khomeyni anchorage, where a Berthing Master will board and bring the ship alongside a berth, if available. Pilots are ordered 1 hour before sailing on VHF channel 12.

Regulations.—The Quarantine Medical Officer boards ships on arrival off Bandar-e Emam Khomeyni.

Vessels send their ETA at Khowr-e Musa pilot station at least 48 hours in advance; the ETA should be sent 72 hours in advance if proceeding to the fertilizer complex wharf. The ETA should be confirmed 6 hours prior to arrival at the pilot boarding position. The initial ETA message should contain the following information:

1. ETA.
2. Arrival draft.
3. Last port.
4. Speed.
5. Cargo on board.
6. ISPS level.

Vessels should contact Bandar Imam Khomeyni Port Control with their position, speed, draft, and ETA when passing the following positions:

1. Khowr-e Musa Lighted Vessel No. 1 (29°37'01.2"N., 49°33'58.2"E.).
2. Lighted Beacon No. 25.

Navigation safety and urgent information is broadcast on VHF channel 16 daily at 0915 and 1715.

Contact Information.—The port can be contacted, as follows:

1. Call sign: Bandar Imam Khomeyni Port Control
2. VHF: VHF channels 13 and16

Anchorage.—The Emergency and Dangerous Cargo Anchorage, lying between Lighted Beacon No. 33 and Lighted Beacon No. 44, has charted depths of 35 to 51m.

The Large Vessel and Short-Term Anchorage, lying between Lighted Beacon No. 44 and Lighted Beacon No. 35, has charted depths of 40 to 56m.

The Handy-Size Vessel and Long-Term Anchorage, lying in

the entrance to Khowr-e Maramus, has charted depths of 13 to 30m. Currents run strongly through the anchorage.

Directions.—Approaching Khawr-e Musa, steer a course for the light float (29°37'N., 49°35'E.) and then set a course through the buoyed channel for Lighted Buoy No. 5. Then steer courses through The Bar and river channel to the anchorage SW of Bandar-e Emam Khomeyni.

17.12 Bandar-e Mahshahr (30°28'N., 49°11'E.) (World Port Index No. 48450) is situated on Khowr Mahshahr, a branch of Khowr-e Musa. The port lies about 6 miles ENE of Bandar-e Emam Khomeyni. Refined oil products are shipped via pipeline from the refinery at Abadan to the loading terminal at Bandar-e Mahshahr. Facilities also exist for the export of crude oil and oil products in drums.

Tides—Currents.—The mean tidal range at HWS is 4.9m; at HWN the mean tidal range is 4m.

Tidal currents in the vicinity of the port attain a velocity of 3 to 4 knots.

Ships arriving on the flood tide are berthed starboard side-to; ships arriving on the ebb tide are berthed port side-to.

Depths—Limitations.—The channel from Bandar-e Emam Khomeyni to Bandar-e Mahshahr is deep and clear of dangers.

The approach channel has a depth of 12m.

The new one-way approach channel to the port has been described in paragraph 17.9.

The SE shore of the river is foul but the outer extent of the foul area is marked by several beacons.

There is a least depth of 12.2m just off the berths. The harbor berths consist of six T-head piers; berth information is given in the accompanying table titled **Bandar-e Mahshahr—Berth Information**.

Pilotage.—Pilotage is compulsory. Tankers are berthed day and night. Pilots board ships near the entrance to the dredged channel through The Bar near Lighted Buoy No. 12. See paragraph 17.10 for further information.

A Berthing Master will board tankers at the Bandar-e Khomeyni anchorage and bring them to Bandar-e Mahshahr.

Regulations.—Vessels send their ETA 24 hours before arrival at Khowr-e Musa pilot station and when the pilot is embarked.

The oil company will furnish a Port Information Booklet on arrival. All tankers should arrive with clean ballast. The national flag of Iran should be displayed within territorial waters.

Tugs are usually employed for docking and undocking vessels. A Notice of Readiness will be accepted on arrival at Bandar-e Khomeyni.

Vessels berth starboard side-to on the flood current and port side-to on the ebb current.

Contact Information.—The port radio station (call sign: IRANMASH) can be contacted on VHF channels 16, 20, and 26.

Anchorage.—Ships in transit for Bandar-e Mahshahr will anchor in the Bandar Khomeyni anchorage to disembark the bar pilot, await pratique, and board the Berthing Master.

Directions.—See paragraph 17.11.

17.13 From **Bu Seyf** (30°01'N., 48°55'E.), the W entrance point of Khowr-e Musa, the coast trends W about 13 miles to Khowr-e Bahmanshir.

Khowr-e Bahmanshir (30°08'N., 48°34'E.), lying E of and flowing parallel to the Shatt al Arab, is connected to that river by **Haffar Channel** (30°25'N., 48°10'E.), an artificial cutting; the island thus formed is known as **Jazireh ye Abadan** (Jazirat al Khidr) (30°02'N., 48°34'E.).

The unmarked channel of the inlet leads between mud flats and banks, in depths of 1.8 to 5.8m, and can be ascended for about 23 miles by vessels of shallow draft. The N part of the inlet has irregular depths and may be partially blocked by drying mud banks. Local knowledge is necessary.

The Shatt al Arab and its Tributaries

17.14 The **Shatt al Arab** (29°57'N., 48°35'E.) is formed by the confluence of the Tigris River and the Euphrates River, which occurs about 110 miles above the waters of the Persian Gulf.

Bandar-e Mahshahr—Berth Information

Berth	Depth alongside	Maximum draft	Remarks
Jetty No. 1	13.41m	12.20m	Maximum vessel size of 35,000 dwt, subject to the overall vessel length not exceeding 237.7m and the rise of the tide on the bar.
Jetty No. 2	11.73m	12.20m	Maximum vessel size of 45,000 dwt.
Jetty No. 3	11.89m	12.30m	Maximum vessel size of 50,000 dwt.
Jetty No. 4	11.29m	11.20m	Maximum vessel size of 40,000 dwt.
Jetty No. 5	11.89m	12.20m	Maximum vessel size of 55,000 dwt, subject to the overall vessel length not exceeding 237.7m and the rise of the tide on the bar.
Jetty No. 6	13.25m	12.20m	Maximum vessel size of 60,000 dwt, subject to the overall vessel length not exceeding 237.7m and the rise of the tide on the bar. Berth is equipped for loading LNG.

The E and W banks of the Shatt al Arab, as far as **Khayyen Canal** (30°27'N., 48°07'E.), are in Iranian and Iraqi territory, respectively. The river entrance is a good radar target at a distance of 15 miles under normal conditions. The Shatt al Arab is navigable as far as Al Basrah by any ship able to cross the entrance bar. At the entrance of the Shatt al Arab, the river banks are very low and bordered by date palms.

Above the entrance, the soft mud banks are overgrown with weeds and coarse grass, with the adjacent land often inundated as far inland as Al Basrah. There are date groves and fertile farm lands in some places, especially above Al Faw.

Tides—Currents.—On a falling tide, the water in the river is fresh as far as **Al Faw** (29°58'N., 48°29'E.), except when the river is low in autumn, when it is slightly brackish. About 10 miles above Al Faw, the water is fresh at all times. The turn of the tide does not occur at LW, as the flood current must attain sufficient strength to overcome the outflow of the river, which varies with seasonal changes; consequently, the time of change of the tidal current varies with the season.

During the dry season, when a large tide follows a small tide, the intervening ebb current is not sufficiently strong to be perceptible.

In the Shatt al Arab, both the time and height of the tide are much affected by the prevailing wind. A strong kaus (a SE wind) will raise the level of the river by 0.6 to 0.9m and accelerate the time of HW; a strong shamal (a NW wind) will lower the level of the river and retard the time of HW.

The change in the tidal current in the Shatt al Arab does not occur at LW because the incoming current must attain sufficient strength to overcome the river outflow, which varies seasonally, being greatest in May, June, and July and least in October and November.

The strength of the current in the outer part of the Shatt al Arab varies considerably, depending upon the height of the tide and the stage of the river. The incoming current may not exist or it may attain a rate as great as 2 knots.

The maximum rate of the outgoing current is 3 to 3.5 knots at springs and 2 to 2.5 knots at neaps. Mixed currents are common, with the surface current running in one direction and the subsurface current running in another, or even the opposite, direction.

Seasonal variations in the level of the river are small at the Outer Bar, as follows:

1. July to September—0.1m above normal.
2. January to April—0.1m below normal.

Seasonal variations at Al Basrah are considerable, as follows:

1. May to July—0.7m above normal. The river is discharging the combined flood waters of the Euphrates River and the Tigris River.
2. October and November—0.4m below normal.

The dry season commences in autumn and continues until spring, when the inland snows begin to melt; during winter, however, frequent freshets are caused by local rains.

In Outer Bar Reach, described in paragraph 17.18, the currents set fairly through the channel, except at spring tides, when at either end there is a strong N set on the flood current and a strong S set on the ebb current; at neap tides, these cross-currents are inappreciable.

The maximum rate of the flood current, which at springs is from 1.5 to 2 knots and at neaps from 1 knot to 1.5 knots, occurs at about half tide.

The maximum rate of the ebb current is from 3 to 3.5 knots at springs and from 2 to 2.5 knots at neaps.

At spring tides, the flood current continues to flow for about 40 minutes after the time of HW; at neaps, it is irregular, but usually continues for about 1 hour after HW. The ebb current continues for about 30 minutes after LW at springs and for about 1 hour after LW at neaps.

During the river flood season, when there are small tides, the flood tidal current is not felt at all, especially upriver; even at a position about 1 mile above Outer Bar Reach Lighted Beacon D, little or no flood current is felt.

Depths—Limitations.—Depths in the approach to the Shatt al Arab are very irregular, with many long narrow shoals having depths from about 5.5 to 16.5m. Deeply-scoured channels lead between the shoals.

There are shoals, with depths of 8.5 to 10.4m, lying as far as 30 to 41 miles SE of **Ras al Bishah** (29°55'N., 48°34'E.), the W entrance point of the Shatt al Arab; South Mast Beacon stands about 2 miles WNW of the extremity of the point. Maraqqat Abu Allah, which dries in patches, extends ESE of Ras al Bishah.

Palinurus Shoal (29°37'N., 48°48'E.), with a least depth of 5.4m, lies about 22 miles SE of Ras al Bishah. Shoal patches, too numerous to identify and best seen on the chart, lie in the approaches to the Shatt al Arab. In the vicinity of Palinurus Shoal, the tidal current on the flood tide attains a velocity of 0.5 to 1.5 knots; on the ebb tide it attains a velocity 1.5 to 2.5 knots.

Caution.—The many obstructions, wrecks, and foul areas, most of them marked by lighted buoys, lying in the vicinity of the approach channels, are best seen on the charts, as are the oil rigs in the approach.

Major hydrographic changes have occurred in the Shatt al Arab and its approaches, especially in Outer Bar Reach. Recent satellite imagery (2002) shows a major shift in the location of the channel; depths in the area may have changed considerably or are unknown. There are many charted and uncharted obstructions and the aids to navigation are unreliable. The exact location of the international boundary between Iran and Iraq, which was based on a 1978 agreement declaring the thalweg (the deepest part of the channel) to be the boundary, is not precisely known. Mariners are advised to use extreme caution when navigating in this area.

17.15 Khawr al Amaya (29°35'N., 48°55'E.), a channel used mainly by deep-draft tankers, leads about 29 miles NW from position 29°25'N, 49°09'E to Khawr al Amaya Oil Terminal. The channel can be used by tankers with a draft up to 21m. There is a least depth of 15.5m in the channel as far as the oil terminal.

In the entrance to Outer Bar Reach, an obstruction, with a swept depth of 9.1m, lies about 1 mile NNW of the oil terminal; a dangerous wreck lies in an approximate position about 1 mile further NNW.

Khawr al Kafka (29°35'N., 48°53'E.), a deep-water channel marked by lighted buoys, parallels Khawr al Amaya and leads to Al Basra Oil Terminal (Mina al Bakr Oil Terminal).

Loaded tankers have priority when underway in both channels. The banks off the channels are subject to change and

channel buoys are moved to reflect changes.

Caution.—It has been reported (2007) that the buoyage may be unlit, out of position, or not as charted; uncharted wrecks may exist; the positions of charted wrecks may be different; and that lesser depths than charted exist in these two channels and the approaches to them.

17.16 Khawr al Amaya Oil Terminal (29°47'N., 48°48'E.) (World Port Index No. 48390) is the principal crude oil-loading port for southern Iraq. The terminal consists of three parts or islands connected by catwalks. The NW part is a helicopter landing area. The central part has the loading berths and radio tower; the SE part consists of personnel living quarters.

Tides—Currents.—High water at the terminal occurs about 30 minutes before HW at Shatt al Arab Outer Bar. The mean spring rise is about 3m, while the mean neap rise is about 2.4m.

Tidal currents in Khawr al Amaya attain a rate of from 1 to 2 knots, setting NW on the flood and SE on the ebb. Cross-currents rarely exceeds 0.7 knot.

Currents in the vicinity of the terminal are rotary and rarely exceed 2 knots. Maximum currents generally parallel the berthing faces, but at certain stages of the tide, cross sets of 0.7 knot velocity are experienced.

Depths—Limitations.—The depth of water at the terminal is 17 to 22.3m. The terminal consists of 12 connected platforms, with a total length of 952m. The central platform has a berth on either side, which can accommodate vessels up to 120,000 dwt. A third berth on the W side of a N extension can accommodate a partially-loaded 330,000 dwt tanker, with a maximum draft of 21m. The facility can accommodate vessels up to 365m long. It has been reported (2012) that only Berth 7 and Berth 8 are operational and that vessels are limited to a sailing draft of 16m.

There are mooring dolphins and platforms ahead and astern of the loading terminal, which is connected by submarine pipelines to the oil tanks at Al Faw.

Pilotage.—Pilotage is compulsory in Khawr al Amaya buoyed channel for all vessels. Pilots board in position 29°20'N, 49°03'E, about 30 miles SE of the terminal.

Tankers are berthed both day and night. Masters of ships inbound for the terminal should contact the pilot vessel and get instructions via radiotelephone as to whether to lie off, anchor, or proceed towards the pilot boat.

Regulations.—Vessels send their ETA 72 hours, 48 hours, and 24 hours in advance to the terminal, stating the following information:

1. Vessel name and call sign.
2. Port of registry.
3. Flag.
4. IMO Number and Official Number.
5. Gross tonnage and nrt.
6. Beam and loa.
7. Master's name.
8. Crew list.
9. Destination.
10. Purpose of voyage.
11. ISPS level.
12. ISSG Number.

Before entering Khawr Al Amaya, all inbound vessels are to contact Khawr al Amaya Harbormaster on VHF channel 14 or 16 for information regarding deeply-laden tankers using the restricted channel and for berthing and anchoring instructions.

Khawr al Amaya Oil Terminal

Tankers arriving to load at Khawr al Amaya with a draft in excess of 15.85m must give their ETA at the pilot boarding position at least 12 hours in advance by contacting the pilot station on VHF channel 16.

Outbound tankers have the right of way over inbound vessels.

A Warning Zone has been established around the terminal. The zone extends 3,000m from the outer edge of the terminal structure, creating an oval-shaped area centered on the terminal and oriented in a NW/SE direction. Vessels are advised to remain clear of the Warning Zone for all but essential transits. It the vessel's transit requires entry into the Warning Zone, vessels are advised to contact Iraqi naval forces on VHF channel 16 to identify themselves and make their transit intentions known.

An Exclusion Zone has been established around the terminal; the right of innocent passage around the terminal within Iraqi territorial waters is temporarily suspended, in accordance with international law. The Exclusion Zone extends 2,000m from the outer edges of the terminal structure in all directions. Only tankers and support vessels authorized by the terminal operators or Iraqi naval forces are allowed to enter the Exclusion Zone.

Further information on the Warning Zone and the Exclusion Zone can be found in Iraq—Cautions in Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channels 12, 14, and 16
2. E-mail: newsomo@hotmail.com
   newsomo@yahoo.com

Anchorage.—A temporary anchorage area lies on the NE side of Khawr al Amaya. It lies between about 9 and 11 miles SE of Khawr al Amaya Oil Terminal and may best be seen on the chart. Ships are not to anchor within the Prohibited Areas best seen on the chart.

Caution.—Numerous wrecks, obstructions, and foul areas, which are best seen on the chart, can be found within 3 miles of the terminal. Vessels should navigate with caution in this area.

A Mine Danger Area, best seen on the chart, lies W through N from the terminal. For further information, see paragraph 17.1

17.17 Al Basra Oil Terminal (Mina al Bakr Terminal) (29°41'N., 48°49'E.) (World Port Index No. 48392) is a steel island structure built in Iraqi territorial waters in a depth of about 30m at MLWS. This crude oil-loading terminal is approached via Khawr al Kafka.

Depths—Limitations.—The loading structure has two platforms; each platform has two loading berths. The structure, which is 975m long and 107m wide, is capable of accommodating tankers of 35,000 to 350,000 dwt. Vessels up to 350m long, with a maximum beam of 60m and a maximum draft of 21m, can depart the terminal by day or at night.

Loaded tankers have priority in the channel and all other ships must keep clear.

Four single point moorings (SPM) are also associated with the terminal, as follows:

1. SPM 1 (29°42'16"N., 48°47'58"E.)—about 1.5 miles NNW of the terminal. Reported (2012) non-operational.
2. SPM 2 (29°40'00"N., 48°49'44"E.)—about 1.4 miles SE of the terminal.
3. SPM 3 (29°38'18"N., 48°51'30"E.)—about 3.75 miles SE of the terminal.
4. SPM 4 (29°43'18"N., 48°50'00"E.)—about 2.7 miles NE of the terminal. Reported (2012) under repair.
5. SPM 5 (29°39'18"N., 48°50'48"E.)—about 2.6 miles SE of the terminal.

Submarine pipelines connect each SPM with the terminal.

Pilotage.—Pilotage is compulsory for all inbound and outbound tankers using the Khawr al Kafka buoyed channel and having a draft of 15.85m or over. There is a port radio station at the terminal.

Pilots board in position 29°20'N, 49°03E, about 24 miles SE of the terminal. It has been reported (2007) that the pilot boards in the vicinity of Lighted Buoy No. 14 (29°38.3'N., 48°50.2'E.) unless specifically requested to board elsewhere by the vessel's master.

Pilots can be contacted on VHF channels 12, 14, and 16.

Regulations.—Tugs are normally used for berthing and unberthing.

Vessels send their ETA 72 hours, 48 hours, and 24 hours in advance to the terminal, stating the following information:

1. Vessel name and call sign.
2. Port of registry.
3. Flag.
4. IMO Number and Official Number.
5. Gross tonnage and nrt.
6. Beam and loa.
7. Master's name.
8. Crew list.
9. Destination.
10. Purpose of voyage.
11. ISPS level.
12. ISSG Number.

Vessels contact the terminal on VHF channel 16 at least 5 hours prior to arrival at the pilot boarding position. Vessels unable to contact the terminal by VHF at the stated time may contact the terminal when approaching the pilot boarding position.

Ships bound for Iraqi territorial waters should contact Al Faw Control (YIS) at least 24 hours before arrival, requesting free pratique from the Medical Officer at Al Faw. The message should indicate the state of health of the crew.

A Warning Zone has been established around the terminal. The zone extends 4,000m from the outer edge of the terminal structure, creating an oval-shaped area centered on the terminal and oriented in a NW/SE direction. Vessels are advised to remain clear of the Warning Zone for all but essential transits. It the vessel's transit requires entry into the Warning Zone, vessels are advised to contact Iraqi naval forces on VHF channel 16 to identify themselves and make their transit intentions known.

An Exclusion Zone has been established around the terminal; the right of innocent passage around the terminal within Iraqi territorial waters is temporarily suspended, in accordance with international law. The Exclusion Zone extends 3,000m from the outer edges of the terminal structure in all directions. Only tankers and support vessels authorized by the terminal operators or Iraqi naval forces are allowed to enter the Exclu-

Al Basra Oil Terminal

Al Basra Oil Terminal

sion Zone.

It should be noted that SPM 1 and SPM 2 lie within the Warning and Exclusion Zones but SPM 3 lies outside both zones.

Further information on the Warning Zone and the Exclusion Zone can be found in Iraq—Cautions in Pub. 160, Sailing Di-

rections (Planning Guide) South Atlantic Ocean and Indian Ocean.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channels 12, 14, and 16
2. E-mail: newsomo@hotmail.com
   newsomo@yahoo.com

Anchorage.—Two anchorage areas are situated close E of the Khawr al Kafka buoyed channel. Anchorage Area A lies between 15.5 and 19.5 miles SSE of the oil terminal. Anchorage Area B lies between 3.5 and 8.5 miles SE of the terminal.

Anchorage is prohibited within 1.5 miles of Al Basra Oil Terminal, in an area best seen on the chart.

Caution.—Acts of piracy have been reported (2005) in Anchorage Area B.

Numerous wrecks, obstructions, and foul areas, which are best seen on the chart, can be found within 3 miles of the terminal. Vessels should navigate with caution in this area.

A stranded wreck, marked by a light and close SW by a lighted buoy, lies about 2 miles SE of the terminal. This wreck is considered to be particularly hazardous and should be given a wide berth.

17.18 Outer Bar Reach (29°51'N., 48°45'E.) is the outer dredged channel used by deep-draft ships in their approach from Khawr al Amaya to the Shatt al Arab. The charted depths in the channel range from 2.4m to 4.1m. The lighted range beacons marking the channel are either reported destroyed or are no longer charted. The channel is reported to be marked by buoys.

Pile Beacon (29°50.5'N., 48°42.5'E.), an old disused semaphore station, stands on the coastal bank. Several wrecks and obstructions, some marked by buoys and beacons, are charted on the shoals N and S of the Outer Bar Reach. A line extending ESE from Pile Beacon and best seen on the chart marks the S limit of an area in which ships are warned not to anchor; it also marks the limit of inward navigation for ships awaiting channel clearance.

17.19 Inner Bar Reach (29°55'N., 48°38'E.) extends from the inner end of Outer Bar Reach to a position about 2 miles ENE of **South Mast Beacon** (29°56'N., 48°34'E.). The axis of the dredged channel was marked by sets of range beacons, but these are no longer charted.

Ranges, buoys, and beacons are always difficult to see during the summer, due to the prevailing dusty haze.

Regulations.—The following regulations are mostly for ships approaching Outer Bar Reach:

1. Outbound ships have priority and inbound ships shall wait until the former clear the dredged channel.
2. Permission to enter Outer Bar Reach must be obtained through the pilot vessel from the Channel Control Station (Al Faw).
3. An inbound vessel must not enter Outer Bar Reach later than 4 hours before HW; when so excluded, the vessel must wait until outbound vessels are clear. A vessel having received permission to enter and being unable to do so at the specified time shall inform the pilot vessel, and apply again for permission to enter when ready, in order that outbound traffic and dredging will not be delayed.
4. Vessels are not allowed to enter the dredged channel on a falling tide unless specific permission to do so has been obtained from the Channel Control Station.
5. A vessel entering from seaward must make the signal prescribed in "Signals" and be guided by the reply.
6. Vessels engaged in surveying display a red cone; vessels underway should make an effort to keep clear of them.
7. Vessels employed in lifting weights or moorings, or from which a diver is working, display a blue square flag; passing vessels should slow to the lowest safe speed and give such a vessel as wide a berth as possible. This rule also applies to small craft engaged in dredging, grabbing, or pile driving. Vessels should regulate their speed so as not to approach a vessel ahead closer than 1 mile. This applies to both inbound and outbound vessels.

Al Faw—Tidal Rise Signals

Day	Night	Meaning
A cone, point up	One white light	A rise of 0.3 or 2.1m
A cone, point down	One red light	A rise of 0.6 or 2.4m
Two cones, points up	Two red lights, vertically disposed	A rise of 0.9 or 2.7m
Two cones, points down	One red light over one white light	A rise of 1.2 or 3.0m
Two cones, point to point	One white light over one red light	A rise of 1.5 or 3.4m
Two cones, base to base	—	A rise of 1.8 or 3.7m
—	Two white lights, vertically disposed	A rise of 1.8
—	One green light	A rise of 3.7m

Additional signals:

1. By day—A square shape displayed from the opposite yardarm indicates an additional rise of 0.15m.
2. By night—One green light shown under any of the above signals, with the exception of the one indicating 3.7m, indicates an additional 0.15m.

Al Faw—Channel Control Station Signals

Day	Night	Meaning
Two black balls, vertically disposed	One green light over one white light	The channel is closed to all outbound vessels
Three black balls, vertically disposed	Two green lights, one at each yardarm of the mast	The channel is closed to outbound vessels of 8.5m draft and over

Al Faw—Channel Control Station Signals		
Day	**Night**	**Meaning**
A black cone, point up, or the International Code of Signals Flag N	See note below	No vessel is to pass the Channel Control Station
Note.—At night, the station communicates by flashing light; the leading vessel is to acknowledge the signal and repeat it to the next vessel astern until answered.		

The Health Declaration should be completed as usual and surrendered to the quarantine official at the ship's destination. This pratique does not clear ships for Iranian ports, which can be obtained on arrival at the port.

Signals.—Signals indicating the rise of the tide on the bar above chart datum are shown by day and at night at Al Faw, as shown in the table titled **Al Faw—Tidal Rise Signals.**

The Channel Control Station at **Al Faw** (29°58'N., 48°29'E.), from which traffic signals are displayed, is equipped with radio. The traffic signals, and also tidal signals, are shown from masts on a large square building, as shown in the table titled **Al Faw—Channel Control Station Signals.**

When the channel is closed to all outbound vessels, no tidal signals will be shown at Al Faw, but when the channel is closed only to vessels of 8.5m draft and over, they will be shown.

A dredge engaged in dredging operations will show the following signals:

1. By day, a dredge displays three black balls in the form of a triangle, one at the masthead and one at each yardarm.
2. When necessary, a red flag will be displayed at the yardarm, instead of the black ball, on that side on which the channel is not available for navigation.
3. At night, a dredge exhibits three white lights in the form of a triangle, one at the masthead and one at each yardarm. When necessary, a red light at the yardarm, instead of the white light, on that side on which the channel is not available for navigation.
4. When a dredge is working in Outer Bar Reach, inbound vessels arriving at Rooka Buoy must sound a prolonged blast on the whistle or siren and must not enter the channel until the dredge replies with four prolonged blasts or four long flashes with the blinker light; these signals indicate the dredge is keeping clear of the channel, or that while the dredge remains in the channel, vessels may pass it, in which case the above-mentioned dredging signals will be shown.
5. These signals are also to be used in all dredged channels, whenever a vessel wishes the dredge to leave the channel clear.

A vessel grounding between the outer lighted buoys and the inner bar should immediately display the following signals:

1. The International Code signal AT by day, or at night two red lights displayed vertically; in addition, if blocking the channel, the letter U should be sounded in Morse Code on the whistle or siren until answered by a tug or any following vessel repeating the signal.
2. Passing signals can be given by the grounded vessel, as follows:
   a. The signal U shall be followed by one short blast to indicate that the vessel is aground on the starboard side of the channel and that following vessels may pass on the port side.
   b. The signal U followed by two short blasts is to indicate that the vessel is aground on the port side of the channel and that following vessels may pass on the starboard side.
   c. **Note.—**These signals shall be repeated by the following vessel to indicate that the intention is to attempt to pass.

A vessel requiring the assistance of the Channel Control Station should display flag T of the International Code of Signals where it can best be seen.

Caution.—When a strong shamal is blowing, a considerable amount of sand in the air sometimes makes it difficult to distinguish whether a red light is above or below a white light.

Great care should be taken, therefore, when any signal is shown which consists of both red and white lights.

17.20 Al Faw Reach extends from Inner Bar Reach to Al Faw, a distance of about 6 miles. The axis of the dredged channel is marked by lighted ranges, best seen on the appropriate chart.

Pilotage.—Pilotage is compulsory for commercial ships in the Shatt al Arab, the approach channels thereto, and to the harbors within its entrance.

The Iranian pilot vessel cruises on station in the vicinity of **Rooka Buoy** (29°49'N., 48°48'E.).

If the pilot vessel is off station temporarily, the ship requiring a pilot should anchor and communicate with the Channel Control Station (YIS) at Al Faw. Pilotage of ships bound for Iranian ports will be carried out by Iranian pilots.

The Iraqi pilot vessel is stationed 3.5 miles WSW of Mina al Bakr Terminal. Vessels bound for Iraqi ports should signal their ETA at the Outer Bar 24 hours in advance via Bashar radio station.

If bound for Abadan and other Iranian ports, the vessel's ETA should be sent 48 hours in advance to Abadan and Al Faw Control via Abadan Coast Radio Station.

17.21 Al Faw (Fao) (29°58'N., 48°29'E.) is mainly important in its proximity to the Iraqi Ports Administration Control Center and to its radio station. There are four T-headed oil-loading piers at the oil terminal. Tankers up to 206m long can load at the piers to a maximum draft of 10.6m, depending on tide and wind conditions and the depth over the bar.

Al Faw is a repair and stores depot for the dredges working in the Shatt al Arab. It also is the buoy depot for the port of Al Basrah and adjacent Persian Gulf waters.

Tide and traffic signals, described in paragraph 17.19, are shown from conspicuous masts atop a building at the head of Al Faw Harbor.

The mean tidal rise is about 2.7m; the maximum current velocity is 2.5 knots. Southeast and NW winds raise and lower the water level, respectively. Notice boards, painted black, with the word "slow" in white letters, are situated on the SW bank of the river above and below Al Faw. Mooring buoys, painted white, are laid near the sides of the channel in the vicinity of the harbor.

There is a coast radio station and a port radio station at Al

Faw. The latter is utilized for traffic control in the Shatt al Arab and as a reporting station for ETA at the pilot station. Radio masts and towers in town are conspicuous.

Pilots, on being given 24-hour advance notice of arrival, will board ships in the vicinity of Rooka Buoy. Pratique can be requested from the Control Center 12 hours before arrival. A Berthing Master relieves the pilot off Al Faw harbor and berths and unberths the ship, while the river pilot remains aboard.

Anchorage is prohibited in an area charted between both banks of the river from the front light of the inner range of Al Faw Reach to a position off the piers 1.5 miles SE.

It has been reported (1993) that vessels with a maximum draft of 5m can transit the Shatt al Arab above Al Faw.

Caution.—The port, including its tank farm, is reported to have been extensively damaged in recent conflicts. Oil exports are now handled through Khawr al Amaya Oil Terminal (paragraph 17.16).

It has been reported (2009) that plans have been developed to construct 3,000m of berthing space for container vessels and 3,000m of berthing space for general cargo vessels.

17.22 Qosbeh Reach extends from a bend in the river at **Ras Qosbeh** (30°00'N., 48°28'E.) to North House, a mud structure 3.5 miles N of the point. A conspicuous, square fort stands 1.5 miles S of North House.

The channel skirts the E bank of the river. The axis of the channel is indicated by two lights, in range 178°. The front light is situated on the SW side of the river about 0.5 mile SW of Ras Qosbeh; the rear light is situated about 0.2 mile S of the front light.

On the W side of the river, about 1 mile above the front range light for Qosbeh Reach, is the first pair of four sets of anchoring beacons for deep-draft vessels waiting to cross the bar. The front beacon on each set is lighted and has a triangular daymark; the unlighted rear beacons each carry a daymark consisting of a St. Georges Cross.

These pairs of beacons are lettered A, B, C, and D, in white on a black background, consecutively from seaward. The berths indicated by the beacons are about 410m apart. A small vessel dolphin berth with two lighted mooring buoys is situated on the W side of the river near Beacon B. A floating pipeline extends between the W shore and this berth and therefore no vessel should attempt to pass W of the dolphins. North House Beacon, 14m high, stands close W of North House. Deep-draft vessels should avoid arriving off North House at LW, as the depth in the channel there is not more than 7.8m.

About 1.5 miles above **North House Beacon** (30°04'N., 48°27'E.), the channel closes the W bank.

Deep-draft ships should avoid the charted sunken wrecks and obstructions between North House, **Chel-labi Point** (30°08'N., 48°24'E.), and **Brick Kiln** (30°08'N., 48°23'E.). The channel closes the E bank above Chellabi Point.

The village of **Khusrowabad** (World Port Index No. 48440) (30°10'N., 48°25'E.) is situated near an oil terminal, which is connected to Abadan by a pipeline used to avoid congestion at that harbor. At least three T-headed oil piers, each about 46m long, can accommodate vessels 152m long at the oil terminal.

Kabda Reach (30°12'N., 48°24'E.) lies between **Kabda Point** (30°11'N., 48°25'E.) and Al Khast, a point about 12 miles NW. For the first 9 miles, the channel follows the SW bank of the river, the opposite bank being bordered by a chain of islands and flats, of which **Jazireh-ye Moaviyeh** (30°13'N., 48°24'E.) and Jazireh-ye Dow Asir are the largest islands. Lighted buoys and wrecks in the channel are best be seen on the chart.

17.23 Abadan (30°20'N., 48°17'E.) (World Port Index No. 48430) is situated on the E bank of the Shatt al Arab, about 42 miles from Outer Bar Reach. Dry cargo ships call for bunkers, load bitumen, or discharge cargo consigned to the oil company. Refined oil products are now loaded at the Bandar-e Mahshahr Terminal, described in paragraph 17.12.

Winds—Weather.—The NW shamal and the SE kaus are the principal winds affecting this area. From June through mid-August, a maximum shade temperature of 52°C and a maximum sun temperature of 74°C can be expected.

Because of the extreme heat, general cargo operations are usually suspended in the afternoon during this period.

Otherwise, weather conditions in general do not adversely affect port operations, although high winds may require special precautions during loading and discharging. The winters are damp and raw, and temperatures as low as 4°C. have been recorded. Thunderstorms are quite common from February through April.

Tides—Currents.—At Abadan during the river flood season, the flood tidal current will not have any appreciable effect when the tide is less than 2.4 or 2.7m on the outer bar.

At the height of the flood season, the flood tidal current may be entirely overcome; at this time the ebb current may attain a velocity of 5 knots.

Under ordinary conditions, the flood tidal current commences at Abadan about the time of HW on the outer bar, but the time of the commencement of the ebb current varies greatly. The average velocity of the flood current is 1.5 knots while the ebb can attain a rate of 3 knots.

A strong kaus will accelerate the time of HW and raise the water level 0.6 or 0.9m. A strong shamal will retard the time of HW and lower the water level so much that the tide may fall below the zero of the tide gauge.

In the river, the highest water level occurs between May and July; the lowest levels occur in October and November.

Depths—Limitations.—Central depths in the river harbor fronting the area are 9.1 to 15.2m; depths alongside the principal berths range from 2.1 to 9.8m, mean low fresh water. In the three tidal basins in the vicinity, the depths are about 2.1m.

The main channel in the vicinity of the port occupies the E half of the river. with the 10m curve in the center and depths of 5.5m and less on the W side. Stranded and submerged wrecks in the channel are best seen on the chart. The harbor area has no clearly defined natural limits, but "slow" notice boards just S of Bavardeh and W of Bairaim, the area on the N side of the river abreast Al Kast Point, mark the official harbor limits.

The harbor consists of the river fronting the tank farms, the refinery area, and the residential district. It is approximately 4 miles long and 0.5 mile wide, with all facilities situated along the NE and N side of the river; Central Stores Creek, Berey Creek, and Drum Creek are three improved tidal basins which extend a short distance inland on the same side. Vessels up to 183m long can safely enter the port. The width of the river in the pier areas is the limiting factor. Under special conditions,

vessels exceeding this length may be accommodated.

17.24 Abadan and Bavardeh (30°19'N., 48°19'E.) consists of 28 berths, some of which can accommodate ocean-going ships. However, since oil shipments have been reduced, the only working piers are Nos. 3, 4, 7, 9, 11, 16, 22, and 26. These piers are used for bunkering and dry cargo operations. There are numerous mooring buoys on the W side of the river within the port area.

Depths—Limitations.—Vessel size is controlled by the depths in Outer Bar Reach (see paragraph 17.18). Vessels up to 3,500 dwt, with a maximum draft of 4.2m can use the port.

The maximum depth at the river anchorage berths is 9.1m. It is reported that several of the buoys are missing and vessels anchor in their previous positions.

Pier No. 7, with a length of 510m, contains three berths, which have alongside depths of 8.5 to 9.1m.

Limitations for the bunkering jetties are, as follows:

Pier	Depth alongside
No. 3	9.4m
No. 9	8.5m
No. 16	6.4m
No. 22	7.6m

All drafts are for fresh water. The harbormaster boards vessels at the harbor limits and berths them as necessary.

The port is open for day and night navigation, with arrival and departure being controlled by the tide. Vessels normally enter The Bar 4 hours before HW at The Bar or 2 hours after HW at The Bar.

Those entering 4 hours before arrive at Bavardeh Anchorage generally during flood tide, so they must anchor for 6 hours awaiting the ebb. Those entering 2 hours after HW arrive at Bavardeh during the ebb tide and berth on arrival, providing a berth is available, weather conditions permit, and outward movements do not delay.

Vessels berth starboard side-to, stemming the ebb current and without using tugs. Vessels depart Abadan 4 to 6 hours before HW at The Bar.

Pilotage.—Pilotage is compulsory for all ships entering, departing, or navigating the river. The pilot is boarded in the vicinity of Rooka Buoy.

Pilotage is available 24 hours, with arrivals and departures controlled by the tide.

Contact Information.—Abadan Port Radio (EQA) can be contacted, as follows:

1. Call sign: Abadan Port Radio
2. VHF: VHF channels 13, 16, 18, and 25
3. Telephone: 98-631-27193
4. Facsimile: 98-631-26033

Regulations.—There is a port radio station at Abadan situated at **Al Wasiliyah** (30°18'N., 40°18'E.), SW of No. 26 Berth.

Ships approaching Abadan shall give their ETA at Shatt al Arab Outer Bar 48 hours before arrival.

A standard quarantine message should be transmitted to the Port Health Officer at Al Faw 24 hours prior to arrival at the Outer Bar. The Iraqi Port Health Officer will grant pratique before ships can proceed up the river. This does not clear vessels for Iran, and after the vessels are anchored or berthed at Abadan, boarding will take place to grant pratique for Iran.

The Iraqi National Flag should be displayed until the ship comes within the port limits of Abadan, when the Iranian National Flag is displayed.

The entire harbor area of Abadan is a Danger Zone and special regulations are in force therein. No anchoring, except in the designated anchorages, is allowed. Vessels must proceed at slow speed. As shipping is underway day and night, it is necessary that mooring lines be taut to prevent surging at the piers. Ships proceeding in the same direction are not permitted to overtake or pass each other between Moaviyeh Spit and Outer Western Lighted Buoy.

Vessels in Abadan Reach should never sound their sirens except in an emergency, as the "fire alarm" at Abadan and Bavardeh is given by siren.

Fire aboard ship is indicated by a continuous ringing of the ships bell, together with a succession of long blasts on the whistle.

Anchorage.—In transit of the Shatt al Arab, the recognized anchorages are the Oosbeh Anchorage (Kasba Anchorage), situated about 2 miles above Al Faw, with a maximum depth of 10.7m (fresh water), and the Bavardeh Anchorage, situated about 2 miles above Abadan, with a maximum depth of 9.4m (fresh water).

Vessels with a draft too great to allow departing the Shatt al Arab on one tide are required to anchor at Qosbeh. Below and opposite Bavardeh, there are five anchoring berths, lettered A to E, with the limits of each berth marked by transit beacons on the SW bank of the river. Depths at these berths range from 9.1 to 10.6m, but a maximum draft of only 9.1m is permitted.

All ships, whether awaiting a berth or loaded, must anchor below the lowest pier at Bavardeh; no ship bound for Abadan or Bavardeh may ascend the river above the pier until a harbormaster is aboard.

Caution.—A wreck, marked S by a lighted buoy, lies on the NE side of the channel W of the NW extremity of Berth No. 13.

17.25 Al Khast Reach extends from **Al Khast** (30°20'N., 48°16'E.) for about 8 miles to 0.5 mile above **Harteh Point** (Hartah Point) (30°22'N., 48°11'E.). North of Al Khast, the deep channel is on the N side of the river, but it then crosses to the S side, SE and S of Jazireh-ye Minu (Jazireh-ye Menu). It then skirts the W side of that island, passing E of Jazirat al Qitah (Lazirat Qatah) and Jazirat Abu Dawad (Jazirat Abu Daud) and the banks extending N from the latter.

A prohibited anchorage area, indicated on the chart, lies in the river between Abadan No. 1 Pier and a notice board on the N bank about 2 miles W. The channel NE and E of Jazireh-ye Minu is only available to boats.

With a strong outgoing tidal current, an eddy, which must be guarded against, is formed in the S part of the river S of Jazirat-ye Minu.

A lighted buoy, moored on the W side of the channel about 0.5 mile SW of Harteh Point, marks the E edge of the bank extending N from Jazirat Abu Dawud. Anchorage is prohibited in the river about 2 miles N of Jazirat Abu Dawud, where a pipe-

line area is marked by notice boards ashore.

Anchorage for five vessels awaiting the tide can be taken, in a depth of about 8.5m, fresh water, in the vicinity of Harteh Point.

17.26 Karun Bar (30°23'N., 48°11'E.) extends from about 0.5 mile above Harteh Point to just below the junction of Haffar Channel with the Shatt al Arab, about 3 miles farther N. The track across the bar varies considerably, especially at the beginning of the flood season in March or April, when very rapid changes in the channel can be expected. Such changes prevent the establishing of permanent range marks; lighted buoys are moved as necessary to indicate the channel.

During times the bar is in an unsettled condition, a surveying vessel is stationed there to check the depths and, when necessary, a special pilot boards inbound vessels in the vicinity of Harteh Point to conduct them across the bar. Except in the flood season, the least depth over the bar is 5.8m. The channel depth over the bar is normally maintained at 7.0m; the maximum fresh water draft that can be taken over is 8.5m at springs and 8m at neap.

Vessels arriving with deeper draft are required to lighten; barges for this purpose can be sent down either from Al Basrah or Khorramshahr, depending on the vessel's destination.

This is a seasonal bar formed by the freshets from **Ras-e Karun** (30°26'N., 48°11'E.) bringing down silt into the Shatt al Arab before the latter river is sufficiently in flood to keep the silt moving. Since the bar is constantly changing, the latest information on depths and navigational aids should be obtained from the Port Officer.

Under normal conditions, HW on this bar occurs about 3 hours after HW on the outer bar; the rise is approximately 2.2m at springs and 1.6m at neaps, except during the flood season, when it may be as much as 3.5m. Lower LW generally does not fall below a rise of 0.7m on the bar.

Numerous surveying markers are maintained on each bank of the river in the vicinity of the bar; those bearing even numbers stand on the E bank, with the odd-numbered markers on the W bank. A lighted buoy, moored 1.5 miles above Harteh Point, marks the W side of the channel.

Two lights are shown near the SE end of **Umm Ar Rasas** (30°25'N., 48°10'E.). Dabbah Spit Lighted Buoy marks the extremity of a spit, on the W side of the bar, extending SE from Umm Ar Rasas.

Haffar Channel (30°25'N., 48°10'E.) is the outer part of the Ras-e Karun between the Shatt al Arab and Khorramshahr. There is a drying pier on the N side of the entrance. There are several T-headed piers, with depths up to 4.9m alongside, on the S bank of the river opposite Khorramshahr. There are several mooring buoys in the river. Four sets of uncharted anchoring beacons, lettered A to D, mark anchoring berths E of No. 5 Pier.

17.27 Khorramshahr (30°26'N., 48°11'E.) (World Port Index No. 48420) lies at the junction of the Shatt al Arab and Rud-e Karun, and was once considered the principal commercial port of Iran before there was extensive damage in the conflict with Iraq; reconstruction is underway. The city extends about 2 miles along the N shore of the river within the entrance of Rud-e Karun.

Ports and Maritime Organization Home Page
http://www.pmo.ir

Khorramshahr Home Page
http://khorramshahrport.pmo.ir

Winds—Weather.—The NW shamal and the SE kaus are the principal winds which affect the port by their influence on the time and height of the tide; climatic conditions have little effect on port operations.

From March through September, daytime shade temperatures may reach 49°C; sun temperatures in July sometimes approach 74°C. In winter, temperatures of -1°C have been recorded. The mean daily minimum temperature for January is 8°C.

December and January are considered the wettest months for rainfall. Relative humidity varies from near zero in August to 77 per cent in January.

Tides—Currents.—The tidal rise at Khorramshahr is about 2.1m at springs and 1.7m at neaps. The maximum velocity of the flood current is 1.5 knots. The maximum velocity of the ebb current is 3 knots.

The tides vary according to the season, with the highest tides occur during May to June and the lowest in October. Both time and height of tide are greatly affected by the prevailing wind. A strong kaus will raise the water level 0.6 to 0.9m; a strong shamal will retard the time of HW and lower its level, causing the water level to fall below the zero of the tide gage.

Winter floods cause a maximum rise of 3.5m in the water level.

Depths—Limitations.—Depths vary from 8.2 to 8.5m off and above Harteh Point and its anchorage. Sentab Jetty runs parallel to the river and adjacent to the N entrance point of Haffar Channel; berth information is given in the accompanying table titled **Khorramshahr—Berth Information**.

A temporary berth, used for container traffic, is 110m long, with a depth of 8.0m alongside.

Khorramshahr—Berth Information

Berth	Length	Depth alongside
No. 1	150m	8.2m
No. 2	150m	8.2m
No. 3	150m	8.2m
No. 4	150m	7.9m
No. 5	150m	7.9m
No. 6	150m	6.5m
No. 7	150m	6.5m
No. 8	150m	8.8m
No. 9	150m	9.2m
No. 10	Berth not in use	
No. 11	180m	7.7m

Khorramshahr—Berth Information		
Berth	**Length**	**Depth alongside**
No. 12	180m	8.0m
No. 13	180m	6.7m

Vessels up to 2,000 tons, with a maximum length of 66.9m and a maximum draft 4.3m can be accommodated.

Due to congestion in port, both at the berths and anchorage, ships should have their mooring lines taut, especially during tidal changes, and their main engines ready to use.

Pilotage.—Pilotage is compulsory for all vessels. The pilot boards in position 29°50.2'N, 48°47.1'E.

The pilotage ends at the harbor limits of Khorramshahr or its anchorage, from where a Berthing Master takes over and will either anchor the ship or take it alongside, if a berth is available.

Pilots can be contacted on VHF channel 16.

Regulations.—Berthing is usually done during daylight hours only.

The port authorities require 24 hours notice of arrival before ordering a pilot. The vessel's ETA at the pilot boarding position should be sent through Khorramshahr Coast Radio Station (EQK) 24 hours before arrival and should include the following information:

1. Length overall.
2. Fresh water draft.
3. Details of cargo (vessels carrying explosives are not allowed to berth).
4. Other requirements, as requested.

Vessels should contact Khorramshahr Coast Radio Station (EQK) on VHF channel 16 upon arrival at the pilot boarding position to obtain berthing information.

Ship's speed shall not exceed 3.5 knots for vessels with more than a 6.1m draft and 5 knots for all other vessels over 100 gt, on passing wharfs, piers, etc.

The Iraqi Port Health Officer at Al Faw will grant pratique before the ship proceeds upriver, on receipt of the standard quarantine message sent 24 hours prior to arrival at the Outer Bar. This pratique does not clear vessels for Iran. After ships are anchored or berthed at Khorramshahr the medical officer will board to grant pratique.

The National Flag of Iraq must be displayed until the ship has entered the port limits of Khorramshahr. The Iranian National Flag is then displayed.

Contact Information.—Khorramshahr Coast Radio Station can be contacted, as follows:

1. Call sign: Khorramshahr Port Radio
2. VHF: VHF channels 13, 16, 18, and 25
3. Telephone: 98-63242-24096
4. Facsimile 98-63242-13422
5. E-mail: info@khmail.ir

Anchorage.—Ships with a draft up to 8.2m anchor in the river NW of the entrance of Haffar Channel and discharge cargo into lighters if a berth is unavailable. There are five or more mooring buoys along the NE side of the river above Sentab Jetty.

Anchorage is taken all along the river sides, clear of the main channel, as far as **Umm al Khasasif** (30°26'N., 48°08'E.), but the entire area is very congested with ships.

Mooring buoys on the E side of the river below Haffar Channel are used by light-draft naval vessels.

Caution.—A wreck, dangerous to navigation and marked by a lighted buoy, lies 1 mile NW of Haffar Channel entrance.

17.28 On the S side of the main channel between the entrance of Haffar Channel and Al Basrah are the islands of Jazirat Umm al Khasasif, Umm al Libabi, Jazirat Rumaylah, and Jazirat al Baljaniyah; on the N side are the islands of Jazirat ash Shamshamiyah, Jazirat Umm at Tuwaylah, and Jazirat Ujayrawiyah.

The channel follows the N bank of the river to the W end of Jazirat Umm al Khasasif, where it passes through Satans Gap, between Jazirat Umm al Khasasif and Jazirat ash Shamshamiyah.

It then skirts the S sides of Jazirat ash Shamshamiyah and Jazirat Umm at Tuwaylah until about 2 miles above the W end of Jazirat Ujayrawiyah, when it follows the S bank of the river.

White pillars, marking the boundary between Iran and Iraq, are situated on each side of the mouth of **Khayyen Canal** (30°27'N., 48°07'E.).

Satan's Gap (30°27'N., 48°06'E.) is a narrow passage; the channel is marked on its N side by a lighted buoy and on its S side by a can buoy.

Ships running with the current have the right of way through Satan's Gap.

A stranded wreck lies on the N side of Satan's Gap; another wreck lies sunk, in a depth of 8.5m, near the middle of Satan's Gap, causing a major compass deflection.

A 7m patch, marked by a lighted buoy close off its W side, lies about 0.2 mile NNW of the W extremity of **Jazirat al Baljaniyah** (30°27'N., 48°03'E.).

Mooring buoys for ocean-going ships are situated on the N side of the channel, about 6 miles from Jazirat al Baljaniyah.

17.29 Al Basrah (30°30'N., 47°49'E.) (World Port Index No. 48400), before the conflict with Iran, was the principal commercial port of Iraq. The city and old town are situated about 2 miles within the **Nahr al Ashshar** (30°31'N., 47°51'E.), an inlet leading from the port area on the Shatt al Arab.

Al Ma'qil (30°33'N., 47°48'E.), the main port area, contains almost all the port installations, wharves, and warehouses. Al Ashshar, the principal mercantile section of the town, is situated along the river on either side of Nahr al Ashshar.

Winds—Weather.—Strong winds are rare in Al Basrah, the average force being 3 knots. The summer months are usually dry and hot, with prevailing winds from N.

South winds, which are fairly frequent during April, May, August, and September, usually cause a sharp increase in humidity. From June through the middle of August, the average temperature is well over 32°C, and maximums of over 88°C have been recorded.

During the winter months, from November through April, the climate is damp and raw. Temperatures may occasionally drop below freezing. Rainfall mostly occurs during the winter months in short heavy downpours.

Tides—Currents.—Tides in the Shatt al Arab are considerably affected by wind conditions and by seasonal variations in the river level. A strong SE wind will raise the level of the river by 0.6 or 0.9m and will also accelerate the time of HW. A strong NW wind will cause the level of the river to drop below zero on the tide gauge and will retard the time of HW.

The mean rise at HHW on the outer bar is 3m; at Al Basrah it is 2.1m. Seasonal variations in the level of the river are small at the outer bar, but at Al Basrah they are as much as 0.6m in June and 0.2m in October.

In the river, the highest levels occur in May, June, and July, when the Shatt al Arab is discharging the combined flood waters of the Tigris River and the Euphrates River.

Tidal currents vary considerably throughout the Shatt al Arab; at Al Basrah, the velocity of the tidal currents varies with the seasons. During the flood season, the outgoing current may attain a rate of 4 knots.

During the dry season, the currents vary from 1 to 2 knots. The time of turning of tidal currents does not coincide with the times of HW and LW.

At Al Basrah, the flood current begins 3 hours 30 minutes before the time of HW; and the ebb current begins about 1 hour 45 minutes after the time of HW.

Depths—Limitations.—The maximum draft for a ship proceeding to Al Basrah is determined by the depth of water on Karun Bar. If lightering into barges is necessary, this operation can be carried out at Harteh Anchorage. Final loading may also have to be expedited at this anchorage.

At Al Maqil, there is a continuous wharf 2,000m long, which has 14 berths, although only 12 vessels can berth simultaneously. There are depths of 8.2 to 9.1m alongside the wharf. A vessel with a maximum length of 171m can be accommodated. It has been reported (2013) the new container-handling facilities at Berth No. 14 have been completed and are now in operation.

The grain wharf, situated S of the entrance to **Nahr al Kibasi** (30°33'N., 47°49'E.), is 213m long. It can accommodate a vessel with a maximum length of 183m and a maximum draft of 8.8m.

Muftiyah Oil Depot, below the grain silo, is 175m long and will accommodate ships about 158m long with a draft of 6.7m, subject to silting, although caution is necessary as the status of the facility is not known due to obstructions off the berth.

The fertilizer wharf at **Abu Flus** (30°27'N., 48°02'E.) is 100m long and will accommodate a vessel with a maximum length of 182m and a maximum draft of 8.8m. Three steel jetties N of the fertilizer berth can accommodate vessels up to 171m long, with a maximum draft of 8.8m.

It has been reported (2012) that traffic at the port is limited to coastal vessels and barges up to 100m in length, with a maximum draft of 5.5m.

There are numerous mooring buoys in the river, which are mainly used by ships loading export cargo. Vessels may load and discharge cargo at the wharves, but on completion of the latter, must move to the moorings or anchorage to complete loading. Ships are often moored in double rows in the river and off-loaded to many lighters, which is a cause of congestion.

Berthing is allowed only during daylight hours and is dependent on tidal conditions.

A pontoon bridge, a draw bridge, and a power line cross the Shatt al Arab in the vicinity of Al Ashshar. Vertical clearances for these structures are unknown (2014).

Pilotage.—Pilotage is compulsory. The pilot vessel cruises on station in the vicinity of Rooka Buoy. An Iraqi pilot will conduct the ship within the harbor limits of Al Basrah, where the harbormaster will take the ship to a berth or an anchorage.

A 48-hour radio notice of ETA is required before pilot will board. Radio contact should be maintained with Basrah Radio YIR) and on VHF channels 14 and 12. Pilots will get ships underway day and night if the tide is favorable.

Transit of the Shatt al Arab cannot be accomplished on one tide and the ship must anchor at one of the recognized anchorages on the river.

A ship bound for the principal wharves at Al Maqil will be boarded by a harbormaster off the grain wharf. A ball displayed at the signal station indicates the harbormaster is on his way to the ship; a cone displayed indicates the vessel should anchor and await his arrival.

While within Iraqi territorial waters, ships underway will maintain a listening watch on channel 16 for instructions by control authorities. Ships bound for Al Basrah should advise the Iraq Maritime Transport Company, via Basrah Radio (YIR), of their ETA at Shatt al Arab Outer Bar 48 hours prior to arrival.

Masters should also advise their ETA at least 24 hours before arrival in Iraqi waters to the Control Officer, Basrah Control (YIR).

Regulations.—There are coast and port radio stations at Al Maqil and a port radio station at Al Makinah.

A message should be directed to Fao Radio (YIS) requesting free pratique from the Medical Officer, Al Faw, and giving state of health of crew and the arrival time at the pilot station. The ship is boarded at Al Faw and pratique is usually granted by the Medical Officer prior to arrival at Al Basrah.

Special regulations that apply are in force at the port of Al Basrah. Vessels should obtain a copy of these regulations on arrival in port.

Anchorage.—Anchorage can be taken at the numerous mooring buoys in the river off the port, as indicated on the charts. Ships secure bow and stern to the buoys.

There are recognized anchorages off **Nahr al Khawrah** (Khora Anchorage) (30°30'N., 47°51'E.), in a depth of 8.8m (fresh water). Ships can also anchor, in similar depths, at Jubaylah Anchorage, situated off the grain wharf and silo.

Vessels anchor with two bow anchors ranged to four shots of chain parallel to the river.

At Abu Flus, about 12 miles above Harteh Point, there is anchorage, in a depth of 8.8m. However, the area is constricted, the current strong, and the bottom is shifting sand, so the vessel may drag anchor.

17.30 The Shatt al Arab is navigable as far as Al Qurnah, about 40 miles above Al Basrah, by vessels with a draft of 4.6m. The deeper channel is NE of Jazirat al Waqf al Muhammadiyah and North Island, about 0.5 mile farther NW; the bottom everywhere is mud.

Hawr al Hammar (Hammar Lake) discharges through Qarmat Ali Channel into the Shatt al Arab abreast the gap between Jazirat al Waqf al Muhammadiyah and North Island.

Overhead telegraph wires, with a vertical clearance of about 21.3m, span the mouth of Qarmat Ali Channel. The W bank of

the Shatt al Arab, above and below Qarmat Ali Channel, is bordered with brick kilns.

Nahr Kutayban (Kutaiban Canal) (30°41'N., 47°46'E.) enters the E side of the Shatt al Arab about 5 miles N of North Island and is reported to connect with Rud-e Karun.

The E bank of the Shatt al Arab, between Al Basrah and the canal, is bordered with date groves; N of the canal is an open, sandy desert.

The W bank of the river in this vicinity has a thin fringe of date palms, beyond which is desert that is sometimes flooded.

About 2 miles N of the entrance of Nahr Kutayban, the river turns NW, with general depths of 7.3m near its NE bank.

Near the SW bank, it is shoal for the first 2 miles, after which it is steep-to on that side; there are greater depths close to a prominent point, above which vessels should keep to the SW side of the river.

Nahr Umar is on the SW bank of the river, about 6 miles above the mouth of Nahr Kutayban. For the next 17 miles, there are no navigational difficulties.

Ash Shafi Creek, with some brick kilns at its entrance, is easily identified where it enters the river about 10 miles above Nahr Umar; the W bank N of the creek is backed by an open plain.

About 1.5 miles N of Ash Shafi Creek, there are depths of less than 3.6m, but farther N depths increase to 6.4m.

About 3 miles N of the creek, the river narrows; the W bank, which is thickly bordered with date palms, is steep-to, with a depth of 7.3m close alongside.

About 8 miles above Ash Shafi Creek, Nahr Shuwayyib (Shuwaiyib River) flows in on the E side, where the Shatt al Arab is narrowest.

17.31 Odin Point (30°59'N., 47°29'E.) is on the W bank, close N of Nahr Shuwayyib, where the Shatt al Arab widens into Qurnah Reach, and the bar of the combined Tigris River and Euphrates River is formed.

The greatest depth is close along the NE bank, where the channel is very narrow and has a least depth of 2.1m in the fairway. After passing the bar, the Shatt al Arab narrows again and the depth increases to about 11m at the junction of the rivers.

Al Qurnah (31°00'N., 47°26'E.) is a small town situated on the point at the confluence of the Tigris River and the Euphrates River. It is connected with the general telegraph system.

From Al Qurnah to **Amara** (31°43'N., 47°06'E.), the general depth is about 4.0m at high river and 1.8m at low river.

Between Al Qurnah and **Al Azair** (31°19'N., 47°25'E.), the river is marked by black posts and white posts; these posts denote the course of the river when the banks are covered during floods.

For the first 10 miles, there are depths of 3.6 to 7.5m; the current is strong.

Caution.—Some bad bends will be found between Al Qurnah and Amara; some reaches are extremely difficult during the low river season because of the narrow and tortuous course of the channel, combined with a very strong current.

Great care must be taken to avoid grounding on the spits, which extend a considerable distance at the worst bends.

The river level is much affected by the regulated flow to a number of canals leading off the river, which carry off the water, a resulting in a drop of 0.3 to 0.5m in the water level at times.

Arabic

ARABIC	English
A	
ab, abu	father, chief
abar, abyar, abiar	wells
abiadh, abyadh, abiad	white
abraqhill,	rock
adel, aleb,	sloping hill
aegsand	dune
aezraq, azraq	blue
aghbar	gray
aghbas	dark (color)
ahal	black
ahmar, ahmer	red
aich, aik	hard bank
ain, oyun (pl)	well, fountain
air	fortress
ajaj	sandstorm
ajfar	well
akaba, acol	wilderness
akbar	bigger, biggest, older (of two)
akhal	black
akhdhar, akhdar, akdar	green
al	the
ala	height, higher
ala wara	astern
alam	hill, cairn
alama	beacon
alama bi shaki jaras	bell buoy
alama noor	light buoy
alama sabaya	buoy
alawi	islands
alou	height
amama	head
amara	building
ameeq, amik, amiq	deep
amin	village
amir	prince
amshi deladel	slow
amwaj	breakers
amwaj kubra	breakers
anak	cliff
aqabar	wilderness
aqaba	hill
ar	the
ara al bahr	low water
arab	arabs
araja	sand dune
arbi	arab
ard	land, earth, ground
areg	sand dune
ari	shoal, shallow
arich	boundary
arq	sand dune hills
asar	ruins, mountains
asfal	lower
asfar	yellow
asfel	low
ash	the
asharet-dabab	fog signal
ashtum	channel
asif	river
asifa, asifah	gale, storm
asraq	blue
assaka	settlement
aswad	black
atama	beacon
atha	ruins, monument
atiq	old
atlal	ruins
atta	bank
atta metawel	bar
auwil	first, beginning
awama zat nur	light buoy
awama zat sofara	whistle buoy
awamet-garas	bell buoy
awari	shoal
awawa	buoy
ayn	well
azraq, azreq	blue
B	
bab	strait, entrance
baboor, babur	steam vessel
badiyat	desert
baghala	dhow
bahat	well
bahr	channel, river, lake, sea, bay
bahr ali	high water
bahr shaban	deep water
bahr wati	low water
bahrat	wadi, watercourse
bahraya	pool, lake, pond
bahri	south
bahri-bahri-gharbi	southsouthwest
bahri-gahri-sharqi	southsoutheast
bahri-gharbi	southwest
bahri-sharqi	southeast
baida	desert
baidha	white
bakhira	steam vessel
balad	country, region, town
balam	boat
band	dike
bandar	bay, port, harbor, open roadstead, chief town
bandera	flag
barq	hill
barr	headland, earth, sandbar, bank, shore
barr ramleh	sandbank

ARABIC	English
barusi, barrosi	anchor
basta	tower
batbit	whirlpool
bati	slow
baura	anchor
bawara	heavy anchor used in Kuwait
bayda	white
behr neksan	half tide
behr seneh	high water
behr yari	ebb
beida	white
beit, bait	house
beiyat	shoal that dries
bejir	desert
beros	anchor
berriyah	desert
bheira	lake
bid	well
bidat	canal
bilad	town, country
bir, biar	well
birba, baraby	ancient temple
birka, birkah	pool, pond, small lake
bofa abu nur	light buoy
boghaz	strait, entrance channel
boja	buoy
boja abu jeras	bell buoy
boja musaffira	whistle buoy
borg, bordj, burj	fort, tower, castle
boya	buoy
boya abu nakus	bell buoy
boya en nur	light buoy
boya es siti	whistle buoy
bu	chief
bughaz	gulf, strait
buhaira	lake
bukah et tin	mudbank
bum	large dhow
bura, buroosi	anchor
burayq	hills
burg, burj, burt	tower
busla, brussala	compass
but	boat
butaira	small dhow
buy	fort, tower
buz	cape

C

ARABIC	English
casbah	citadel, fortress
chegag	ruin
chemal	south
cherk	east

D

ARABIC	English
dabab	fog
dahal raml	sandbank
dahar	peak
dahl	bank
dahl tin	mudbank
dahra	north
daig, daiq, daiyaq	narrow
dakka	wharf, pier, quay, jetty
dala-dala	slow
dar	house, settlement
darba	squall
dau	light
dawamir dakhil el behr	rock (sunken)
dawamir kherej el behr	rock (above-water)
dawhat	bay, cove, port
debab	fog
dekeh el amwal	quay
dekhil, dekhul, dekhla	entrance, passage
dekka hak el mal	wharf
dekka hak en nazul	pier
dekka saghir	jetty
derbeh ghefleh	squall
deym	village
dhabab	fog
dhayyeg	narrow
dihr	coast
dira	compass
disha	hill
diyik	narrow
djal	small hill
djebel	hill, mountain
djenub	south
djezira	island
djouf	dry
dohat, doha, duhat, dawhat	bay, cove, port
duar	encampment
dulay	hill

E

ARABIC	English
egeidet	sand hill
el	the
el nedd	tide
erg	sand dune
ezba	village

F

ARABIC	English
faluka, feluka, filuka	boat
fanar	lighthouse, beacon
fanus nur	light
faregh	broad, level, wide
farsh	plain (noun)
fasht	reef, shoal, islet
fisa	fast
fosma	channel, passage, entrance
fulk	small boat

G

ARABIC	English
gaan baded	arm of the sea
gala	castle, tower, fort
galawa	basin

ARABIC	English
gamb yamin	starboard side
gamb yasar	port side
gami	mosque
ganub	south
ganub-ganub-gharb	southsouthwest
ganub-ganub-sharq	southsoutheast
ganub-gharb	southwest
ganub-sharq	southeast
gar	small flat hill
gara, garrat	lake
garar al bahr	bottom
garf	cliff
garib	boat
gazr	ebb
gedid	new
gezfret	island
ghalah	deep
ghamiq	deep
gharb, gharba, gharbi	west
gharb el jinub el gharbi	westsouthwest
gharb-ganub-gharb	westsouthwest
gharb-shamal-gharb	westnorthwest
gharbi-bahri-gharbi	westsouthwest
gharbijanoob-gharbi	westsouthwest
gharbi-qibli-gharbi	westnorthwest
gharig	deep
ghauba	sandstorm
ghazir	deep
ghobar	fog
ghubbat	gulf, bay
ghubra	sandstorm
ghurmac	peak
gidan	bank, sandbank
giddam	ahead
gisr, gusur (plural)	bank
gizan	dune
gour	small flat hill
goz, gowaz (plural)	high sand hill
gubba	dome
guddam	ahead
guebli	south
guennar	peak
gumruk	customhouse
gunn	bay

H

ARABIC	English
habba	squall
habia	peak
habub	sandstorm
hadd	boundary, limit, sandspit, reef
hadjara, hagar, hajar	stone, rubble
haggag	long projecting ridge
hagiz	bar, mole
hair	pearl bank
hait	wall
hajar balyin	rock (above-water)
hajar mugatta	rock (sunken)
hajari	stony
hajira	town
hajiz	mole
hajr	rock (above-water or sunken)
halat, hala	sandbank, islet
hamra	red
hanouck	low
haram, ahram (plural)	pyramid
hasa, hasba	gravel
hassar, hissar	rock
haswa	gravel
haudh	basin
hawa	wind
heb	coast
helkat	circular
hesah hesah	gravel
hilla	village
hiqab	cliff
hirab	abeam
hisar	fort, castle
hisn	fort
hiza	abeam
hod	basin, pool, small lake
hor	creek, shallow marsh
houd	basin
hubub	sandstorm
humra	red
husen, husun	tower, castle

I

ARABIC	English
ibn	son, descendent
ilwat, ilwet	region
imarah	seat of governor
imi	hill
irq	dune
iswid	black
izbit, izbet	village

J

ARABIC	English
jabal, jebel, jibal	mountain, hill
jadwal	canal, stream
jam, jamia	mosque
janoob, janub	south
janoobjanoob-gharbi	southsouthwest
janoobjanoob-sharqi	southsoutheast
janoob-sharqi	southeast
jazair	islands
jazirat	island, islet
jazr	ebb
jebel el hejer	cliff
jebel kayem	peak
jejirah saghjr	islet
jenub-gharbi	southwest
jenub-sherqi	southeast
jezr	ebb
jilf	cliff
jinub	south

ARABIC	English
jinub el gharbi	southwest
jinub el jinub el gharbi	southsouthwest
jinub el jinub esh shargi	southsoutheast
jinub esh shargi	southeast
jisr, jusur (plural)	bridge
jorf	cliff
jubayl	mountain
junub	south
jurf	cliff

K

ARABIC	English
kabat	rocky shoal, group of rocks
kabir	large
kad	shoal, spit
kafab	cliff
kafr, kufur (plural), kefr	village
kalah	fort
kalat	castle
kalig	canals
kanisa, kenisa, keniseh, kineesa	church
karm	artificial mound
karn	summit, peaked hill, point
kasar	shoal
kasba	citadel, fortified town
kasim	territory, political division
kasr bahr	breakers
kassar	rock (above or below-water), rocky islet
kassara	breakers
katah, katat	rocky shoal, group of rocks, sunken rock
kateh el behr	bottom
kathib	dune
katib	paint
kaud	dune
kebar, kebir	large
kef, kaf	mountain, rocky point, coast
keruky	sketch, plan
keryah	village
keshem	watercourse
khadra	green
khala	country
khaleej	gulf
khalfa	sandstorm
khalij	gulf,bay
khaltj	gulf, bay, estuary, canal
khan	inn, hotel, bazaar
kharium	sandspit
khashm	mouth of river
khatar	danger
khawr	inlet, channel
khelij	gulf
kheter	danger
khijem	encampment (tents)
khirs	barren land
khod	shallow, ford
khor	river channel, cove, bay, estuary, inlet, ravine
khuba	mudbank
khudra	green
khul	spring tide, flood
khul kebir	flood tide
kibli	south
kidan	bank, sandbank
kidif nes	dune
kidwa	small mound
kimmat	peak
kinar	boundary, border, limit
kinisa, kinis	church
kinisat, kinizat	sandbank
kita	rocky shoal, group of rocks
kitif en nes	sandbank
kola	hill
kom	mound
kom en nes	dune
kothon	port, anchorage
kubbah	dome
kubbat	deep bay, inlet
kubbeh	beacon
kubry, kabary (plural)	bridge
kuddam	ahead
kudiat	small hill
kuh	hill, mountain
kusbat, kut	citadel, fortified town

L

ARABIC	English
liman	port, anchorage
lisan	head, headland

M

ARABIC	English
ma hali	fresh water
ma mutawasid	half tide
madd	current, flood
madd galeel	half tide
madd kabir	spring tide
madd kamel	high water
madd qawi	spring tide
madina	town
madiq	strait
madkhal	inlet, entrance
mael behr	salt water
maftul	tower
maghreb	west
mahal nuzul	landing place
mahatta	station (railway)
mahgar	stone quarry
majaz	pass, marine channel
majra	canal, channel
makalla	channel
makan ara	shoal
makan en naze	landing place
makhila	fog signal, storm
makhraj	canal
mal, malih	salt, brackish
malka	stream confluence
mamarr	passage
manara	lighthouse

ARABIC	English
manfad, manafid	pass (defile)
mantakat	zone
manzal	settlement, landing place
maqam	tomb
marabut	monument or tomb
marakat	soft bottom shoal
marfaa	harbor
marjan	coral
markab shera	sailing vessel, ship
markeb, markib shiraa	sailing vessel, ship
marsa, marza	anchorage, roadstead, bay, cove, port, harbor, gulf
marso	harbor
marso keshef	roatstead
marso saghir	basin
masab	mouth of river
masafa, masafah	range
mashriq	east
masjid, maskid, masgid	mosque
maskan	house
masura	pipe
maten	plateau
matla	east
matmor	silo
mauj, mauja	wave
maya hilwa	fresh water
mayeh	current
medauwar	circular
medina	city, town
medkhal, medkhel	passage, entrance
meena	port (harbor)
megjrib	west
menarah	lighthouse
mengar	nose, head, point
mensla	channel
mersa	roadstead, anchorage
mesjid	mosque
mina	port, harbor, mole
mina kharga	roadstead
minar, manar	minaret, tower
minara	lighthouse
minqar	nose, head, point, headland
miqra	channel
mirjan	coral
mirsa	port
miyah	water
moga	wave
moghreb	west
moiya	shoal, shallow
moiya aria	low water
moiya hilwa	fresh water
moiya kebir	high water
moj	wave
morgan	coral
mosque	mohammedan church
mowyah hali	fresh water
mowyahel behr	salt water
moya azb	fresh water
muaskar	military camp
mudawwar	circular
muhassan	fortified
mukhaijan	encampment
mukhtqa	anchor
murjan, murgan	coral
murshid	pilot
mustanqa	marsh
muzik	strait

N

ARABIC	English
nadd wafi	spring tide
nahiyah	district
nahr, anhar (plural)	river
najwa	shoal, spit
nakhl, nakhil, nikhl	palm tree, date grove
naliya	compass
natur	tower
nebi	tomb
neis	sand
nes hesah	gravel
niwat	steep-to shoal, coral reef
noor	light
noww	squall
nuksan el behr	low water
nuqta	point
nur	light
nusf madd	half tide

O

ARABIC	English
ouarour	steep mountain
oued	river

Q

ARABIC	English
qa	bottom
qa al bahar	bottom
qabr	tomb
qad	reef
qadim, qadima	old
qafa	astern
qala, qalaa	fort, prominent peak, castle
qaleel al ghur	shallow
qanaya	rivulet
qantara	bridge
qara	small dark hill
qaranasla	peak
qarn	point
qarya	village
qasar	above-water rock, rocky islet
qasr, qusur (plural)	port, large house
qibli	north
qibli-gharbi	northwest
qibli-qibli-gharbi	northnorthwest
qibli-qibli-sharqi	northnortheast

ARABIC	English
qibli-sharqi	northeast
qubba	dome
quddam	ahead
qur	hills
quwayrat	hill, mountain

R

rabban	pilot
rais, reis	captain of a vessel
rais el marsa	captain of the port
rakat	shoal, hard bank
raml, ramla	sand
ras	cape, point, head, hill, peak
ras el jebel	peak
ras fel	mole
raseef	jetty, wharf, quay
raseef al mina	pier
rasif, rasyf	pier, quay, wharf
reeh	wind
rif	coast
rig	shallow bank, reef, shoal, flat
rih	wind
rod	small watercourse
rooma	bar
rubban	pilot
rud	river
rujm	cairn, hill
ruqq	reef, shoal

S

saaina bakhur ya	steam vessel
sadd	bar, obstruction, barrier, dam
sadd min at tin	mudbank
safina shara iya	sailing vessel
safra	yellow
sagal	gravel
sagala	port (side)
sahah, sahra, sahary	desert, plain
sahel, sahil	beach, coast, shore
sakh, sakhr	rock
sakhra	rock (above-water)
sakhra fog alma	rock (above-water)
sakhra taht al ma	rock (sunken)
sambuk	sailing vessel
sanjak	starboard side
sanjaq	flag
saqya, saqiye, saqyat	canal
sar, sareea, sari	fast
satah	shallow
sawa sawa	abeam
sawahil	coast guard
sawiyah	point
sedd	mole
sedjaa	muddy
seghir	little
seil	watercourse
serih	speed
sfer	yellow
shaab	coral
shab	rocky shoal, reef
shabura	fog
shakhis	stake, pole
shamal	north
shamal-gharb	northwest
shamal-shamal-gharb	northnorthwest
shamal-sharq	northeast
shamal-shamal-sharq	northnortheast
shamandura	buoy
shamandura bi fanus	light buoy
shamandura bi suffara	whistle buoy
sharg el jinub esh shargi	eastsoutheast
sharg esh shamal esh shargi	eastnortheast
shargi, sharqi	east
sharm	inlet
sharq-bahri-sharqi	eastsoutheast
sharq-ganub-sharq	eastsoutheast
sharqjanoob-sharqi	eastsoutheast
sharq-qibli-sharqi	eastnortheast
sharq-shimal-sharq	eastnortheast
shatt	river, river bank, coast
shatt ramli	sandbank
sheb, shib	reef
sheikh, shaikh, shaykh	chief elder
sherm	cove, creek
shimal	north
shimal el garbi	northwest
shimal esh shargi	northeast
shimal esh shimal el garbi	northnorthwest
shimal esh shimal esh shargi	northnortheast
shur	low clay hill
sidi, sedi	tomb
sif, sifa	coast,sandy beach
sifi	low
sigala	mole, jetty, landing place
sikha	road
soda	black
suffara ad dabab	fog signal
suffara sabayya	whistle buoy
sura	speed
surkh, sorkh	red

T

tabb	dune
tabia, tabya	fort, tower, castle
tabr	canal
taht	under, below, beneath
tall, tell, tulul (plural)	hill
taraf	point
tarf	cape
tarsana	arsenal
taufan	storm

ARABIC	English
tawil	long
tayyar	current
thaghr	port (harbor)
tiligraf	telegraph
tm	mud
tira	channel
tiyar	current
touffik	hamlet
tufan	storm
tufan en nes	sandstorm
turab	mud
turah	canal, channel
turiq	road
U	
uad	river, stream
udd	bank, sandbank
ust	middle, center
W	
wad, wadi	mouth of river, channel, watercourse
wahl	mud
war	rock (sunken)
wara	astern
wast	middle, center
wed	river
werayi	astern
wust el madd	half tide
Y	
yameen al markib	starboard side
yamin	starboard side
yasar al karkib	port side
yemin el merkeb	starboard side
yesar el merkeb	port side
yisar	port side
Z	
zab	oasis
zaimah	boat
zarqa	blue
zawia, zawiya	house, monastery
zerga	blue
zoba ah ghetleh	squall
zoubaa	storm

French

FRENCH	English
A	
abri, abrite	shelter, sheltered
aiguille	needle
aimante, -e	magnetic
amer	landmark, beacon
anse	bay, creek
appontement	wharf, pier, quay
argile	clay
arnere port	outer port
atterrissage	making land, landfall
aval	downstream, seaward
avant port	outer port
azur	blue
B	
babord	port
baie	bay, gulf
balisage	beaconage
balise	beacon
banc	bank, sandbank
barre	bar
basse	shoal
basse mer	low water
bassin	basin, dock
bassin a flot	wet basin or dock
bassin d'echouage	tidal basin where vessels ground
bateau de sauvetag	lifeboat
blanc, -he	white
bleu, bleue	blue
bois	wood
bouche	mouth of a river
bouee	buoy
bouee a cloche	bell buoy
bouee a sifflet	whistle buoy
bouee lumineuse	light buoy
boussole	compass
brisants	breakers
brise-lames	breakwater
brouillard	fog, mist
brume	fog
C	
caboteur	coaster
cale de radoub	marine railway
canal	channel, canal
cap	cape, headland
champ-de-tir	firing range
chapelle	chapel
charbon	coal
chasse	a rapid discharge of water from reservior in order to clear out a channel
chateau	castle
chaussee	bank, causeway
chemin de fer	railroad
cheminee	chimney
chenal	channel
clocher	steeple
coffre	mooring buoy
colline	hill
compas	compass
coquilles	shells
cote	coast
courant	current, stream
courant de flot	flood tidal stream
courant de jusant	ebb tidal stream
crique	creek
crue	freshet or flood
D	
darse	basin
detroit	strait, narrow
digue	breakwater, mole
douane	customhouse
droit	right (side)
due d'albe	dolphin
E	
echelle	scale
echelle de maree	tide gauge
ecluse	lock of a canal or basin
ecueil	rock, breaker
eglise	church
encablure	cable's length
entree	entrance, mouth of a river
epave	wreck
epi	small jetty, groin
escarpe,-e	bluff
est	east
etale	slack
etang	lake
etiage	low water mark of a river
etier	a creek which can receive small vessels
F	
falaise	cliff
fanal	harbor lighthouse
feu	light
feu permanent	a light constantly burning and unwatched
fin, -e	fine
fleche	spire
fleuve	river, stream
flot	flood
foc	jib (sail)
fond	bottom
forme de radoub	drydock
fosse	ditch, a deep

FRENCH	English
G	
galets	shingle
gare	station
gauche	left (side)
golfe	gulf
goulet	narrow entrance
grand, -e	great
gravier	gravel
greve	sandy beach
gril de carenage	gridiron
gris	gray
gros	coarse
guet	house
H	
haut-fond	a shoal
haute mer	high water
havre	harbor
houle	swell
I	
ile	island, isle
ilot	islet
J	
jaune	yellow
jetee	jetty
jusant	ebb
L	
lac	lake
large	broad, wide
M	
madrague	tunny net
marais	swamp, marsh
maree	tide
maree descendante	falling tide
maree montante	rising tide
massif	main group of mountains
mat	mast
mer	sea
meridional, -e	southern
mole	mole, pier
molle	soft
mont, montagne	mountain
morne	hill
mortes eaux	neap tides
mouillage	anchorage
moulin	mill
musoir	pierhead

FRENCH	English
N	
niveau	level
noeud	knot
noir, noire	black
nord	north
nouveau, nouvel	new
O	
occidental, -e	western
onde	wave
oriental, -e	eastern
ouest	west
P	
passe	pass, fairway, channel
patente de sante	bill of health
pertuis	opening or strait
petit,-e	small
phare	lighthouse
pic	peak
pierre	stone
pignon	gable
pin	pine or fir tree
pilote	pilot
piton	peak
plage	shore, beach
plateau	tableland, or flat below water
pointe	point
pont	bridge, deck
port	port, harbor
presq'ile	peninsula
Q	
quai	quay, wharf
R	
rade	road, roadstead
rafale	squall
raz (bas breton)	a name given to a violent tidal stream in a narrow passage
recif	reef
redoute	fort
riviere	river
roche	rock
rocher	rock
rond	round
rouge	red
ruisseau	rivulet
S	
sable	sand
salines	salt water lagoons, salt works
seche	dry shelf, flat
septentrional, -e	northern
seuil	sill (of a dock)

FRENCH	English
sommet	summit
sud	south
T	
temps	time, weather
terre-plein	leveled ground, platform
tete	head
tour	tower
tourelle	small tower, turret
tribord	starboard
U	
usine	factory
V	
vase	mud
vent	wind
vert	green
vieux, vieil, vieille	old, ancient
ville	town
vive-eau	spring tide

Hebrew

HEBREW	English
A	
agam	lake
B	
be'er	well
bet	house
biza	marsh
D	
daram	south
daram-ma'arava	southwest
daram-mizrah	southeast
E	
even	stone
ez	tree
G	
gadol	great
giv'at	hill
H	
har	mountain
hazaz	gravel
hof	coast
hol	sand
huresha	wood (trees)
I	
i	island
ir	town, city
K	
kefar	village
kenesiyya	church
M	
ma'arava	west
ma'gana	anchorage
ma'yano	springs (of water)
mezah	jetty, mole
mezuda	fort
mifraz	bay
migdal	tower
migdallor	lighthouse
misgad	mosque
mizrah	east
N	
nahal	river, stream, watercourse
nemal	harbor, port
Q	
qatan	small
R	
rosh	cape, headland
Y	
ya'ar	forest
yam	sea
Z	
zafon	north
zafon-ma'arava	northwest
zafon-mizrah	northeast
zuqe	cliff

Iranian (Persian)

IRANIAN (PERSIAN)	English
A	
ab	river
—abad	inhabited place
abrah	watercourse, aqueduct
ala	height
anbar	tank
B	
badgir	tower
bahr	sea
band	dike, embankment, barrier
bandar	harbor, sheltered anchorage, landing place, bay
batlaq	marsh
berkeh	water tank
biaban	desert
bisim	radio
borj, burj	tower, fort
C	
cham	stream, gorge
chega, chiga	hill
D	
dagh	mountain, hill
dar	passage, channel
darband	gorge
darya	sea, river
dasht	desert, plain
deh	village
dehan	river mouth
dezh, diz	fort
E	
emamzadeh	mosque, tomb, shrine
—estan	place of
F	
fanus	lighthouse
forudgah	airfield
G	
gadik	pass
gel, gil	mud, clay
gharb	west
gharbi	western
H	
had, hadd	sandspit, boundary
howz	tank
I	
ishan	hill
J	
jabal	mountain, hill
janubi	southern
jazireh, jazirat	island, peninsula
K	
kad	shoal
kal	stream
kalat	castle on a mountain
kalleh	summit
kamar	mountain, hill
khak	dust, earth
khalij	gulf, bay, estuary
khaneh	house
kharabeh	ruins
khowr	arm of the sea, bay, inlet, channel, bight
kuh	hill, mountain peak
kut	fort, town
L	
lut	desert
M	
masjid	mosque
menar	tower, minaret, lighthouse
meydan tayyarat	airfield
minar	tower, minaret
N	
nahr	stream
P	
pol, pul	bridge
poshteh	hill, mountain
Q	
qabr	tomb
qaleh	castle, fort
qaryeh	village
qolleh	peak, hill, mountain
quileh	summit, hilltop
R	
ramlat	sandy area
ras	cape, point, head
reshteh	mountain range
rig	sand, gravel
rud	river
rudkhaneh	river
rusta	village
S	
sabz	green
sar	cape, summit
seyyed	chief
shah	king
shahr	city, town
shamal	north
sharq	east
shatt	large river
sheykh	chief of tribe
shib	slope
siah	black

IRANIAN (PERSIAN)	English
—stan	place of
sorkh	red
sur	wall, rampart
T	
tang	gorge, stream
tangeh	strait, isthmus
torbat, turba	tomb
Z	
zahir	conspicuous
zir	under, below

Pakistani

PAKISTANI — English

A

ab ..... spring
an ..... pass

B

bandar ..... harbor
bil ..... swamp, lake
bundar ..... mud dike, embankment

C

chah ..... spring, well
chakul ..... spring
char ..... island
chara ..... stream
chauki ..... customhouse

D

dar ..... stream
dasht ..... desert, plain
dhand ..... swamp
dhar ..... mountain range
dhor ..... stream
dimi ..... east
doab ..... plain between rivers

G—H

gang ..... stream
ghar ..... mountain, mountain range
goth ..... town, village
hamun ..... salt lake, salt waste
haor ..... lake
hor ..... swamp, fresh or brackish marsh

J

jabal ..... hill, mountain, island
jezirat ..... island

PAKISTANI — English

K

kalat ..... fort
kandao ..... pass
kaur ..... stream, river
khal ..... river
khand ..... pass
khor, khor ..... stream, river mouth, inlet
koh ..... mountain, mountain range
kot ..... fort
kotal ..... pass
kuh ..... hill, mountain

L

lak ..... pass
lora ..... stream

N—P

nadi ..... stream
nai ..... stream
nala ..... stream
narai ..... pass
nawar, nawar ..... lake
nullah ..... intermittent stream, gully
padi ..... west

R—S

ras ..... cape, point
rud ..... river, stream
sar ..... peak, summit

T

tangi ..... gorge
tar ..... well
taung ..... hill, mountain
toba ..... well
toi ..... stream

W—Z

wah ..... canal, stream
zarr ..... bay
ziarat ..... tomb, shrine

Somali

SOMALI	English
A	
aradi	peak
aro	peak
B	
biyogal	lake
bur yar	hill
but	mountain
byo galen	lake
D	
deked	wharf, harbor
doh	channel
dud	forest, mound, embankment
brise-lames	breakwater
G	
gashirad	island
gumbur	hillock
H	
har	mountain range
I	
illin	entrance
J	
jar	cliff
jori	bay
K	
kur	hill
kurum	hill
M	
masajid	mosque
R	
rasi	cape
rubad	marsh

Swahili

SWAHILI	English
B	
bandar, bender	port, harbor
D	
daw	dhow
F	
fungu	bank, shoal
G	
geneza	castle
J	
jiwe mwamba	rock
K	
kazika	half tide rock
khor	creek
kilima	hill
kisiwa	island
M	
mlango	channel, entrance
mlima	mountain
mnara	tower
mto	river
mwamba	shoal
N	
ngome	castle
P	
pwani	coast
R	
ras	cape, point
S	
shaka	islet
U	
uadi	river
upulu	channel
W	
wadi	river

How to use the Index—Gazetteer

Geographic names of navigational features are generally those used by the nation having sovereignty and are listed alphabetically. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity.

Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government. Positions are approximate and are intended merely as locators to facilitate reference to the charts.

To use as a Gazetteer note the position and Sector number of the feature and refer to the Chart Information diagram for the Sector. Plot the approximate position of the feature on this diagram and note the approximate chart number.

To use as an Index of features described in the text note the paragraph number at the right. To locate this feature on the best scale chart use the Gazetteer procedure above.

Index—Gazetteer

	Position °	'	°	'	Sec. Para.
A					
ABADAN	30	20 N	48	17 E	17.23
ABADAN AND BAVARDEH	30	19 N	48	19 E	17.24
ABD AL KURI	12	12 N	52	12 E	10.48
ABINGTON REEF	20	54 N	37	27 E	4.30
ABOU MAYA	11	33 N	42	41 E	10.8
ABU ALI CHANNEL	14	04 N	42	48 E	3.10
ABU DHABI	24	30 N	54	20 E	15.20
ABU EL COSU	15	18 N	40	34 E	5.21
ABU EL KIZAN	24	56 N	35	52 E	3.3
ABU FLUS	30	27 N	48	02 E	17.29
ABU GOSHA	20	57 N	37	13 E	4.29
ABU HULAYFAH	29	07 N	48	08 E	16.39
ABU MAHIR FORT	26	14 N	50	37 E	16.7
ABU MARINAH	18	26 N	38	31 E	4.51
ABU RAJI	16	52 N	42	16 E	7.39
ABU SAYEF OIL FIELD	26	59 N	50	31 E	16.14
ABU SHAWK	20	52 N	39	18 E	7.5
ABU SHUQAR ISLET	16	56 N	42	15 E	7.39
ABU ZABY	24	30 N	54	20 E	15.20
ABU ZANIMAH	29	02 N	33	07 E	2.24
ABULAD ISLETS	16	48 N	42	09 E	7.13
AD DAWHAH	25	17 N	51	32 E	15.48
AD DAWHAH LIGHT FLOAT	25	17 N	54	42 E	15.48
AD DISSAN	16	55 N	41	39 E	7.12
ADAN AS SUGHRA	12	45 N	44	52 E	8.6
ADEN HARBOR	12	47 N	44	57 E	8.9
ADEN PENINSULA	12	46 N	45	01 E	8.7
AHMADI LIGHT FLOAT	28	56 N	48	53 E	16.39
AHWAR	13	28 N	46	40 E	9.4
AIBAT ISLAND	11	30 N	43	28 E	10.20
AIN SUKHNA NORTH LIGHT FLOAT	29	35 N	32	33 E	1.5
AJMAN	25	25 N	55	26 E	15.12
AKBAR UQAYLI	16	37 N	41	53 E	7.15
AKHTAR	27	42 N	52	14 E	14.14
AL AHMADI	14	50 N	42	56 E	7.60
AL AQABAH	29	31 N	35	00 E	6.13
AL ASHKARAH	21	52 N	59	35 E	9.51
AL AZAIR	31	19 N	47	25 E	17.31
AL AZIZIYAH	26	11 N	50	13 E	16.10
AL BADI	15	30 N	42	30 E	7.48
AL BAGHLAH	16	57 N	41	21 E	7.11
AL BAHRAYN	26	05 N	50	33 E	16.4
AL BALAIM	28	34 N	33	15 E	2.28
AL BASRA OIL TERMINAL	29	41 N	48	49 E	17.17
AL BASRAH	30	30 N	47	49 E	17.29
AL BAWDI	15	30 N	42	30 E	7.48
AL BUNDUQ OIL FIELD	25	06 N	52	37 E	15.37
AL FAW	29	58 N	48	29 E	17.21
AL FUHAYHIL	29	05 N	48	09 E	16.39
AL GHARQANAH	28	07 N	34	27 E	6.7
AL GHAYDAH	16	12 N	52	16 E	9.22
AL HADD	26	14 N	50	39 E	16.5
AL HALLANIYAH	17	30 N	56	02 E	9.29
AL HAMRIYAH LPG TERMINAL	25	28 N	55	29 E	15.11
AL HASANI	24	58 N	37	03 E	6.24
AL HASIKIYAH	17	27 N	55	37 E	9.29
AL HAYRAH	25	23 N	55	24 E	15.12
AL HAZEM OIL TERMINAL	21	11 N	39	10 E	6.36
AL HUDAYDAH	14	50 N	42	56 E	7.60
AL IKHWAN	12	08 N	53	10 E	10.51
AL IRQAH	13	39 N	47	21 E	9.5
AL JAWHARI	16	29 N	52	27 E	9.22
AL JAZEERA PORT	25	43 N	55	47 E	15.7
AL JAZIRAH AL ALIYAH	25	24 N	51	34 E	15.47
AL JAZIRAH AS SAFILIYAH	25	21 N	51	35 E	15.47
AL JINNAH	27	22 N	49	19 E	16.21
AL JUBAYL	27	05 N	49	40 E	16.18
AL JUBAYLAH	17	30 N	56	20 E	9.30
AL KHABURAH	24	00 N	57	06 E	11.18
AL KHAIR OIL TERMINAL	19	35 N	37	15 E	4.42
AL KHAN	25	20 N	55	21 E	15.14
AL KHAST	30	20 N	48	16 E	17.25
AL KHAWKHAH	13	38 N	43	15 E	7.63
AL KHAWTAMAH	15	40 N	42	18 E	7.43
AL KHUBAR	26	17 N	50	13 E	16.10
AL KUMRAH	28	21 N	48	54 E	16.26
AL KUWAYT	29	23 N	47	58 E	16.43
AL LITH	20	09 N	40	16 E	7.6
AL LUHAYYAH	15	42 N	42	42 E	7.47
AL MANAMAH	26	14 N	50	35 E	16.7
AL MASIRAH	20	26 N	58	48 E	9.41
AL MINA AL JADIDAH	29	57 N	32	32 E	1.14
AL MUHARRAQ	26	15 N	50	37 E	16.5
AL MUKALLA	14	30 N	49	09 E	9.13
AL MUKHA	13	19 N	43	15 E	7.64
AL MURK	15	38 N	42	36 E	7.46
AL MUWAYLIH	27	40 N	35	29 E	6.17
AL QAD AL WUSTANI	20	02 N	40	08 E	7.24
AL QADIMAH	22	21 N	39	05 E	6.33
AL QAFFAY	24	35 N	51	43 E	15.41
AL QATIF	26	33 N	50	00 E	16.13
AL QIRAN	27	43 N	49	50 E	16.21
AL QUNFUDHAH	19	08 N	41	04 E	7.27
AL QUSAYR	26	06 N	34	17 E	4.12
AL RAYYAN	26	39 N	51	33 E	16.2
AL RAYYAN OIL FIELD	26	39 N	51	33 E	15.54
AL SHAHEEN OIL FIELD	26	35 N	52	00 E	15.53
AL SUWAYH	22	06 N	59	42 E	9.51
AL UQBAN	15	30 N	42	23 E	7.43
AL WAKRAH	25	10 N	51	37 E	15.46
AL WASILIYAH	30	18 N	40	18 E	17.24
AL-ADABIYAH	29	52 N	32	28 E	1.15
ALBAKR TERMINAL	29	41 N	48	49 E	17.17
AL-JAZIRAT AL-KHADRA	29	55 N	32	32 E	1.12
AMARIYEH	27	08 N	52	57 E	14.10
AN NABQIYAH	27	44 N	36	01 E	6.20
AN NUMAN	27	06 N	35	45 E	6.20
ANDEBA YE MIDIR ZERF CHAF	15	02 N	40	32 E	5.21
ANFILE BAY	14	45 N	40	50 E	5.22
ANGHAR	12	23 N	43	21 E	10.3
ANKHOR PEAK	10	32 N	46	11 E	10.27
ANSE AMBADU	11	36 N	43	01 E	10.12
ANSE REISSALE	11	46 N	42	56 E	10.6
AQIQ	18	14 N	38	14 E	4.61
AQRAB	18	26 N	38	31 E	4.51
AR RAMS	25	53 N	56	03 E	15.5

	Position °	'	°	'	Sec. Para
AR RAS AL ASWAD	21	22 N	39	08 E	7.4
ARAB SHOAL	11	40 N	43	40 E	10.3
ARAFALI	15	05 N	39	45 E	5.16
ARDESHIR OIL FIELD	29	15 N	49	35 E	17.9
AR-RAS AL ABYAD	23	32 N	38	33 E	6.31
AS SALAMAH	26	30 N	56	30 E	13.6
AS SALAMAH WA BANATUHA	26	30 N	56	32 E	13.6
AS SALIF	15	18 N	42	40 E	7.52
AS SAWDA	17	29 N	55	51 E	9.29
AS SAYHA	26	29 N	50	02 E	16.13
AS SIB	23	41 N	58	10 E	11.14
AS SUHAR	24	23 N	56	45 E	11.19
AS SUWAIQ	23	51 N	57	27 E	11.18
AS SUWAYQ	23	51 N	57	27 E	11.18
AS SUWAYS	29	58 N	32	33 E	1.14
ASALUYEH	27	29 N	52	36 E	14.11
ASH SHAM	26	02 N	56	05 E	15.2
ASH SHARIQAH	25	21 N	55	23 E	15.14
ASH SHAYKH MIRBAT	25	54 N	36	35 E	6.23
ASH SHIHR	14	45 N	49	34 E	9.14
ASH SHIHR OIL TERMINAL	14	42 N	49	29 E	9.15
ASH SHINAS	24	46 N	56	29 E	11.22
ASH SHUHAYR	14	39 N	49	22 E	9.14
ASH SHUWAYKH	29	21 N	47	56 E	16.43
ASHIQ BANK	16	25 N	42	38 E	7.41
ASSAB	13	00 N	42	45 E	5.33
ASSAB BAHIR SELATE	13	00 N	42	45 E	5.32
ASTOLA ISLAND	25	06 N	63	50 E	12.8
ATHAN SHOAL	29	44 N	48	35 E	16.46
ATLASSI SHOAL	29	54 N	48	21 E	16.46
AT-TUR BANK	28	15 N	33	23 E	2.29
ATWAQ	16	19 N	42	41 E	7.41
AVOCET ROCK	14	22 N	42	42 E	3.8
AWHAH	29	23 N	48	27 E	16.42
AWQAD	17	00 N	54	03 E	9.26
AYANAT	27	44 N	52	11 E	14.14
AYN SUKHNAH	29	35 N	32	22 E	2.5
AZ ZABBUT	24	08 N	52	26 E	15.40
AZ ZAHAIR	15	53 N	42	41 E	7.42
AZ ZAHRAN	26	18 N	50	08 E	16.10
AZ ZALLAQ	26	03 N	50	29 E	16.9
AZ ZARQA PETROLEUM PORT	25	01 N	53	00 E	15.32
AZ ZUKUM OIL FIELD	24	51 N	53	39 E	15.25

B

	Position °	'	°	'	Sec. Para
BAB AL MANDEB	12	31 N	43	30 E	5.36
BACAAD	11	21 N	49	27 E	10.38
BACCHUS BANK	12	14 N	52	26 E	10.50
BAHR EL QULZUM	29	54 N	32	32 E	1.12
BAHRAIN LIGHT FLOAT	26	33 N	51	04 E	16.6
BAIA D'ANFILE	14	45 N	40	50 E	5.22
BAIA DI ED	13	56 N	41	43 E	5.26
BAIA DI EDD	13	56 N	41	43 E	5.26
BAIA DI MELITA	15	15 N	39	49 E	5.16
BAIE BLONDEAU	11	34 N	42	36 E	10.10
BAIE DALWAKTEAK	11	29 N	43	16 E	10.17
BAIE DE L'ETOILE	11	34 N	42	39 E	10.9
BAIE DU LAC SALE	11	34 N	42	33 E	10.10
BAKLANG	25	17 N	60	13 E	12.17
BALANGESTAN	28	18 N	51	15 E	14.16
BALHAF	13	58 N	48	11 E	9.7
BANC ARABE	11	40 N	43	40 E	10.3
BANC DE LA CURIEUSE	11	39 N	43	11 E	10.4
BANC DES SALINES	11	36 N	43	07 E	10.15
BANC DU DANKALI	11	43 N	43	20 E	10.4
BANC DU EL HADJ	11	38 N	43	04 E	10.14
BANC DU L'ETOILE	11	38 N	43	05 E	10.14
BANC DU PINGOUIN	11	38 N	43	07 E	10.14
BANC MOIDUBIS KEBIR	11	34 N	43	17 E	10.18
BANC MOIDUBIS SEGHIR	11	32 N	43	17 E	10.18
BANC SOMALI	11	38 N	43	21 E	10.4
BANDAR ABBAS	27	09 N	56	12 E	13.31
BANDAR ABBAS NEW PORT	27	06 N	56	04 E	13.32
BANDAR AL KHAYRAN	23	31 N	58	44 E	11.8
BANDAR BARUM	14	20 N	48	57 E	9.12
BANDAR BURUM	14	20 N	48	57 E	9.12
BANDAR FAKA	12	33 N	54	29 E	10.59
BANDAR FUQUM	12	45 N	44	46 E	8.5
BANDAR GANZ	25	05 N	61	53 E	12.12
BANDAR HASIK	17	24 N	55	20 E	9.31
BANDAR HISN AL GHURAB	14	01 N	48	21 E	9.8
BANDAR IMRAN	12	45 N	44	35 E	8.5
BANDAR ITAB	15	18 N	51	33 E	9.18
BANDAR JAZIRAH	18	57 N	57	47 E	9.34
BANDAR JINJARI	17	00 N	55	00 E	9.28
BANDAR JISSAH	23	33 N	58	39 E	11.8
BANDAR MATUQ	24	33 N	51	28 E	15.42
BANDAR MURCAAYO	11	41 N	50	28 E	10.40
BANDAR NAWS	17	15 N	55	19 E	9.31
BANDAR NAY BAND	27	26 N	52	37 E	14.10
BANDAR RUWAYNI	14	32 N	49	10 E	9.14
BANDAR SHAYKH	12	44 N	44	53 E	8.6
BANDAR TAHERI OFFSHORE TERM.	27	39 N	52	21 E	14.13
BANDAR XARSHOW	11	10 N	47	24 E	10.33
BANDAR-E BISCOE	26	55 N	55	52 E	13.33
BANDAR-E DEYLAM	30	04 N	50	09 E	17.8
BANDAR-E HAMIRAN	26	41 N	55	06 E	13.37
BANDAR-E HASINEH	26	39 N	54	22 E	14.3
BANDAR-E HOMEYRAN	26	41 N	55	06 E	13.37
BANDARE KHOWR	29	34 N	50	31 E	17.6
BANDAR-E KONG	26	35 N	54	56 E	13.37
BANDAR-E KORZEH	26	45 N	53	58 E	14.4
BANDAR-E LENGEH	26	33 N	54	53 E	13.38
BANDAR-E MAHSHAHR	30	28 N	49	11 E	17.12
BANDAR-E MAQAM	26	58 N	53	29 E	14.9
BANDAR-E MOGHUYEH	26	36 N	54	30 E	14.3
BANDAR-E NAKHILU	26	54 N	53	30 E	14.9
BANDAR-E PARS	27	32 N	52	32 E	14.12
BANDAR-E RIG	29	29 N	50	38 E	17.6
BANDAR-E SHAHID BANOHAR	27	09 N	56	12 E	13.31
BANDAR-E SHAHID REJAIE	27	06 N	56	04 E	13.32
BANDAR-E SHIU	27	05 N	53	09 E	14.9
BANDAR-E SIRIK	26	29 N	57	05 E	13.29
BANDER CASSIM	11	17 N	49	11 E	10.37
BARASSOLI BAY	13	40 N	42	10 E	5.29
BARGAAL	11	17 N	51	04 E	10.46
BARIM	12	40 N	43	25 E	7.66
BARIM HARBOR	12	39 N	43	25 E	7.67
BARKA	23	42 N	57	54 E	11.16
BARKAN OIL-LOADING TERMINAL	29	44 N	50	10 E	17.7
BARR AL HIKMAN	20	30 N	58	24 E	9.40
BARRA MUSA SAGHIR	19	03 N	38	12 E	4.51
BARRAQAH	13	59 N	48	28 E	9.10
BARROW ROCKS	13	17 N	45	38 E	9.2
BARTON ISLET	18	23 N	41	16 E	7.33
BASHAYER OIL TERMINAL	19	24 N	37	19 E	4.43
BAY OF ASEB	13	00 N	42	45 E	5.32
BAYAD BIN JUWAYSIM	20	37 N	58	47 E	9.47
BEACON SHOAL	26	38 N	55	14 E	13.36
BEAUCHAMP REEF	24	50 N	66	35 E	12.2
BERAESOLI BAHIR SELATE	13	40 N	42	10 E	5.29
BERBERA	10	27 N	45	01 E	10.25
BEREEDA	11	52 N	51	03 E	10.42
BERIM	12	40 N	43	25 E	7.66
BERRI OIL FIELD	27	12 N	49	42 E	16.19
BEYZEH KHAN	27	28 N	52	39 E	14.10
BID KHUN	27	28 N	52	39 E	14.10
BINDAR DIBNI	12	41 N	54	10 E	10.57
BINDAR DI-IRISAL	12	31 N	54	29 E	10.61
BINDAR DI-SAB	12	35 N	53	22 E	10.53
BINDAR FIKHAH	12	33 N	54	29 E	10.59
BLACK HILL	13	46 N	46	59 E	9.1
BLACK PEAK	10	38 N	45	35 E	10.27
BOOSAASO	11	17 N	49	11 E	10.37
BOSANQUET SHOAL	13	05 N	42	48 E	5.31
BOSTANU	27	05 N	56	01 E	13.34
BOSTANU EAST BANK	27	04 N	56	05 E	13.34
BOSTANU SHIPYARD	27	03 N	55	58 E	13.32
BRANDON ROCK	20	45 N	37	12 E	4.34
BRICK KILN	30	08 N	48	23 E	17.22
BROOK SHOAL	18	42 N	41	05 E	7.31
BU OL KHEYR	28	32 N	51	05 E	14.17
BU RASHID	26	24 N	56	29 E	13.5
BU SANIA	24	24 N	52	36 E	15.29
BU SEYF	30	01 N	48	55 E	17.13
BUBIYAN	29	43 N	48	16 E	16.36
BUHEIRET EL-TIMSAH	30	35 N	32	18 E	1.9
BUKHA	26	09 N	56	09 E	13.13
BUKHA OIL FIELD	26	15 N	56	03 E	13.13
BULHAR	10	24 N	44	24 E	10.24
BULLAXAAR	10	24 N	44	24 E	10.24
BUR SAFAGA	26	44 N	33	56 E	4.10

	Position °	'	°	'	Sec. Para
BUR SAFAGAH	26	44 N	33	56 E	4.10
BUR SAID	31	16 N	32	18 E	1.9
BUR SAID HIGH LIGHT	31	16 N	32	19 E	1.9
BUR SUDAN	19	36 N	37	14 E	4.41
BUSHEHR	28	59 N	50	50 E	17.3
BUSTANU	27	06 N	53	02 E	14.9
C					
CABLE BANK	26	46 N	52	32 E	14.8
CALUULA	11	58 N	50	46 E	10.41
CANALE DI DISSEI	15	30 N	39	48 E	5.15
CANDALA	11	28 N	49	52 E	10.39
CANNON REEF	26	40 N	33	59 E	4.9
CAPE MONZE	24	50 N	66	40 E	12.2
CAPO ELEFANTE	11	56 N	50	38 E	10.41
CAPO RAHEITA	12	44 N	43	07 E	5.34
CASTLE HILL	25	06 N	61	23 E	12.13
CAVET	16	58 N	39	03 E	5.10
CEEBAAD	11	30 N	43	28 E	10.20
CEELAYU	11	14 N	48	54 E	10.36
CHABAHAR	25	17 N	60	38 E	12.16
CHAH BAHAR	25	17 N	60	38 E	12.16
CHAMPLAIN POINT	27	55 N	34	37 E	6.14
CHANDRA KUP	25	21 N	64	40 E	12.5
CHANDRAGUP	25	27 N	65	52 E	12.4
CHANNEL REEF	11	28 N	43	33 E	10.21
CHELLABI POINT	30	08 N	48	24 E	17.22
CHIRUYEH	26	43 N	53	45 E	14.4
CHISHOLM ROCK	19	54 N	40	15 E	7.24
CHOR ROCK	13	41 N	42	45 E	3.16
CHURMA ISLAND	24	52 N	66	36 E	12.3
CLARENCE STRAIT	26	58 N	55	44 E	13.33
CLEMATIS SHOAL	15	20 N	42	24 E	7.48
CLIVE ROCK	23	50 N	57	57 E	11.15
COLLINES DE GODORIA	12	14 N	43	23 E	10.3
CONRY ROCK	29	49 N	32	35 E	2.20
COOTE ROCK	26	17 N	55	24 E	13.21
CORAL BANK	12	17 N	51	56 E	10.50
CORNER REEF	18	53 N	37	36 E	4.56
CRAWFORD REEF	19	08 N	41	01 E	7.28
CREAGH SHOAL	24	42 N	52	44 E	15.33
CYRUS OIL TERMINAL	29	01 N	49	29 E	16.33
D					
DABA LIBAH	11	36 N	42	51 E	10.11
DABADIB	20	39 N	37	07 E	4.29
DAEDALUS REEF	24	56 N	35	52 E	3.3
DAGARITA	10	40 N	43	57 E	10.23
DAGHMAR	23	13 N	58	59 E	11.6
DAHARIZ	17	01 N	54	11 E	9.26
DAHAYIR ISLETS	15	53 N	42	41 E	7.42
DAHLAK BANK	16	00 N	40	00 E	5.6
DAHLIA SHOAL	15	23 N	42	29 E	7.48
DAHRET ABID ISLET	18	21 N	38	48 E	4.51
DAMAGHEH-YE BAHRGAN	30	00 N	49	34 E	17.8
DAMAGHEH-YE KUH	25	48 N	57	18 E	12.20
DAMAGHEH-YE PAS BANDAR	25	04 N	61	25 E	12.13
DAMAGHEH-YE RISHAHR	28	54 N	50	49 E	14.19
DAMAGHEH-YE SADICH	25	33 N	58	41 E	12.18
DAMAGHEH-YE ZARIN SAR	25	08 N	61	10 E	12.14
DAMAGHE-YE CHAH BAHAR	25	17 N	60	36 E	12.15
DAMAGHE-YE PUZM	25	17 N	60	28 E	12.15
DAMGHUT	16	34 N	52	50 E	9.22
DAMMAM PORT	26	30 N	50	12 E	16.12
DAMQAWT	16	34 N	52	50 E	9.22
DANAK	19	31 N	40	02 E	7.8
DAR KUH	26	39 N	55	24 E	13.36
DARK POINT OF SHUWAYMIYAH	17	54 N	55	45 E	9.32
DARRAKA	18	27 N	38	45 E	4.51
DARRAKAH	18	21 N	38	48 E	4.51
DASHT KAUR	25	10 N	61	37 E	12.13
DAUGLISH ROCK	19	42 N	40	31 E	7.24
DAWHAT AL ASLI	28	20 N	48	32 E	16.26
DAWHAT AL JABAJIB	24	59 N	55	02 E	15.18
DAWHAT AL WUSAYL	25	30 N	51	29 E	15.51
DAWHAT AS SUMAYRAH	24	18 N	51	33 E	15.42
DAWHAT ASH SHISAH	26	17 N	56	27 E	13.5
DAWHAT AZ ZULUM	26	00 N	50	05 E	16.10
DAWHAT DIBA	25	39 N	56	18 E	13.3
DAWHAT HAFFAH	25	44 N	56	18 E	13.3
DAWHAT MUSALLAMIYAH	27	25 N	49	14 E	16.21
DAWHAT QABAL	26	02 N	56	24 E	13.4
DAWN ASH SHAYKH	18	37 N	38	50 E	5.12
DAWN ASH SHAYKH	18	37 N	38	52 E	4.51
DAWWAH	20	33 N	58	48 E	9.46
DERRAKA	18	27 N	38	45 E	4.51
DEYYER	27	50 N	51	56 E	14.14
DHAABGO	11	08 N	48	03 E	10.34
DHAHRAN	26	18 N	50	08 E	16.10
DHANAB AL QIRSH	18	56 N	37	44 E	4.56
DHUBAB	12	56 N	43	25 E	7.65
DHUFAR PLAIN	17	02 N	54	10 E	9.24
DHURBO	11	37 N	50	20 E	10.39
DIDAMAR	26	29 N	56	32 E	13.6
DIMI ZARR	25	14 N	64	43 E	12.6
DIVES SHOAL	13	26 N	47	04 E	9.4
DJEBEL GOUDA	11	45 N	42	40 E	10.3
DJEBEL-JAN	12	15 N	43	23 E	10.2
DJIBOUTI, PORT DE	11	36 N	43	08 E	10.16
DOHA	25	17 N	51	32 E	15.48
DOHA HARBOR	29	23 N	47	48 E	16.44
DOHA POWER STATION	29	22 N	47	48 E	16.44
DOLPHIN COVE	15	08 N	39	50 E	5.16
DOM ESH SHEIKH	18	37 N	38	52 E	4.51
DORALEH	11	36 N	43	05 E	10.13
DORRA OILFIELD	28	48 N	49	00 E	16.32
DOUBLE ISLET	12	28 N	43	23 E	10.2
DOUBLE PEAK ISLAND	13	39 N	42	45 E	3.17
DUBA	27	34 N	35	32 E	6.18
DUBAI	25	16 N	55	18 E	15.15
DUBAYY	25	16 N	55	18 E	15.15
DUBBAYY	25	16 N	55	17 E	13.23
DUGAILA ISLANDS	16	17 N	42	28 E	7.17
DUHARAB	16	17 N	41	57 E	7.16
DUMERA ISLAND	12	43 N	43	09 E	5.35
DUNGUNAB BAY	21	03 N	37	12 E	4.29
DUQM	19	40 N	57	42 E	9.38
DURBO	11	37 N	50	20 E	10.39
DURDURI	11	19 N	48	36 E	10.35
DURRAH OIL FIELD	28	48 N	49	00 E	16.32
E					
EAST BAY	25	14 N	64	43 E	12.6
EAST JASK BAY	25	39 N	57	54 E	12.19
EAST MANDHAR ISLAND	16	51 N	41	58 E	7.13
EAST ZEIT TERMINAL	27	50 N	33	36 E	2.13
EILAT	29	33 N	34	57 E	6.12
EITWID	19	01 N	37	33 E	4.54
EL AKHAWEIN	26	19 N	34	51 E	3.2
EL HABIQ	28	52 N	34	39 E	6.8
EL QARNUS	28	59 N	34	41 E	6.10
EL TUR HARBOR	28	14 N	33	37 E	2.30
ELAT	29	33 N	34	57 E	6.12
ELATH	29	33 N	34	57 E	6.12
ELAYU	11	14 N	48	54 E	10.36
EL-BUHEIRA EL-MURRA EL-SUGHRA	34	15 N	32	33 E	1.10
ELEPHANT'S BACK	12	46 N	44	59 E	8.8
EL-GHARDAQA	27	13 N	33	51 E	4.4
EL-IKHWAN	26	19 N	34	51 E	3.2
EL-LSMAILIYA	30	35 N	32	17 E	1.10
ELPHINSTONE REEF	25	19 N	34	52 E	4.13
EMAM HASAN	29	52 N	50	15 E	17.6
EMAMZADEH	28	54 N	50	50 E	14.19
ENDEL MONTE	13	50 N	41	55 E	5.25
ENTERPRISE CHANNEL	19	48 N	40	33 E	7.21
ENTERPRISE PASSAGE	27	59 N	34	27 E	6.6
ENTRANCE	29	57 N	48	35 E	17.14
EUPHRATES PATCH	27	02 N	56	24 E	13.30
F					
FAIRWAY LIGHTED BUOY	24	39 N	54	14 E	15.20
FALAH OIL FIELD	25	36 N	54	12 E	15.24
FALSE RAS GHARIB	28	29 N	33	00 E	2.8
FANAKU	26	30 N	56	31 E	13.6
FANARA QUAY	30	17 N	32	21 E	1.10
FAO	29	58 N	48	29 E	17.21

	Position °	'	°	'	Sec. Para
FARA ISLANDS	19	20 N	40	50 E	7.26
FARASAN AL KABIR	16	42 N	42	00 E	7.12
FARRAJIN ISLAND	18	14 N	38	21 E	4.63
FASHT ABU SAAFAH	26	58 N	50	23 E	16.14
FASHT AL ARIF	24	57 N	51	40 E	15.44
FASHT AL AYK	29	45 N	48	30 E	16.46
FASHT AL BAZM	24	17 N	53	23 E	15.27
FASHT AL DIBAL	26	16 N	50	57 E	16.6
FASHT AL HADIBAH	29	24 N	47	57 E	16.43
FASHT AL JARIM	26	24 N	50	30 E	16.7
FASHT AL KASHSH	27	30 N	49	30 E	16.22
FASHT AL UDAYD	24	50 N	51	47 E	15.44
FASHT BULDANI	28	00 N	49	06 E	16.24
FASHT GHARIBAH	27	00 N	50	13 E	16.14
FASHT OL MOVA	30	04 N	49	10 E	17.9
FASHT UMM JANNAH	24	34 N	51	33 E	15.43
FATEH OIL TERMINAL	25	35 N	54	25 E	15.24
FATMA DESET	13	02 N	42	52 E	5.32
FAWN REEF	16	59 N	39	35 E	5.7
FAWN SHOAL	15	23 N	40	10 E	5.19
FELIX JONES PATCHES	28	04 N	33	36 E	2.29
FIERAMOSCA SHOAL	13	08 N	42	51 E	5.31
FIRAN	17	11 N	42	10 E	7.36
FORT DE SAGALLOU	11	40 N	42	44 E	10.7
FORUR SHOAL	26	26 N	54	32 E	14.2
FOUR PEAKED ROCK	17	29 N	56	20 E	9.30
FRAAS ELUG	11	56 N	50	38 E	10.41
FRANKEN POINT	27	14 N	33	51 E	4.3
FUJAYRAH HARBOR	25	10 N	56	20 E	11.23
FUNNEL HILL	18	32 N	56	29 E	9.33
FUNNEL HILL	27	52 N	51	36 E	14.14

G

GACANKA XAAFUUN WAG	10	36 N	51	20 E	10.47
GAHHA SHOAL	25	42 N	57	29 E	12.19
GALANGAREET	10	57 N	43	44 E	10.23
GANAVEH	29	33 N	50	31 E	17.6
GANNET BANK	16	59 N	39	13 E	5.7
GAP ISLET	26	30 N	56	31 E	13.6
GAVATER	25	09 N	61	30 E	12.13
GAZAIR GIFTUN	27	13 N	33	56 E	4.2
GAZAIR GIFTUN	27	14 N	33	55 E	4.1
GAZIRET SHAKIR	27	30 N	34	00 E	2.18
GEBEL ADUALI	12	57 N	42	26 E	5.25
GEBEL FAREYID	23	18 N	35	23 E	4.17
GEBEL GASH AMIR	22	16 N	36	14 E	4.21
GEBEL HAMATA	24	12 N	35	00 E	4.15
GEBEL HAMMAN FARUN	29	11 N	32	59 E	2.23
GEBEL TACHI	13	03 N	42	39 E	5.26
GEBEL USH	27	30 N	33	33 E	2.16
GENABA BAY	16	40 N	42	03 E	7.13
GEZIRET AL DIBIA	22	25 N	36	30 E	4.22
GEZIRET FIRON	29	28 N	34	52 E	6.11
GEZIRET GHANIM	27	46 N	33	36 E	2.16
GEZIRET MUREIR	23	11 N	35	44 E	4.20
GEZIRET ZABARGAD	23	37 N	36	12 E	4.17
GHADARAYA	14	00 N	48	23 E	9.9
GHARB MIYUN	18	30 N	38	51 E	4.51
GHASHA LIGHTED BUOY	24	26 N	52	35 E	15.29
GHASHSHAH	24	25 N	52	39 E	15.29
GHELJOGA	11	06 N	48	52 E	10.28
GHINNIBAD	12	47 N	43	05 E	5.34
GHOUBBET KHARAB	11	33 N	42	41 E	10.8
GHUBB DIQNAH	15	16 N	42	38 E	7.51
GHUBBAH DI-HADIBOH	12	40 N	54	01 E	10.55
GHUBBAH DI-NET	12	25 N	53	27 E	10.60
GHUBBAT AD DAWM	17	30 N	55	20 E	9.32
GHUBBAT AGABAH	25	55 N	56	24 E	13.3
GHUBBAT AL AYN	13	59 N	48	00 E	9.6
GHUBBAT AL FADAYIH	16	49 N	53	51 E	9.24
GHUBBAT AL GHAZIRAH	26	07 N	56	26 E	13.4
GHUBBAT AL HAYKAH	12	39 N	43	45 E	8.2
GHUBBAT AL MAHASIN	19	45 N	40	43 E	7.25
GHUBBAT AL QAMAR	16	20 N	53	00 E	9.20
GHUBBAT AL QINA	19	04 N	41	09 E	7.29
GHUBBAT AQABAH	25	55 N	56	24 E	13.3
GHUBBAT ASH SHABUS	26	10 N	56	28 E	13.4
GHUBBAT AZ ZAYT	27	47 N	33	31 E	2.14
GHUBBAT BINTAWT	20	22 N	58	02 E	9.39
GHUBBAT BINTUT	20	22 N	58	02 E	9.39
GHUBBAT HASHISH	20	30 N	58	10 E	9.40
GHUBBAT NAYT	12	25 N	53	27 E	10.60
GHUBBAT QALANSIYAH	12	41 N	53	28 E	10.54
GHUBBAT QURMAH	12	40 N	53	48 E	10.55
GHUBBAT QUWAYRAT	19	41 N	57	44 E	9.37
GHUBBAT SAILAN	12	55 N	45	13 E	9.2
GHUBBAT SAWQIRAH	18	35 N	57	16 E	9.33
GHUBBAT SAYLAN	12	55 N	45	13 E	9.2
GHUBBAT SHUAB	12	35 N	53	22 E	10.53
GHUBBET KALWEYN	11	09 N	47	42 E	10.33
GHURAB	16	10 N	42	40 E	7.41
GHURAB	19	30 N	40	53 E	7.26
GIFATIN ISLANDS	27	13 N	33	56 E	4.2
GIZAN	16	54 N	42	31 E	7.38
GOLFE DE TADJOURA	11	43 N	43	12 E	10.4
GORDON PATCHES	19	55 N	40	27 E	7.21
GORDON REEF	27	59 N	34	27 E	6.5
GRANDE LLE DU DIABLE	11	32 N	42	32 E	10.11
GREAT PEARL BANK	25	18 N	54	53 E	15.22
GREAT QUOIN	26	30 N	56	30 E	13.6
GREEN REEF	18	56 N	37	44 E	4.56
GRUBB'S NOTCH	26	50 N	55	00 E	13.37
GUBBET MUS NEFIT	15	41 N	40	00 E	5.20
GUBED BINNA	11	14 N	51	08 E	10.45
GUBED CANQOR	10	49 N	46	01 E	10.30
GUBED RUGGUUDA	10	47 N	46	36 E	10.30
GUH KUH	26	06 N	58	25 E	12.18
GUINNI KOMA	11	32 N	42	32 E	10.11
GULF OF AQABA	27	59 N	34	27 E	6.3
GUMRI	26	38 N	55	21 E	13.36
GURAN	26	43 N	55	37 E	13.35
GURANGATTI	25	36 N	65	15 E	12.5
GUTTA TELLA OUSAL	11	32 N	43	14 E	10.17
GUZUR ASHRAFI	27	47 N	33	42 E	2.17
GWADAR	25	08 N	62	18 E	12.11
GWADAR EAST BAY	25	10 N	62	23 E	12.10
GWADAR WEST BAY	25	10 N	62	16 E	12.12
GWARDAFUY	11	50 N	51	18 E	10.43
GWATAR BAY	25	05 N	61	35 E	12.13

H

HAB RIVER	24	55 N	66	40 E	12.2
HABL	16	10 N	42	48 E	7.41
HAD EL-MARAKIB	29	56 N	32	34 E	1.11
HADD SHABIB	26	14 N	50	14 E	16.10
HADIBU	12	39 N	54	01 E	10.56
HAFFAR CHANNEL	30	25 N	48	10 E	17.26
HALAT AL ALAQ	24	14 N	52	41 E	15.30
HALAT AL MUBARRAZ	24	28 N	53	22 E	15.26
HALAT DALMA	24	47 N	52	00 E	15.44
HAMAD	25	01 N	51	36 E	15.45
HAMI	14	47 N	49	49 E	9.16
HAMRAWEIN	26	15 N	34	12 E	4.11
HAMRIYAH	25	29 N	55	30 E	15.10
HANDELLAI	16	37 N	39	10 E	5.10
HARGIGO BAHIR SELATE	15	33 N	39	30 E	5.14
HARKAT	20	20 N	39	46 E	7.5
HARO RANGE	25	30 N	66	05 E	12.2
HARO RANGE	25	40 N	66	10 E	12.4
HARTAH POINT	30	22 N	48	11 E	17.25
HARTEH POINT	30	22 N	48	11 E	17.25
HASMET	17	44 N	38	44 E	5.4
HASR	18	09 N	41	29 E	7.35
HASSA LAGOON	22	59 N	35	42 E	4.20
HAYCOCK	21	19 N	37	02 E	4.28
HAYCOCK ISLAND	13	47 N	42	47 E	3.15
HAYCOCK ISLAND	15	10 N	42	07 E	3.6
HAYR ABU SUBAYTI	26	54 N	50	14 E	16.14
HAYR AL BUHAYM	26	52 N	50	10 E	16.14
HAYR AL WASIAH	26	48 N	50	12 E	16.14
HAYR AS KHUSHAYNAH	26	57 N	50	18 E	16.14
HAYR AS SAFRA	26	53 N	50	08 E	16.14
HAYR AS SARAH	26	32 N	50	24 E	16.8
HAYR KHAWRAH	26	40 N	50	18 E	16.14
HAYR SHUTAYA	26	35 N	50	48 E	16.6
HAYYOU	11	58 N	43	18 E	10.5
HEIS	10	53 N	46	54 E	10.31
HENDIJAN	30	15 N	49	43 E	17.9
HENGAM SOUND	26	41 N	55	54 E	13.17
HIBAR ISLAND	16	54 N	42	22 E	7.39

	Position °	'	°	'	Sec. Para
HILF	20	40 N	58	52 E	9.49
HILLANIYAH	13	59 N	48	19 E	9.8
HINDI GIDER	19	23 N	37	55 E	4.49
HOROD LE RHALE	12	27 N	43	26 E	10.2
HOWAKIL BAY	15	10 N	40	15 E	5.21
HULAYLAH OIL TERMINAL	25	59 N	55	24 E	15.4
HUMAYDAH	29	13 N	34	54 E	6.10
HURA BARGHA	24	17 N	56	33 E	11.20
HURGHADA	27	13 N	33	51 E	4.4
HYNDMAN REEFS	26	39 N	34	03 E	4.9

I

	Position °	'	°	'	Sec. Para
IBN ABBAS	15	23 N	42	48 E	7.53
IBN ABBAS ISLAND	18	13 N	38	19 E	4.63
ILE BAB	11	33 N	42	41 E	10.8
ILE BASSE	12	28 N	43	25 E	10.2
ILE DE L'EST	12	27 N	43	26 E	10.2
ILE DE L'OUEST	12	28 N	43	22 E	10.2
ILE DOUBLE	12	28 N	43	23 E	10.2
ILE MAIT	11	13 N	47	13 E	10.29
ILE MASKALI	11	43 N	43	09 E	10.4
ILE TOLKA	12	28 N	43	25 E	10.2
ILE WARAMOS	11	33 N	43	11 E	10.17
ILES MOUCHA	11	44 N	43	12 E	10.4
INNER BAR REACH	29	55 N	48	38 E	17.19
INNER CHANNEL	27	50 N	33	53 E	2.34
ISA BAY	15	05 N	42	43 E	7.57
ISLAND REEF	20	42 N	58	53 E	9.48
ISMAILIA	30	35 N	32	17 E	1.10
ISOLA ADBARA CHEBIR	16	00 N	39	50 E	5.9
ISOLA ASBAB	16	26 N	40	05 E	5.8
ISOLA CORDUMIAT	14	06 N	41	40 E	5.27
ISOLA DEHALAK DESET	15	37 N	39	58 E	5.19
ISOLA DELEMME	15	30 N	39	54 E	5.19
ISOLA DIFNEIN	16	37 N	39	20 E	5.7
ISOLA DISSEI	15	28 N	39	45 E	5.14
ISOLA DOUMEIRA	12	43 N	43	09 E	5.35
ISOLA DUR GAAM	15	47 N	39	45 E	5.9
ISOLA ENTAENTOR	16	20 N	40	14 E	5.8
ISOLA ENTA-IDELL	16	08 N	39	51 E	5.9
ISOLA ENTESILE	16	30 N	39	19 E	5.8
ISOLA FATUMAH	13	02 N	42	52 E	5.32
ISOLA HARAT	16	05 N	39	28 E	5.5
ISOLA HARAT	16	06 N	39	28 E	5.11
ISOLA HARMIL	16	31 N	40	10 E	5.7
ISOLA HUCALE	16	20 N	40	05 E	5.9
ISOLA ISRATU	16	20 N	39	53 E	5.9
ISOLA MIDIR	14	52 N	40	45 E	5.22
ISOLA OTA	15	30 N	39	49 E	5.15
ISOLA RACHMAT	13	40 N	42	13 E	5.29
ISOLA SANAH BOR	13	05 N	42	43 E	5.31
ISOLA SCIUMMA	15	32 N	40	00 E	5.5
ISOLA SEIL ADASI	16	20 N	39	56 E	5.9
ISOLA SHUMMA	15	32 N	40	00 E	5.19
ISOLE MOHABBACAH	13	24 N	42	36 E	3.19
ISOLOTTI ASSARKA	15	32 N	39	55 E	5.18
ISOLOTTI CURDUMIAT	14	04 N	41	39 E	5.27
ISOLOTTI KORDUMUIT	14	04 N	41	39 E	5.27
ISOLOTTO MADOTE	15	35 N	39	46 E	5.17
ITAB	15	20 N	51	28 E	9.18

J

	Position °	'	°	'	Sec. Para
JABAL ABU SHAWK	20	55 N	39	29 E	7.2
JABAL ABU TIYUR	25	44 N	34	17 E	4.13
JABAL AD DUKHAN	26	02 N	50	33 E	16.4
JABAL AL ASWADAIN	20	09 N	40	50 E	7.3
JABAL AL JABBARA	20	18 N	40	30 E	7.3
JABAL AL MUWAYLIH	27	37 N	35	45 E	6.1
JABAL AL MUZALQAM	12	45 N	44	52 E	8.6
JABAL ALI	25	02 N	55	07 E	15.16
JABAL AMUDAH	28	10 N	48	36 E	16.25
JABAL ASH SHABATAYN	20	18 N	57	43 E	9.39
JABAL ASH SHUBATAYN	20	18 N	57	43 E	9.39
JABAL AT TAIR	15	33 N	41	50 E	3.5
JABAL AZ ZANNAH	24	10 N	53	06 E	15.34
JABAL BANI SAD	20	37 N	40	38 E	7.2
JABAL BANI SALIM	19	53 N	40	58 E	7.3
JABAL BARAKAH	24	00 N	52	20 E	15.40
JABAL BARDAH	23	35 N	58	36 E	11.9
JABAL BISCOE	26	49 N	55	54 E	13.14
JABAL BUWAYRIDAH	24	18 N	52	38 E	15.28
JABAL DABBAH	27	50 N	35	45 E	6.1
JABAL DAUQA	19	50 N	41	18 E	7.2
JABAL DUBAAH	13	01 N	43	29 E	7.55
JABAL ERBA	20	50 N	36	52 E	4.29
JABAL GHURAYN	24	09 N	53	08 E	15.27
JABAL GUMADERIBA	20	05 N	36	43 E	4.36
JABAL HAB	25	20 N	65	27 E	12.4
JABAL HADARBA	22	01 N	36	40 E	4.22
JABAL HAJRA	20	14 N	41	12 E	7.2
JABAL HAMATAH	24	12 N	35	00 E	4.15
JABAL HILF	20	39 N	58	53 E	9.49
JABAL HINGLAJ	25	30 N	65	25 E	12.5
JABAL HORTON	26	59 N	56	06 E	13.34
JABAL JALAN	22	11 N	59	22 E	9.50
JABAL JIFAN	21	46 N	59	24 E	9.50
JABAL JINJARI	17	02 N	55	01 E	9.28
JABAL KHIRAN	20	22 N	58	41 E	9.45
JABAL KUIREH	12	21 N	53	32 E	10.60
JABAL MADRUB	20	33 N	58	53 E	9.41
JABAL MAHASIN	15	18 N	42	41 E	7.52
JABAL MAKANATI	13	53 N	47	40 E	9.5
JABAL MARSA	12	40 N	44	25 E	8.5
JABAL MUSA	13	40 N	43	25 E	7.63
JABAL NADESH	19	58 N	41	10 E	7.3
JABAL NAWS	17	14 N	55	17 E	9.28
JABAL NUSS	17	14 N	55	17 E	9.28
JABAL QAHM	18	01 N	41	36 E	7.33
JABAL RADWA	24	36 N	38	16 E	6.27
JABAL SADIYA	20	45 N	40	06 E	7.2
JABAL SAFAIQ	20	28 N	58	48 E	9.46
JABAL SAFFAN	22	24 N	59	49 E	9.52
JABAL SAMHAN	17	04 N	54	38 E	9.24
JABAL SAMRA	28	59 N	33	16 E	2.23
JABAL SHIFA	20	35 N	40	56 E	7.2
JABAL SIRBAL	28	39 N	33	39 E	2.27
JABAL SIRI	27	49 N	52	13 E	14.11
JABAL SIR-I-YALFAL	27	33 N	52	37 E	14.11
JABAL SIYH	21	54 N	59	24 E	9.50
JABAL SUBH	23	18 N	39	01 E	6.28
JABAL SUHAR	24	17 N	56	33 E	11.20
JABAL SUR	25	13 N	62	29 E	12.10
JABAL TULLAH	24	24 N	51	19 E	15.42
JABAL UMM KURHA	20	28 N	40	46 E	7.3
JABAL WASM	18	01 N	41	36 E	7.33
JABAL WIDAN	17	54 N	41	48 E	7.33
JABAL ZARAIN	25	12 N	63	30 E	12.9
JABAL ZUBAYR	15	04 N	42	10 E	3.7
JABAL ZUQAR	14	00 N	42	45 E	3.11
JABAL-I-MEHDI	25	13 N	62	25 E	12.10
JABALKHARAZ	12	44 N	44	09 E	8.1
JABBARA	19	26 N	40	04 E	7.9
JABRIN	27	52 N	51	26 E	14.16
JADAM	26	22 N	50	30 E	16.7
JADHIB	16	37 N	52	58 E	9.22
JADIB	16	37 N	52	58 E	9.22
JAFREH	28	58 N	50	49 E	17.3
JALAJIL	19	54 N	40	32 E	7.21
JANABAH BAY	16	40 N	42	03 E	7.13
JASK	25	38 N	57	46 E	12.19
JASK BAY	25	40 N	57	45 E	12.20
JAZA'IR AZ ZUBAYR	15	03 N	42	10 E	3.6
JAZAIR ABU ALI	14	05 N	42	49 E	3.9
JAZAIR FARASAN	16	45 N	42	00 E	7.12
JAZAIR KURIYA MURIYA	17	30 N	56	00 E	9.29
JAZAIR SUWADI	23	57 N	57	48 E	11.16
JAZAN	17	17 N	42	20 E	7.36
JAZIRAT ABU LATT	19	58 N	40	08 E	7.8
JAZIRAT ABU SAD	21	26 N	39	10 E	6.35
JAZIRAT ABU SHUSHAH	27	56 N	34	54 E	6.15
JAZIRAT AL ARABIYAH	27	47 N	50	11 E	16.20
JAZIRAT AL ASHAT	24	45 N	51	37 E	15.44
JAZIRAT AL BALJANIYAH	30	27 N	48	03 E	17.28
JAZIRAT AL BAWARID	15	43 N	42	33 E	7.46
JAZIRAT AL FAHL	23	41 N	58	30 E	11.14
JAZIRAT AL HANISH AL KABIR	13	44 N	42	44 E	3.14
JAZIRAT AL HANISH AS SAGHIR	13	52 N	42	47 E	3.13
JAZIRAT AL JUHUB	12	44 N	44	46 E	8.5
JAZIRAT AL JURAYD	27	12 N	49	57 E	16.17
JAZIRAT AL KHIDR	30	02 N	48	34 E	17.13

	Position °	'	°	'	Sec. Para
JAZIRAT AL MAQTA	28	10 N	48	38 E	16.25
JAZIRAT AL MUHARRAQ	26	16 N	50	37 E	16.11
JAZIRAT AL MUHARRAQ	26	16 N	50	38 E	16.4
JAZIRAT ANTUFISH	15	43 N	42	15 E	7.44
JAZIRAT AR RAKL	15	58 N	42	38 E	7.42
JAZIRAT ARZANAH	24	48 N	52	33 E	15.33
JAZIRAT AT TAWILAH	27	35 N	33	44 E	2.17
JAZIRAT AZ ZARQA	24	53 N	53	04 E	15.31
JAZIRAT AZIZ	12	44 N	44	43 E	8.5
JAZIRAT BUBIYAN	29	43 N	48	14 E	16.45
JAZIRAT BURQAN	27	53 N	35	04 E	6.15
JAZIRAT CHAHARDAM	25	18 N	65	38 E	12.4
JAZIRAT DALMA	24	30 N	52	19 E	15.38
JAZIRAT DARZAH	12	07 N	53	17 E	10.51
JAZIRAT DAS	25	09 N	52	52 E	15.35
JAZIRAT DAYYINAH	24	57 N	52	24 E	15.37
JAZIRAT DENAFA	12	45 N	45	00 E	8.8
JAZIRAT ER RIH	18	11 N	38	28 E	4.64
JAZIRAT FASHT	16	10 N	42	21 E	7.18
JAZIRAT FAYLAKAH	29	27 N	48	20 E	16.41
JAZIRAT GHASHA	24	25 N	52	39 E	15.29
JAZIRAT HALUL	25	41 N	52	25 E	15.49
JAZIRAT HAMAR	15	46 N	42	37 E	7.42
JAZIRAT HAMAR AN NAFUR	19	48 N	57	49 E	9.36
JAZIRAT HARQUS	27	56 N	49	41 E	16.20
JAZIRAT JABAL ZUQUR	14	00 N	42	45 E	3.11
JAZIRAT JANA	27	22 N	49	54 E	16.17
JAZIRAT KARAN	27	43 N	49	50 E	16.21
JAZIRAT KUBBAR	29	05 N	48	30 E	16.36
JAZIRAT MAGARSAM	20	48 N	37	16 E	4.31
JAZIRAT MARQA	18	13 N	41	19 E	7.34
JAZIRAT MASQAT	23	37 N	58	36 E	11.9
JAZIRAT MAYTEB	20	48 N	37	20 E	4.30
JAZIRAT MAYYUN	12	40 N	43	25 E	7.66
JAZIRAT MURAYKHAH	26	10 N	36	22 E	6.22
JAZIRAT MUSANDAM	26	23 N	56	32 E	13.5
JAZIRAT MUSHAYJIRAH	13	47 N	42	50 E	3.16
JAZIRAT QARNAYN	24	56 N	52	51 E	15.33
JAZIRAT SAFAJAH	26	45 N	33	59 E	4.7
JAZIRAT SALIL	12	44 N	44	55 E	8.7
JAZIRAT SAMHAH	12	09 N	53	03 E	10.51
JAZIRAT SANAFIR	27	56 N	34	43 E	6.15
JAZIRAT SHARAIWAH	25	02 N	52	14 E	15.38
JAZIRAT SHARQ	13	58 N	42	42 E	3.12
JAZIRAT SIRNAKAH	23	50 N	35	49 E	4.18
JAZIRAT TAWQ	16	19 N	42	41 E	7.41
JAZIRAT TIRAN	27	56 N	34	33 E	6.14
JAZIRAT TUNKHW	13	53 N	42	43 E	3.13
JAZIRAT UMM AL FAYYARIN	26	11 N	56	32 E	13.5
JAZIRAT UMM AL GHANAM	26	22 N	56	21 E	13.9
JAZIRAT UMM AL MARADIM	28	40 N	48	39 E	16.34
JAZIRAT WADI JIMAL	24	40 N	35	10 E	4.14
JAZIRAT WARBAH	30	00 N	48	04 E	16.45
JAZIRAT YABR	24	19 N	52	43 E	15.29
JAZIRAT YUBA	27	46 N	35	07 E	6.15
JAZIRAT ZARAKKUH	24	53 N	53	04 E	15.31
JAZIREH YE ABADAN	30	02 N	48	34 E	17.13
JAZIREH-YE ABU MUSA	25	53 N	55	02 E	13.22
JAZIREH-YE FARSI	27	59 N	50	10 E	16.20
JAZIREH-YE FORUR	26	17 N	54	31 E	13.24
JAZIREH-YE HENDORABI	26	40 N	53	38 E	14.6
JAZIREH-YE HENGAM	26	39 N	55	53 E	13.17
JAZIREH-YE HORMOZ	27	04 N	56	28 E	13.30
JAZIREH-YE KHARK	29	14 N	50	19 E	17.4
JAZIREH-YE KHARKU	29	19 N	50	21 E	17.4
JAZIREH-YE KISH	26	32 N	53	59 E	14.5
JAZIREH-YE LARAK	26	51 N	56	21 E	13.15
JAZIREH-YE LAVAN	26	48 N	53	18 E	14.6
JAZIREH-YE LAVAN OIL TERMINAL	26	48 N	53	25 E	14.7
JAZIREH-YE QESHM	26	44 N	55	40 E	13.14
JAZIREH-YE QEYS	26	32 N	53	59 E	14.5
JAZIREH-YE SHOTUR	26	48 N	53	25 E	14.6
JAZIREH-YE SIRRI	25	55 N	54	32 E	13.25
JAZIREH-YE TONB-E BOZORG	26	16 N	55	18 E	13.20
JAZIREH-YE TONB-E KUCHEK	26	14 N	55	09 E	13.22
JEBEL ALMIS	10	21 N	44	12 E	10.23
JEBEL ASOTRIBA	19	34 N	36	55 E	4.40
JEBEL BAWATI	19	50 N	36	50 E	4.37
JEBEL CHELHINDE	17	59 N	38	16 E	4.60
JEBEL DANGIYA	25	50 N	57	43 E	12.19
JEBEL KARAMBURRA	15	43 N	39	08 E	5.12
JEBEL MAIT	10	55 N	47	03 E	10.28
JEBEL MELANGWEIB	20	29 N	36	48 E	4.36
JEBEL ODA	20	20 N	36	38 E	4.36
JEBEL TAGDERA	18	14 N	38	07 E	4.59
JEBEL TAGWIAI	19	55 N	37	03 E	4.40
JEBEL WARATAB	19	07 N	37	11 E	4.44
JEDDAH	21	29 N	39	11 E	6.35
JEZAIR SEBA	12	28 N	43	25 E	10.2
JIBAL ASOTERIBA	21	52 N	36	30 E	4.22
JIDDAH	21	29 N	39	11 E	6.35
JINNABIYAT	19	46 N	40	35 E	7.22
JINNIYA	18	53 N	37	36 E	4.56
JIZAN	16	54 N	42	31 E	7.38
JU AYMAH LPG TERMINAL	26	52 N	50	03 E	16.16
JU AYMAH OIL TERMINAL	26	56 N	50	02 E	16.15
JUBAIL	27	05 N	49	40 E	16.18
JUZOR AD DAYMANIYAT	23	50 N	58	04 E	11.15
JUZUR AL HALLANIYAT	17	30 N	56	00 E	9.29
JUZUR ASHRAFI	27	47 N	33	42 E	2.17
JUZUR DUQAYLAH	16	17 N	42	28 E	7.17
JUZUR TALA	20	38 N	37	15 E	4.35

K

	Position °	'	°	'	Sec. Para
KABDA POINT	30	11 N	48	25 E	17.22
KABDA REACH	30	12 N	48	24 E	17.22
KAD EITWID ISLET	19	00 N	37	29 E	4.53
KAD EITWID REEFS	19	03 N	37	27 E	4.53
KAD FORUR	26	26 N	54	32 E	14.2
KAD HOGIT	18	49 N	37	43 E	4.56
KAD LAKFEH	29	01 N	50	49 E	17.3
KAIO	25	01 N	66	41 E	12.3
KAIRA	16	47 N	41	42 E	7.14
KAL FIRAWN	12	26 N	52	08 E	10.50
KALAT	26	43 N	53	54 E	14.4
KALAT	28	24 N	51	09 E	14.17
KAMARAN	15	20 N	42	35 E	7.48
KAMARAN	15	20 N	42	37 E	7.54
KAMARAN BAY	15	24 N	42	41 E	7.48
KANDELLAI	16	37 N	39	10 E	5.10
KANGAN	27	50 N	52	04 E	14.14
KANGAN GAS FIELD	27	58 N	51	15 E	14.16
KARAI JUMP	26	10 N	57	16 E	13.29
KARB	18	26 N	38	31 E	4.51
KARIN	10	50 N	45	47 E	10.26
KARKARA OIL FIELD	25	08 N	52	28 E	15.37
KARRI	28	25 N	51	09 E	14.17
KARUN BAR	30	23 N	48	11 E	17.26
KAS GHARIB	28	21 N	33	06 E	2.1
KASR UMM AS SAHAL	28	14 N	48	40 E	16.26
KATAGAR	25	04 N	61	48 E	12.12
KATHRIYAH	16	43 N	42	33 E	7.40
KATIF QURAYSH	14	14 N	43	04 E	7.62
KAVET	16	58 N	39	03 E	5.10
KAZIMAH, DAWHAT	29	25 N	47	48 E	16.44
KEARY REEF	19	18 N	37	50 E	4.50
KHAIRAN	23	31 N	58	44 E	11.8
KHAKI KUH	25	21 N	60	55 E	12.14
KHALIFA POINT	24	57 N	66	40 E	12.3
KHALIJ AL MASIRAH	19	39 N	58	17 E	9.35
KHALIJ AL QARAH	28	28 N	34	30 E	6.7
KHALIJ BANDAR SALIH	12	10 N	52	13 E	10.50
KHALIJ ISA	15	05 N	42	43 E	7.57
KHALIJ KAMARAN	15	24 N	42	41 E	7.48
KHALIJ KAMARAN	15	25 N	42	40 E	7.19
KHALIJ KHURIYA MURIYA	17	39 N	55	53 E	9.31
KHALIJ MASIRAH	19	39 N	58	17 E	9.35
KHALIJ-E CHAH BAHAR	25	20 N	60	32 E	12.15
KHALIJ-E DEYLAM	30	00 N	50	00 E	17.8
KHALIJ-E GAVATER	25	05 N	61	35 E	12.13
KHALIJ-E HALILEH	28	49 N	51	00 E	14.18
KHALIJ-E JASK	25	40 N	57	45 E	12.20
KHALIJ-E MOGHUYEH	26	35 N	54	32 E	14.2
KHALIJ-E NAY BAND	27	26 N	52	37 E	14.10
KHALIJ-E SHARQI-YE JASK	25	39 N	57	54 E	12.19
KHARG ISLAND	29	14 N	50	19 E	17.4
KHARG ISLAND OIL TERMINAL	29	14 N	50	20 E	17.5
KHATMAT MALAHAH	24	59 N	56	21 E	11.22
KHAWR ABD ALLAH	29	53 N	48	20 E	16.46
KHAWR AL AMAYA	29	35 N	48	55 E	17.15
KHAWR AL BAB	26	24 N	50	25 E	16.8
KHAWR AL BIGHAL	24	30 N	54	27 E	15.20

	Position °	'	°	'	Sec. Para
KHAWR AL BIRK	18	14 N	41	30 E	7.34
KHAWR AL GHALAFIQAH	14	32 N	43	00 E	7.62
KHAWR AL HAJAR	22	32 N	59	46 E	11.3
KHAWR AL JARAMAH	22	32 N	59	44 E	11.3
KHAWR AL KAFKA	29	35 N	48	53 E	17.15
KHAWR AL MAKRA	17	48 N	41	51 E	7.36
KHAWR AL MASIRAH	20	30 N	58	40 E	9.44
KHAWR AL MUFATTAH	28	39 N	48	23 E	16.29
KHAWR AL QULAYAH	26	13 N	50	38 E	16.6
KHAWR AL QUWAY	26	21 N	56	22 E	13.9
KHAWR AL UDAYD	24	36 N	51	20 E	15.43
KHAWR AL WAHLAH	16	44 N	42	40 E	7.39
KHAWR AL ZUBAIR	30	11 N	47	54 E	16.48
KHAWR AL ZUBAIR LPG TERMINAL	30	08 N	47	55 E	16.49
KHAWR AMIQ	18	28 N	41	26 E	7.33
KHAWR BUSTAN	26	19 N	56	22 E	13.9
KHAWR DASAH	24	16 N	52	37 E	15.28
KHAWR DUWAYHIN	24	20 N	51	20 E	15.42
KHAWR FAKKAN	25	21 N	56	23 E	11.24
KHAWR GHADIR	12	44 N	44	54 E	8.6
KHAWR GHANADAH	24	50 N	54	45 E	15.18
KHAWR GHUBB ALI	26	17 N	56	21 E	13.10
KHAWR HABALAYN	26	07 N	56	26 E	13.4
KHAWR HANAH	26	14 N	56	13 E	13.13
KHAWR ITWAD	17	34 N	42	08 E	7.36
KHAWR KALBA	25	02 N	56	22 E	11.22
KHAWR KATHIB	14	54 N	42	55 E	7.59
KHAWR KATIB	14	54 N	42	55 E	7.59
KHAWR KHASAB	26	12 N	56	15 E	13.12
KHAWR KUMZAR	26	20 N	56	25 E	13.6
KHAWR NUHUD	18	17 N	41	28 E	7.34
KHAWR SAJID	16	50 N	41	57 E	7.13
KHAWR SHETANA	30	02 N	48	03 E	16.45
KHAWR UM AL QAYWAIN	25	34 N	55	36 E	15.8
KHAYSAYH	15	37 N	52	15 E	9.19
KHAYYEN CANAL	30	27 N	48	07 E	17.28
KHOR AL ZUBAIR	30	11 N	47	54 E	16.48
KHOR AL ZUBAIR LPG	30	08 N	47	55 E	16.49
KHOR ANGAR	12	23 N	43	21 E	10.3
KHOR EL MAROB	21	50 N	36	50 E	4.25
KHOR KALMAT	25	20 N	64	04 E	12.7
KHOR MADUJI	11	07 N	43	35 E	10.22
KHOR NOWARAT	18	15 N	38	20 E	4.62
KHOR RABCH	25	27 N	59	15 E	12.18
KHOR RAPCH	25	27 N	59	15 E	12.18
KHORA ANCHORAGE	30	30 N	47	51 E	17.29
KHORRAMSHAHR	30	26 N	48	11 E	17.27
KHOWR-E BAHMANSHIR	30	08 N	48	34 E	17.13
KHOWR-E DEYREH	29	01 N	50	48 E	17.3
KHOWR-E GURAN	26	53 N	55	43 E	13.35
KHOWR-E JAFARI	26	44 N	55	34 E	13.36
KHOWR-E KHAN	27	48 N	51	39 E	14.15
KHOWR-E MINAB	27	08 N	56	49 E	13.29
KHOWR-E MUSA	30	05 N	49	14 E	17.9
KHOWR-E PUDAR	28	58 N	50	52 E	17.3
KHOWR-E QAZLAN	30	08 N	49	07 E	17.9
KHOWR-E SOLTANI	28	59 N	50	51 E	17.3
KHOWR-E VOSTA	30	23 N	48	55 E	17.10
KHOWR-E ZIARAT	28	10 N	51	19 E	14.16
KHUSROWABAD	30	10 N	48	25 E	17.22
KINASAT HILF	20	41 N	58	50 E	9.47
KING ABDUL AZIZ NAVAL BASE	26	59 N	49	42 E	16.18
KING ABDULLAH PORT	22	31 N	39	05 E	6.32
KING FAHD PORT	23	57 N	38	13 E	6.29
KISH KUH	26	41 N	55	32 E	13.18
KITF AL MANHALAH	14	49 N	42	55 E	7.61
KNOWR-E MAHSHAHR	30	27 N	49	10 E	17.10
KOBBEIN REEF	21	11 N	39	02 E	7.5
KONARAK	25	21 N	60	24 E	12.15
KORDUMUIT DESET	14	06 N	41	40 E	5.27
KOSSEIR	26	06 N	34	17 E	4.12
KUH-E BANG	29	45 N	50	22 E	17.6
KUH-E BOSTANEH	26	34 N	54	41 E	13.39
KUH-E DARANG	28	05 N	51	36 E	14.14
KUH-E GIKAN	25	50 N	57	43 E	12.19
KUH-E KHURMUJ	28	43 N	51	28 E	14.17
KUH-E MOBARAK	25	51 N	57	19 E	13.29
KUH-E NAMAKI	26	40 N	54	26 E	14.3
KUH-E PUSHT	25	06 N	61	23 E	12.13
KUH-E SEHTANJ	28	29 N	51	11 E	14.17
KUH-E ZANGIAK	26	12 N	57	33 E	13.29
KUHESTAK	26	47 N	57	02 E	13.29
KUMH	16	38 N	42	00 E	7.15
KUNAR SIAH	26	40 N	55	25 E	13.36
KURIA MARIA ISLANDS	17	30 N	56	00 E	9.29
KURIA MURIA BAY	17	39 N	55	53 E	9.31
KUSI	15	44 N	42	30 E	7.45
KUTAIBAN CANAL	30	41 N	47	46 E	17.30
KUTAMAH	15	40 N	42	18 E	7.43
KUTUMBUL	17	54 N	41	38 E	7.35
KUWAIT	29	23 N	47	58 E	16.43
KUWAIT HARBOR	29	25 N	47	55 E	16.41

L

LAASQORAY	11	10 N	48	12 E	10.34
LAFT	26	54 N	55	46 E	13.35
LAFT QADIM	26	57 N	55	46 E	13.34
LAKFEH SANDS	29	01 N	50	49 E	17.3
LANSDOWN SHOAL	15	31 N	42	36 E	7.48
LAZARETTO SHOAL	15	26 N	42	42 E	7.49
LILY SHOAL	14	51 N	42	45 E	7.59
LIMAH	25	56 N	56	26 E	13.3
LITTLE ADEN PENINSULA	12	45 N	44	52 E	8.6
LITTLE BITTER LAKE	34	15 S	32	33 E	1.10
LIVERPOOL POINT	12	38 N	43	25 E	7.67
LOBAN ISLAND	15	53 N	42	17 E	7.18
LOGAN REEF	19	22 N	37	50 E	4.50
LONG REEF	24	14 N	52	37 E	15.30
LUBWAN	15	53 N	42	17 E	7.18
LUGHAYE	10	40 N	43	57 E	10.23
LULU OIL FIELD	28	38 N	49	25 E	16.32
LUMAH ZERF CHAF	13	02 N	42	45 E	5.31
LUNKA CHANNEL	20	09 N	40	07 E	7.20

M

MADIQ GUBAL	27	40 N	34	00 E	2.35
MAFSUBBER ISLAND	18	14 N	40	53 E	7.10
MAGHABIYAH	18	15 N	40	45 E	7.9
MAIT	10	58 N	47	04 E	10.32
MAIT ISLAND	11	13 N	47	13 E	10.29
MAJIS	24	28 N	56	40 E	11.20
MAKHAILIF	24	07 N	56	57 E	11.18
MAKRAM	20	25 N	39	40 E	7.5
MALIHAH	25	00 N	37	07 E	6.26
MALIK FAHD CAUSEWAY	26	10 N	50	22 E	16.9
MANDAIRA REEF BEACON	28	56 N	48	46 E	16.30
MANGADAFA	11	36 N	43	04 E	10.12
MANNA HILLS	11	07 N	48	26 E	10.35
MARBAT	16	59 N	54	44 E	9.27
MARESCAUX ROCK	13	46 N	42	42 E	3.15
MARID	25	48 N	55	58 E	15.6
MARINER SHOAL	26	22 N	55	12 E	13.20
MARMAR	19	50 N	39	56 E	7.8
MARRAK	16	24 N	41	51 E	7.11
MARSA ABU ASAL	21	43 N	36	52 E	4.26
MARSA ABU DABBAB	25	20 N	34	45 E	4.13
MARSA ABU IMAMAH	21	30 N	36	57 E	4.27
MARSA ABU MAKHADIQ	27	02 N	33	54 E	4.6
MARSA AMID	19	25 N	37	18 E	4.47
MARSA ARUS	20	00 N	37	11 E	4.39
MARSA ATA	19	17 N	37	19 E	4.47
MARSA AWETIRI	20	10 N	37	12 E	4.38
MARSA BAQLAH	16	21 N	42	47 E	7.40
MARSA DAROR	19	50 N	37	16 E	4.39
MARSA FAJRAH	13	36 N	43	17 E	7.63
MARSA FIGGA	20	02 N	37	12 E	4.39
MARSA FIJAB	20	02 N	37	12 E	4.39
MARSA GWILAIB	21	46 N	36	52 E	4.26
MARSA HALAIB	22	15 N	36	38 E	4.22
MARSA HALAKA	21	25 N	37	00 E	4.28
MARSA IBRAHIM	20	09 N	40	13 E	7.6
MARSA KUWAI	19	13 N	37	20 E	4.47
MARSA KUWAYY	19	13 N	37	20 E	4.47
MARSA MAQDAM	18	43 N	37	42 E	4.57
MARSA MAROB	21	50 N	36	50 E	4.25
MARSA QISHRAN	20	15 N	39	55 E	7.6
MARSA SALAK AL KABIR	20	27 N	37	11 E	4.35
MARSA SHAB	22	50 N	35	46 E	4.20
MARSA SHAYKH IBRAHIM	18	53 N	37	25 E	4.55
MARSA SHAYKH SAD	18	50 N	37	25 E	4.55

	Position °	'	°	'	Sec. Para
MARSA SHIANAB	21	21 N	37	03 E	4.28
MARSA THELEMET	29	03 N	32	38 E	2.7
MARSA TUNDUBAH	25	00 N	34	55 E	4.14
MARSA TURUNBI	25	42 N	34	35 E	4.13
MARSA UMBEILA	22	00 N	36	50 E	4.25
MARSA WADI FERAN	28	45 N	33	13 E	2.26
MARSA ZUBAYDAH	26	52 N	36	01 E	6.20
MARSAT AL QADI YIHYA	27	55 N	33	54 E	2.33
MARSO SANEEKHAAL	11	01 N	47	07 E	10.32
MASAMIRIT	18	50 N	38	46 E	4.51
MASEN	26	44 N	56	00 E	13.16
MASHABIH	25	39 N	36	28 E	6.23
MASHEH	26	33 N	54	02 E	14.5
MASKAN	29	29 N	48	15 E	16.41
MASON REEFS	18	51 N	41	02 E	7.30
MASON SHOAL	25	37 N	57	42 E	12.20
MASQAT	23	37 N	58	37 E	11.11
MASSAUA	15	37 N	39	28 E	5.13
MASSAWA	15	37 N	39	28 E	5.13
MASSIF DE LA TABLE	12	15 N	43	23 E	10.2
MATRAHAYN	17	09 N	41	37 E	7.12
MAUNDRELL SHOAL	26	41 N	55	57 E	13.17
MAWSHIJ	13	43 N	43	16 E	7.63
MAYDH	11	13 N	47	13 E	10.33
MAYDI	16	19 N	42	49 E	7.40
MAYYUN HARBOR	12	39 N	43	25 E	7.67
MEERA REEFS	19	12 N	37	42 E	4.50
MELAHAT	16	02 N	39	15 E	5.11
MELITA BAY	15	15 N	39	49 E	5.16
MERLIN POINT	27	12 N	33	51 E	4.5
MERSA BERISSE	18	00 N	38	35 E	5.4
MERSA DUDO	13	52 N	41	54 E	5.28
MERSA GULBUB	16	25 N	39	11 E	5.11
MERSA ZARABA	27	50 N	34	00 E	2.33
MID ISLET	13	39 N	42	45 E	3.17
MIDDIT	17	47 N	38	36 E	5.2
MIDDLE REEF	26	43 N	34	00 E	4.8
MINA ABD ALLAH	29	01 N	48	10 E	16.37
MINA AL AHMADI	29	04 N	48	10 E	16.39
MINA AL FAHL	23	39 N	58	32 E	11.13
MINA AL MALIK FAHD	23	57 N	38	13 E	6.30
MINA AL QADIMAH	22	21 N	39	05 E	6.33
MINA ASH SHUAYBAH	29	02 N	48	10 E	16.38
MINA AZ ZAWR OIL TERMINAL	28	44 N	48	24 E	16.30
MINA BARANIS	23	55 N	35	30 E	4.19
MINA JABAL ALI	25	01 N	55	03 E	15.17
MINA KHALID	25	21 N	55	23 E	15.14
MINA QABUS	23	37 N	58	34 E	11.12
MINA RAYSUT	16	56 N	54	02 E	9.25
MINA SALMAN	26	12 N	50	38 E	16.6
MINA SAQR	25	59 N	56	03 E	15.3
MINA SAUD OIL TERMINAL	28	44 N	48	24 E	16.30
MITSIWA HARBOR	15	37 N	39	28 E	5.13
MO'AVIYEH, JAZIREH-YE	30	13 N	48	24 E	17.22
MONTE ABU LULU	12	38 N	42	54 E	5.26
MONTE GHEDEM	15	25 N	39	33 E	5.14
MONTE IM IUM	15	43 N	40	02 E	5.19
MONTE SELLA	13	00 N	42	42 E	5.33
MOQKEH	28	57 N	50	49 E	14.20
MORESBY SHOALS	28	10 N	33	27 E	2.29
MOSHEIKH ISLETS	11	26 N	43	22 E	10.18
MOUILLAGE DES BOUTRES	11	33 N	42	42 E	10.11
MOUNT STEWART	24	19 N	52	36 E	15.28
MUAYRID	25	48 N	55	58 E	15.6
MUBAREK OIL TERMINAL	25	49 N	55	00 E	13.23
MUBARRAZ OIL TERMINAL	24	26 N	53	31 E	15.26
MUDAYRAH REEF	28	56 N	48	46 E	16.34
MUGHARAQ PORT	24	11 N	51	34 E	15.39
MUHABBACA ISLANDS	13	24 N	42	36 E	3.19
MULAAX BEYLE	10	46 N	46	42 E	10.31
MUSAYNIAH	15	03 N	50	39 E	9.17
MUSCAT	23	37 N	58	37 E	11.11
MUSCAT ISLAND	23	37 N	58	36 E	11.9

N

	Position °	'	°	'	Sec. Para
NAHR AL ASHSHAR	30	31 N	47	51 E	17.29
NAHR AL KHAWRAH	30	30 N	47	51 E	17.29
NAHR AL KIBASI	30	33 N	47	49 E	17.29
NAHR KUTAYBAN	30	41 N	47	46 E	17.30
NAHUD ISLETS	19	33 N	40	47 E	7.26
NAITAH	24	18 N	51	48 E	15.41
NAJWA	26	33 N	50	15 E	16.8
NAJWAT GHASHA	24	25 N	52	36 E	15.29
NAKHILU	27	49 N	51	28 E	14.15
NAQA ABU ANFUS	24	55 N	51	33 E	15.44
NASIGA	10	41 N	46	30 E	10.30
NASR OIL FIELD	25	19 N	53	28 E	15.36
NAVAL BOAT HARBOR	29	15 N	50	20 E	17.5
NEWPORT ROCK	29	53 N	32	33 E	1.12
NIQYAN QATAR	24	53 N	51	32 E	15.44
NISHTUN	15	49 N	52	12 E	9.21
NOKRA DESET	15	43 N	39	56 E	5.20
NORTH AYN SUKHNAH PORT	29	39 N	32	22 E	2.4
NORTH HOUSE BEACON	30	04 N	48	27 E	17.22
NORTH JUMNA SHOAL	19	27 N	37	44 E	4.50
NORTH QAYSUM	27	42 N	33	41 E	2.17
NORTH ROUND ISLAND	13	43 N	42	47 E	3.16
NORTH TOWARTIT REEF	19	32 N	37	20 E	4.45
NUWEIBA EL MUZEIMA	28	58 N	34	39 E	6.9

O

	Position °	'	°	'	Sec. Para
OBOCK	11	58 N	43	18 E	10.5
ODIN POINT	30	59 N	47	29 E	17.31
ODIN SHOAL	18	26 N	41	25 E	7.33
OMM OL KARAM	27	50 N	51	33 E	14.15
ORESTE POINT	16	22 N	42	46 E	7.40
ORMARA	25	12 N	64	38 E	12.5
OSMAN DIGNA	19	07 N	37	21 E	4.48
OWEN REEF	19	21 N	38	03 E	4.50

P

	Position °	'	°	'	Sec. Para
PAB MOUNTAINS	25	10 N	66	40 E	12.2
PADI ZARR	25	14 N	64	32 E	12.7
PALINURUS SHOAL	14	55 N	50	41 E	9.17
PANORAMA REEF	26	45 N	34	05 E	4.8
PAPS	27	05 N	53	12 E	14.9
PAR KUH	25	56 N	57	40 E	12.19
PARKIN ROCK	13	38 N	42	49 E	3.16
PASNI	25	15 N	63	28 E	12.9
PEAKY ISLAND	13	47 N	42	45 E	3.15
PEARLY GATES	16	23 N	41	50 E	7.38
PERIM	12	40 N	43	25 E	7.66
PERIM HARBOR	12	39 N	43	25 E	7.67
PESHWA	19	23 N	38	00 E	4.50
PETITE ILE DU DIABLE	11	32 N	42	32 E	10.11
PETTIS REEF	18	48 N	41	09 E	7.31
PHILADELPHUS POINT	23	56 N	35	36 E	4.18
PHOR RIVER	25	25 N	65	55 E	12.4
PICCO AGUZZO	13	35 N	41	49 E	5.25
PILE BEACON	29	50 N	48	43 E	17.18
PIN ROCK	13	38 N	42	42 E	3.18
POINTE NOIRE	11	36 N	43	04 E	10.12
PORT BERENICE	23	55 N	35	30 E	4.19
PORT OF HODEIDAH	14	50 N	42	56 E	7.60
PORT OF JABAL AZ ZANNAH	24	12 N	52	42 E	15.34
PORT OF JABAL DHANNA/RUWAYS	24	12 N	52	42 E	15.34
PORT OF SUEZ	29	58 N	32	33 E	1.14
PORT QABOOS	23	37 N	58	34 E	11.12
PORT SAFAGA	26	44 N	33	56 E	4.10
PORT SAID	31	16 N	32	18 E	1.9
PORT SMYTH	15	32 N	39	59 E	5.19
PORT SUDAN	19	36 N	37	14 E	4.41
PORT TANAQIB	27	46 N	48	53 E	16.24
PORT TEWFIK	29	56 N	32	34 E	1.14
POWELL ROCK	20	42 N	37	15 E	4.34
POYNDER SHOAL	27	55 N	33	44 E	2.32
PRICE SHOAL	24	17 N	52	42 E	15.29
PROSERPINE ROCK	25	57 N	57	16 E	13.29
PUNTA SHAB SHAKHS	14	39 N	41	07 E	5.23
PUZM, RAS-E	25	20 N	60	17 E	12.17
PYRAMID PEAK	10	43 N	47	00 E	10.27

Q

	Position °	'	°	'	Sec. Para
QAD EITWID	19	03 N	37	27 E	4.53
QADD HUMAYS	20	17 N	39	29 E	7.5
QADIMBAL ISLET	17	54 N	41	38 E	7.35

	Position °	'	°	'	Sec. Para
QAF	23	42 N	58	05 E	11.14
QALALI	26	16 N	52	39 E	16.5
QALHAT	22	42 N	59	23 E	11.4
QALHAT LNG TERMINAL	22	41 N	59	24 E	11.5
QANAT ABU ALI	14	04 N	42	48 E	3.10
QANDALA	11	28 N	49	52 E	10.39
QARN AL WADA	17	02 N	42	30 E	7.37
QARN ZAQIQ	24	19 N	52	36 E	15.28
QARNAYN	24	56 N	52	51 E	15.33
QARZAWIT	17	36 N	56	09 E	9.30
QASSAR DIWAN	26	11 N	50	40 E	16.4
QASSAR KHUSAYFAH	26	17 N	50	37 E	16.4
QATIF OIL FIELD	26	53 N	49	58 E	16.17
QAYSUM ASH SHAMALIYAH	27	42 N	33	41 E	2.17
QESHM	26	44 N	55	40 E	13.14
QESHM	26	58 N	56	17 E	13.14
QESHM BUNKERING ANCH.	26	33 N	55	45 E	13.14
QISHN	15	26 N	51	41 E	9.19
QISHN BAY	15	25 N	51	47 E	9.18
QIT AT ABU TALIH	29	24 N	47	48 E	16.44
QITA AL AUWAL	19	50 N	40	32 E	7.22
QITA TERONBO	18	39 N	37	48 E	4.60
QITAEL BANNA	20	41 N	37	24 E	4.33
QITAT URAYFIJAN	29	00 N	48	16 E	16.36
QOLLEH-E SIRI	27	33 N	52	37 E	14.11
QOOR FELUG	11	51 N	50	32 E	10.40
QOORIGA HURDIYO	10	30 N	51	10 E	10.47
QOOW	11	15 N	48	59 E	10.36
QUEI REEFS	26	24 N	34	11 E	4.5
QUEI REEFS	26	24 N	34	12 E	4.11
QUMMAH	16	38 N	42	00 E	7.15
QUOIN HILL	11	00 N	47	23 E	10.28
QUOIN HILL	18	08 N	38	16 E	4.59
QUOIN ISLET	15	12 N	42	04 E	3.6
QURAYN ATUT	28	09 N	33	52 E	2.31
QURAYYAT	23	16 N	58	55 E	11.6
QURMA	27	50 N	51	33 E	14.15
QUSAYIR	14	56 N	50	17 E	9.17
QUSEIR	26	06 N	34	17 E	4.12
QUSUR	15	44 N	42	30 E	7.45
R					
RAAS AXMAR	11	20 N	49	18 E	10.38
RAAS BINNA	11	08 N	51	11 E	10.46
RAAS CALUULA	11	59 N	50	47 E	10.42
RAAS CASEYR	11	50 N	51	18 E	10.43
RAAS DHOFTILLE	11	19 N	48	32 E	10.35
RAAS GACAAN	11	17 N	48	22 E	10.35
RAAS GORAGII	11	29 N	49	42 E	10.39
RAAS JILBO	10	56 N	46	59 E	10.32
RAAS KHANSIIR	10	52 N	45	49 E	10.27
RAAS LAAS MACAAN	11	12 N	48	14 E	10.35
RAAS MASKAN	11	12 N	43	33 E	10.22
RAAS SHANNAQIIF	11	41 N	51	15 E	10.45
RAAS XAAFUUN	10	27 N	51	24 E	10.47
RAAS XATIB	11	03 N	47	08 E	10.32
RAAS XEMRA	10	48 N	45	43 E	10.26
RAAS XUMBAYS	11	07 N	47	16 E	10.32
RABIGH	22	44 N	38	59 E	6.31
RAIDA	15	01 N	50	26 E	9.17
RAKA SHOALS	20	00 N	40	25 E	7.20
RAMBLER KNOLL	12	32 N	44	10 E	8.1
RAQQAT OL ALI	29	02 N	50	46 E	17.3
RAS ABID	18	09 N	38	30 E	4.65
RAS ABU ABBUD	25	17 N	51	34 E	15.47
RAS ABU AL MUSHUT	25	16 N	51	37 E	15.47
RAS ABU ALI	27	18 N	49	42 E	16.20
RAS ABU BAKR	28	33 N	32	56 E	2.7
RAS ABU DARAG	29	23 N	32	34 E	2.6
RAS ABU DARAH	22	41 N	36	06 E	4.21
RAS ABU DAWUD	23	19 N	58	55 E	11.7
RAS ABU MADD	24	50 N	37	08 E	6.27
RAS ABU QALUM	28	38 N	34	34 E	6.8
RAS ABU QIYAMAH	12	44 N	44	54 E	8.6
RAS ABU QUMAYYIS	24	34 N	51	30 E	15.43
RAS ABU RASAS	20	10 N	58	39 E	9.42
RAS ABU RUDEIS	28	54 N	33	10 E	2.25
RAS ABU SAWMAH	26	51 N	34	00 E	4.7
RAS ABU SHAGRAB	21	04 N	37	19 E	4.29
RAS ABU SOMA	26	51 N	34	00 E	4.7
RAS ABU YABIS	18	07 N	38	32 E	4.65
RAS ABU ZENIMA	29	03 N	33	06 E	2.23
RAS AD DAWABI	15	34 N	42	42 E	7.48
RAS AD DAWHAH	29	23 N	47	51 E	16.44
RAS AD DIL	19	06 N	57	50 E	9.37
RAS ADABIYA	29	52 N	32	30 E	2.2
RAS AJUZAH	29	23 N	48	00 E	16.42
RAS AKAB	15	14 N	51	19 E	9.18
RAS AL ABYAD	23	39 N	58	30 E	11.14
RAS AL ARAH	12	36 N	43	55 E	8.3
RAS AL ARD	29	21 N	48	06 E	16.40
RAS AL BAB	26	22 N	56	30 E	13.5
RAS AL BARR	25	48 N	50	34 E	16.9
RAS AL BARSHAH	29	35 N	48	13 E	16.45
RAS AL BATIN	24	27 N	54	19 E	15.20
RAS AL BAYAD	15	15 N	42	36 E	7.51
RAS AL BISHAH	29	55 N	48	34 E	17.14
RAS AL GHAF	23	42 N	58	05 E	11.14
RAS AL GHAR	26	52 N	49	52 E	16.17
RAS AL GHAR	26	54 N	49	52 E	16.17
RAS AL HADD	22	33 N	59	48 E	11.2
RAS AL HAMRA	23	39 N	58	29 E	11.14
RAS AL HASAN	19	38 N	40	46 E	7.25
RAS AL HAZRA	24	23 N	51	36 E	15.41
RAS AL HUMARA	19	48 N	40	37 E	7.23
RAS AL JARI	26	13 N	56	11 E	13.13
RAS AL JAZIRAH	20	34 N	58	57 E	9.43
RAS AL JIRRI	26	13 N	56	11 E	13.13
RAS AL JUAYMAH	26	49 N	50	00 E	16.15
RAS AL JUFAYR	26	12 N	50	36 E	16.6
RAS AL JUNAYZ	22	27 N	59	50 E	9.52
RAS AL KANADA	23	37 N	58	37 E	11.9
RAS AL KEEDAN	21	00 N	37	15 E	4.29
RAS AL KHAFJI	28	24 N	48	32 E	16.26
RAS AL KHAFJI OIL TERMINAL	28	26 N	48	35 E	16.27
RAS AL KHAIMAH	25	59 N	56	03 E	15.3
RAS AL KHAIMAH MARITIME CITY	25	57 N	56	03 E	15.5
RAS AL KHAIR PORT	27	32 N	49	11 E	16.23
RAS AL KHAYMAH	25	48 N	55	57 E	15.6
RAS AL KHAYRAN	23	31 N	58	45 E	11.8
RAS AL KUH	25	48 N	57	18 E	12.20
RAS AL LAKK	24	24 N	37	25 E	6.29
RAS AL LLAQ	25	01 N	51	38 E	15.44
RAS AL MADRAKAH	19	00 N	57	51 E	9.34
RAS AL MATBAKH	25	40 N	51	34 E	15.51
RAS AL MISHAB	28	07 N	48	38 E	16.25
RAS AL MISHAB	28	11 N	48	38 E	16.26
RAS AL MISHAYU	20	21 N	58	27 E	9.45
RAS AL QAYD	29	46 N	48	22 E	16.46
RAS AL QILA	24	09 N	52	59 E	15.28
RAS AL QULAYAH	26	51 N	49	57 E	16.17
RAS AL QULAYAH	28	53 N	48	17 E	16.35
RAS AL UDAYD	24	38 N	51	24 E	15.43
RAS AL YA	20	31 N	58	59 E	9.43
RAS AL YAHI	29	24 N	48	28 E	16.42
RAS AL-ADAHIYAH	29	52 N	32	30 E	2.2
RAS AMAS	15	32 N	39	35 E	5.14
RAS AN NISAH	25	17 N	51	33 E	15.47
RAS ANDADDA	15	02 N	40	32 E	5.21
RAS ANFILE	14	43 N	40	53 E	5.23
RAS ANRATA	14	42 N	40	57 E	5.23
RAS AR KHABBAH	22	14 N	59	48 E	9.51
RAS AR RUAYS	20	59 N	58	50 E	9.50
RAS AR RUAYS	22	11 N	59	46 E	9.51
RAS AR RUJAYMAH	14	08 N	48	48 E	9.11
RAS AR RUWAYS	20	59 N	58	50 E	9.50
RAS ARB	15	48 N	39	26 E	5.11
RAS ARB	15	48 N	39	27 E	5.12
RAS AS SILA	24	03 N	51	47 E	15.40
RAS ASH SHAJAR	22	56 N	59	12 E	11.6
RAS ASH SHAM	26	04 N	56	05 E	15.2
RAS ASH SHUWAYMIYAH	17	54 N	55	54 E	9.32
RAS ASIR	11	50 N	51	18 E	10.43
RAS ASIS	18	25 N	38	09 E	4.61
RAS AT TANAQIB	27	50 N	48	53 E	16.24
RAS AT TARFA	17	02 N	42	20 E	7.37
RAS AZ ZAFARANAH	29	07 N	32	40 E	2.6
RAS AZ ZAWR	27	25 N	49	19 E	16.21
RAS AZ ZAWR	28	45 N	48	24 E	16.29
RAS BA GHASWAH	14	50 N	50	05 E	9.16
RAS BAB AL MANDEB	12	41 N	43	28 E	8.2
RAS BADRAN OIL TERMINAL	28	57 N	33	10 E	2.25

	Position °	'	°	'	Sec. Para
RAS BANAS	23	54 N	35	47 E	4.16
RAS BARD HALQ	28	29 N	48	30 E	16.28
RAS BARIDI	24	16 N	37	33 E	6.30
RAS BARIDI	24	17 N	37	30 E	6.27
RAS BARUM	14	19 N	49	00 E	9.11
RAS BASHIN	26	12 N	56	29 E	13.4
RAS BASOL	25	17 N	64	14 E	12.7
RAS BIR	11	59 N	43	22 E	10.3
RAS BRIS	25	08 N	61	10 E	12.14
RAS BUGENI	13	46 N	42	02 E	5.28
RAS BULUL	15	42 N	39	57 E	5.20
RAS BURUM	14	19 N	49	00 E	9.11
RAS CADCADDE	11	20 N	48	40 E	10.36
RAS CALVEYN	10	31 N	45	06 E	10.26
RAS DARMA	13	14 N	42	33 E	5.30
RAS DAWARIN	26	15 N	50	34 E	16.7
RAS DAYDUM	12	35 N	54	25 E	10.59
RAS DEHAMMERI	12	40 N	54	12 E	10.57
RAS DEHANEBA	12	54 N	43	01 E	5.34
RAS DEHANEBE MIDIR ZERF CHAF	12	54 N	43	01 E	5.34
RAS DIB	28	02 N	33	25 E	2.11
RAS DIBA	25	36 N	56	22 E	11.25
RAS DILLAH	26	08 N	56	29 E	13.4
RAS DIRRA	24	53 N	34	58 E	4.14
RAS DOGON	15	38 N	39	29 E	5.12
RAS DUAN	11	49 N	43	03 E	10.6
RAS DUKHAN	25	31 N	50	47 E	16.3
RAS DUMERA YE MIDIR ZERF CHAF	12	43 N	43	08 E	5.34
RAS EIRO	11	36 N	42	51 E	10.11
RAS FALANJ	12	29 N	54	27 E	10.61
RAS FARTAK	15	39 N	52	16 E	9.20
RAS FINTAS	15	48 N	52	14 E	9.20
RAS GANZ	25	01 N	61	50 E	12.12
RAS GHARIB	28	21 N	33	06 E	2.9
RAS GURMAL	14	58 N	40	38 E	5.21
RAS HADARBA	22	04 N	36	52 E	4.24
RAS HAFFAH	25	44 N	56	19 E	13.3
RAS HALI	18	36 N	41	17 E	7.32
RAS HARAM	15	34 N	42	42 E	7.48
RAS HASIK	17	23 N	55	20 E	9.31
RAS HATIBAH	22	00 N	38	58 E	6.34
RAS HERBE	15	00 N	40	34 E	5.21
RAS HILF	20	41 N	58	52 E	9.48
RAS HIMAR	16	54 N	53	57 E	9.24
RAS HULAF	12	42 N	54	06 E	10.56
RAS HUNKURAB	24	33 N	35	09 E	4.15
RAS HUNKURAH	24	33 N	35	09 E	4.15
RAS HUSAYSAH	14	12 N	48	52 E	9.11
RAS ILLAUE	11	59 N	50	47 E	10.29
RAS ISA MARINE TERMINAL	15	07 N	42	36 E	7.56
RAS ISTAHI	18	16 N	38	19 E	4.63
RAS ITAB	15	17 N	51	26 E	9.18
RAS JADDI	25	14 N	63	30 E	12.9
RAS JAMSAH	27	38 N	33	35 E	2.16
RAS JAZRIYAL	22	17 N	36	35 E	4.22
RAS JIBSH	21	28 N	59	22 E	9.50
RAS JIWANI	25	01 N	61	43 E	12.13
RAS JUWAYFARIYA	24	20 N	51	24 E	15.42
RAS KACHARI	25	22 N	65	44 E	12.4
RAS KALBAN	20	21 N	58	38 E	9.44
RAS KAMAITI	25	06 N	62	16 E	12.12
RAS KANISAH	27	56 N	33	53 E	2.32
RAS KAPPAR	25	13 N	62	47 E	12.10
RAS KARKUMA	25	53 N	36	38 E	6.22
RAS KASAR	18	02 N	38	35 E	5.2
RAS KAWAKIB	26	22 N	50	13 E	16.10
RAS KAYDAH	20	17 N	58	47 E	9.42
RAS KEKENIB	15	00 N	42	53 E	7.58
RAS KHARABAH	26	09 N	36	28 E	6.22
RAS KHAYSAH	26	15 N	56	30 E	13.5
RAS KHAYSAT AN NAWM	12	14 N	52	04 E	10.49
RAS KHUDEIRIYAH	24	16 N	52	36 E	15.28
RAS KHUSAYFAH SPIT	26	19 N	50	35 E	16.7
RAS KHUSHAYYIM	18	57 N	57	45 E	9.34
RAS KORALI	11	35 N	42	48 E	10.11
RAS KUBA	16	20 N	39	12 E	5.11
RAS LAFFAN	25	55 N	51	35 E	15.52
RAS LOMA ZERF CHAF	13	02 N	42	45 E	5.31
RAS MAHAR	24	43 N	37	11 E	6.28
RAS MAKASIR	18	57 N	41	07 E	7.29
RAS MAKATO	15	15 N	39	43 E	5.16
RAS MALAB	29	12 N	32	55 E	2.22

	Position °	'	°	'	Sec. Para
RAS MALAN	25	19 N	65	12 E	12.5
RAS MALCATTO	15	15 N	39	43 E	5.16
RAS MALCOMMA	15	37 N	39	58 E	5.19
RAS MANREC	14	54 N	40	43 E	5.21
RAS MARBAT	16	59 N	54	43 E	9.27
RAS MARSA	15	00 N	42	53 E	7.58
RAS MARSHAQ	12	45 N	45	03 E	8.8
RAS MASQAT	23	38 N	58	37 E	11.11
RAS MATARIMAH	29	27 N	32	43 E	2.22
RAS MILN	27	00 N	56	10 E	13.33
RAS MILNE	27	00 N	56	10 E	13.33
RAS MINJI	17	53 N	56	05 E	9.33
RAS MISALLA	29	49 N	32	36 E	2.20
RAS MISALLA	29	49 N	32	37 E	1.12
RAS MUARI	24	50 N	66	40 E	12.2
RAS MUHAJJARAH	29	49 N	32	29 E	2.3
RAS MUHAMMAD	27	44 N	34	15 E	6.2
RAS MUKHALIF	26	22 N	56	25 E	13.6
RAS MUKHAYLIF	26	22 N	56	25 E	13.6
RAS MUNTAJIB	17	39 N	55	24 E	9.32
RAS MUSAGHIB	16	15 N	42	47 E	7.41
RAS MUSHAYRIB	24	18 N	51	45 E	15.40
RAS MUTAYKAF	17	54 N	55	54 E	9.32
RAS MUTAYNAH	13	59 N	43	08 E	7.62
RAS NAQRAIR	19	58 N	57	49 E	9.39
RAS NAWS	17	15 N	55	19 E	9.28
RAS NUH	25	05 N	62	24 E	12.10
RAS NUSS	17	15 N	55	19 E	9.28
RAS OL MARG	29	02 N	50	48 E	17.3
RAS ORMARA	25	10 N	64	36 E	12.5
RAS OSH SHATT	29	06 N	50	42 E	17.3
RAS OSH SHAVARI	26	39 N	55	04 E	13.37
RAS OSH SHIRE	26	01 N	57	12 E	13.29
RAS PISHUKAN	25	06 N	62	05 E	12.12
RAS PUZM	25	17 N	60	28 E	12.15
RAS QABBAH	26	19 N	56	21 E	13.9
RAS QABR AL HINDI	26	19 N	56	31 E	13.5
RAS QARWAW	17	53 N	56	18 E	9.33
RAS QATANAN	12	21 N	53	32 E	10.60
RAS QOSBEH	30	00 N	48	28 E	17.22
RAS QUDUFAH	20	41 N	58	55 E	9.43
RAS QUMAYLAH	21	59 N	59	40 E	9.51
RAS QURQUMAH	25	53 N	36	38 E	6.22
RAS QUSAYIR	14	54 N	50	17 E	9.16
RAS RADRESSA	12	35 N	54	29 E	10.59
RAS RAKAN	26	11 N	51	13 E	16.2
RAS RAWAHIMI	28	44 N	32	50 E	2.7
RAS RAYSUT	16	55 N	54	00 E	9.24
RAS REHAYTO	12	44 N	43	07 E	5.34
RAS SADAT TERMINAL	29	46 N	32	27 E	2.3
RAS SAFFANIYAH	27	59 N	48	47 E	16.24
RAS SAFWAN	13	49 N	47	36 E	9.5
RAS SAJR	16	45 N	53	35 E	9.24
RAS SAKANNI	25	13 N	64	26 E	12.7
RAS SALIB	26	22 N	56	22 E	13.9
RAS SAMADAIY	25	01 N	34	55 E	4.14
RAS SARAB	24	16 N	51	47 E	15.40
RAS SARKAN	26	05 N	56	28 E	13.4
RAS SAWQIRAH	18	08 N	56	36 E	9.33
RAS SAYLAN	13	03 N	45	24 E	9.2
RAS SAYYAH	25	37 N	50	16 E	16.2
RAS SCERAIER	13	46 N	42	02 E	5.28
RAS SHAKAL	18	18 N	38	17 E	4.61
RAS SHAKHS	14	38 N	41	12 E	5.23
RAS SHAKHS	26	13 N	56	17 E	13.11
RAS SHAMAL BANDAR	25	15 N	63	06 E	12.9
RAS SHARATIB	28	40 N	33	12 E	2.27
RAS SHARBITHAT	17	53 N	56	21 E	9.33
RAS SHARH	22	34 N	59	39 E	11.4
RAS SHARHIN	12	29 N	54	27 E	10.61
RAS SHAYKH MASUD	26	15 N	56	13 E	13.13
RAS SHEKUB	18	18 N	38	17 E	4.61
RAS SHUAB	12	32 N	53	18 E	10.53
RAS SHUKHAYR	28	08 N	33	17 E	2.10
RAS SHUKHEIR	28	08 N	33	17 E	2.10
RAS SHURAYTAH	26	23 N	56	23 E	13.8
RAS SIYAN	12	29 N	43	19 E	10.2
RAS SIYYAN	12	29 N	43	19 E	10.2
RAS SUDR	29	36 N	32	41 E	2.20
RAS SUMAYRAH	24	19 N	51	26 E	15.42
RAS SUWADI	23	57 N	57	48 E	11.16
RAS SUWAYHIL AS SAGHIR	28	53 N	34	49 E	6.10

	Position °	'	°	'	Sec. Para
RAS TANNURAH	26	38 N	50	10 E	16.14
RAS TERMA	13	14 N	42	33 E	5.24
RAS UMM HASAH	26	06 N	51	21 E	15.55
RAS UMM SID	27	51 N	34	19 E	6.4
RAS UQAB	15	14 N	51	19 E	9.18
RAS USHAYRIA	25	59 N	51	00 E	16.3
RAS USHAYRIQ	29	23 N	47	51 E	16.44
RAS UWAYQIL	25	09 N	50	34 E	16.3
RAS ZABID	14	07 N	43	05 E	7.62
RAS ZAFARANAT	20	30 N	58	58 E	9.42
RAS ZURAWEN	26	15 N	50	34 E	16.7
RAS-E BASA IDU	26	39 N	55	16 E	13.36
RAS-E BOSTANEH	26	30 N	54	37 E	13.39
RAS-E DASTAKAN	26	32 N	55	18 E	13.19
RAS-E HALILEH	28	49 N	50	58 E	14.18
RAS-E JAGIN	25	34 N	58	07 E	12.18
RAS-E JASK	25	38 N	57	46 E	12.19
RAS-E KARUN	30	26 N	48	11 E	17.26
RAS-E KHAN	28	00 N	51	20 E	14.16
RAS-E KHARGU	26	41 N	55	56 E	13.16
RAS-E KHARYU	26	31 N	54	51 E	13.38
RAS-E KUVEH	26	57 N	55	59 E	13.34
RAS-E LAFT	26	57 N	55	44 E	13.33
RAS-E MAKI	25	23 N	59	35 E	12.17
RAS-E MASHEH	26	41 N	55	53 E	13.17
RAS-E MEYDANI	25	23 N	59	05 E	12.18
RAS-E NAKHILU	26	51 N	53	29 E	14.4
RAS-E NAY BAND	27	23 N	52	35 E	14.10
RAS-E PAHEL	26	59 N	55	45 E	13.33
RAS-E RASHEDI	25	20 N	60	12 E	12.17
RAS-E SADIJ	25	33 N	58	41 E	12.18
RAS-E SALAKH	26	41 N	55	45 E	13.18
RAS-E SHIR	26	01 N	57	12 E	13.29
RAS-E TAHUNEH	26	42 N	54	12 E	14.3
RAS-E TANB	29	56 N	50	09 E	17.6
RAS-E TANG	25	20 N	59	52 E	12.17
RAS-E TARKUN	26	38 N	55	36 E	13.18
RAWAYA ANCHORAGE	20	54 N	37	12 E	4.32
RAYDAT AL ABD AL WADUD	15	01 N	50	26 E	9.17
RECIF D'AMBOULI	11	37 N	43	07 E	10.15
RECIF DU CHENAL	11	28 N	43	33 E	10.21
RECIF DU METEORE	11	39 N	43	06 E	10.14
RENNIE SHOALS	27	03 N	50	42 E	16.14
RHIY DI MONI	12	32 N	54	29 E	10.59
RHIY DI-BIDOH	12	43 N	53	30 E	10.54
RHIY DI-HAMADEROH	12	38 N	54	13 E	10.58
RHIY DI-HAWLAF	12	42 N	54	06 E	10.56
RHIY DI-IRISAL	12	35 N	54	29 E	10.59
RHIY DI-MOMI	12	32 N	54	29 E	10.59
RHIY DI-QATANHIN	12	21 N	53	32 E	10.60
RING REEF	18	58 N	40	22 E	7.9
RISHAH	15	10 N	42	34 E	7.50
ROCHER MOULHELE	12	31 N	43	18 E	5.35
ROCKY ISLANDS	13	38 N	42	47 E	3.17
RODRIGUES SHOAL	25	11 N	64	45 E	12.6
ROOKA BUOY	29	49 N	48	48 E	17.20
ROSTAMI	28	35 N	51	05 E	14.17
RU US AL JIBAL	25	50 N	56	10 E	13.2
RUBETINO BOY	13	00 N	42	53 E	5.32
RUD-E GABRIG	25	36 N	58	20 E	12.18
RUD-E ZOHREH	30	04 N	49	30 E	17.9
RUDKHANEH-YE GAZ	26	26 N	57	04 E	13.29
RUDUM TERMINAL	13	59 N	47	55 E	9.7
RUGGUNDA	10	42 N	46	37 E	10.30
RUMAYN	16	24 N	42	14 E	7.17
RUMMAN	26	14 N	50	35 E	16.7
RUQQ AL JAZIR	18	34 N	56	51 E	9.33
RUQQ QURAYNAYN	25	05 N	51	50 E	15.46

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SAACADA DIIN	11	26 N	43	28 E	10.20
SAATH AR RASBOOT OIL FIELD	25	19 N	53	28 E	15.35
SABA ISLAND	15	05 N	42	09 E	3.6
SABA WANAK	10	33 N	44	07 E	10.23
SABAWANAAG	10	33 N	44	07 E	10.23
SABUNIYAH	12	38 N	53	09 E	10.53
SADDLE HILL	23	35 N	58	36 E	11.9
SAFIQ	19	32 N	40	44 E	7.26
SAID BIN SULTAN NAVAL BASE	23	50 N	57	32 E	11.17
SAJID	16	52 N	41	52 E	7.13
SALALAH	17	01 N	54	06 E	9.26
SALEEF	15	18 N	42	40 E	7.52
SALEH OIL FIELD	26	10 N	55	42 E	13.21
SALIF	15	18 N	42	40 E	7.52
SALIMIYAH	29	21 N	48	04 E	16.42
SAMADRISAT	17	36 N	38	49 E	5.4
SAN CARLOS BANKS	19	29 N	58	00 E	9.36
SANA ISLAND	16	07 N	42	15 E	7.18
SANAHOR DESET	13	05 N	42	43 E	5.31
SANAK ISLET	19	43 N	40	38 E	7.23
SANDY ISLET	22	15 N	36	40 E	4.23
SANDY ISLET	27	43 N	33	43 E	2.17
SANGANEB REEF	19	45 N	37	27 E	4.40
SAQR	15	33 N	51	58 E	9.19
SAR-E CHIRUYEH	26	42 N	53	44 E	14.4
SAS AN NAKHL	24	27 N	54	29 E	15.21
SASAN OIL FIELD	25	32 N	53	09 E	15.36
SASSAN OIL FIELD	25	32 N	53	09 E	15.36
SATAH OIL FIELD	24	55 N	52	33 E	15.37
SATAN'S GAP	30	27 N	48	06 E	17.28
SAUNDERS REEF	17	11 N	39	24 E	5.7
SAWAKIN HARBOR	19	08 N	37	21 E	4.48
SAYHAT	26	29 N	50	02 E	16.13
SAYHUT	15	13 N	51	14 E	9.18
SAYLAC	11	22 N	43	28 E	10.19
SAYR ABD	17	01 N	42	02 E	7.13
SCENAT	17	31 N	38	46 E	5.2
SCOGLI HAYCOCKS	13	32 N	42	37 E	3.19
SCOUT ANCHORAGE	23	26 N	35	34 E	4.20
SEA GULL SHOAL	11	24 N	43	37 E	10.19
SEA ISLAND TERMINAL	29	07 N	48	17 E	16.39
SECCA DUO BRACCIA	16	37 N	39	29 E	5.8
SECCA FAWN	16	59 N	39	35 E	5.7
SECCA MUGIUNIA	15	36 N	39	43 E	5.17
SECCA MUHAMMAD	15	09 N	40	44 E	5.21
SECCHE SCILLA	13	01 N	43	03 E	5.31
SEIL ABADHO	17	01 N	42	02 E	7.13
SEIL SELAFI	13	41 N	42	08 E	5.29
SELLA MONTE	13	00 N	42	42 E	5.33
SENACCA	11	04 N	47	12 E	10.32
SENO DE DOLPHIN	15	08 N	39	50 E	5.16
SHAAB ATA	19	16 N	37	23 E	4.46
SHAAB DAMATH	19	14 N	37	20 E	4.47
SHAAB RUMI	19	56 N	37	25 E	4.38
SHAB ABU RIMATHI	27	08 N	33	57 E	4.3
SHAB ALI	27	50 N	33	50 E	2.33
SHAB EL ERG	27	24 N	33	52 E	2.19
SHAB EL ERQ	27	24 N	33	52 E	2.19
SHAB JIBNA	19	27 N	37	44 E	4.50
SHAB MADUJI	11	03 N	43	40 E	10.23
SHAB MUBYAT	19	12 N	37	42 E	4.50
SHAB MUKOWARAT	27	47 N	33	41 E	2.17
SHAB SHEIKH YAKAB	11	18 N	43	34 E	10.22
SHAB UL SHUBUK	18	49 N	37	33 E	4.56
SHAB UMM USH	27	35 N	33	53 E	2.18
SHABA SUADI	20	10 N	37	17 E	4.38
SHAC SIIGAALE	11	24 N	43	37 E	10.19
SHACAABI SHIIKH YACQUUB	11	18 N	43	34 E	10.22
SHADWAN CHANNEL	27	35 N	33	50 E	2.19
SHADWAN ISLAND	27	30 N	34	00 E	2.18
SHAG ROCK	27	46 N	33	53 E	2.34
SHAH ABU OL SHAH	30	11 N	50	05 E	17.8
SHAH ALLUM SHOAL	26	25 N	52	30 E	14.8
SHAHIN KUH	27	07 N	53	05 E	14.10
SHAIRAH	17	04 N	42	16 E	7.36
SHAKER ISLAND	18	52 N	40	25 E	7.9
SHAKER ISLAND	27	30 N	34	00 E	2.18
SHAKIR	18	52 N	40	25 E	7.9
SHAMBAYA ISLAND	20	52 N	37	24 E	4.30
SHAMM PENINSULA	26	15 N	56	20 E	13.11
SHARBAIN	18	44 N	40	37 E	7.9
SHARJAH	25	21 N	55	23 E	15.14
SHARJAH OFFSHORE OIL TERMINAL	25	35 N	55	24 E	15.13
SHARM AL HARR	27	37 N	35	31 E	6.17
SHARM AL KHAWR	24	17 N	37	40 E	6.29
SHARM AL SHAIKH	27	51 N	34	17 E	6.4
SHARM AL WAJH	26	13 N	36	27 E	6.21
SHARM ANTAR	26	36 N	36	13 E	6.21
SHARM ASH SHAYKH	27	51 N	34	17 E	6.4
SHARM DUMAYGH	26	39 N	36	11 E	6.21
SHARM HABBAN	26	06 N	36	32 E	6.22
SHARM HASI	24	39 N	37	18 E	6.29

	Position °	'	°	'	Sec. Para
SHARM HASY	24	39 N	37	18 E	6.29
SHARM JAZZAH	26	57 N	35	57 E	6.20
SHARM JUBBAH	27	33 N	35	33 E	6.17
SHARM LULI	24	37 N	35	09 E	4.15
SHARM YAHAR	27	37 N	35	31 E	6.17
SHARM YANBU	24	10 N	37	55 E	6.29
SHARMAH	27	56 N	35	15 E	6.16
SHARMAH BAY	14	48 N	49	56 E	9.16
SHATT AL ARAB	29	57 N	48	35 E	17.14
SHAYBARA	25	24 N	36	50 E	6.23
SHAYKH HURBA	13	36 N	47	06 E	9.4
SHAYKH RIYAH	28	09 N	33	40 E	2.31
SHEIK SAID ISLAND	15	36 N	39	29 E	5.13
SHENAS	26	31 N	54	50 E	13.38
SHERM EL SHEIKH	27	51 N	34	17 E	6.4
SHI'B SHEAR	26	39 N	34	06 E	4.9
SHIB AL ABAYAD	24	54 N	37	07 E	6.25
SHIB AL BAYDA	22	44 N	38	47 E	6.32
SHIB AL FARKAN	19	39 N	40	34 E	7.21
SHIB AL GHUBAB	20	11 N	58	00 E	9.36
SHIB AL GUAK	24	59 N	37	11 E	6.26
SHIB AL KABIR	21	41 N	38	50 E	6.34
SHIB ANBAR	19	17 N	37	42 E	4.50
SHIB ANDA	18	51 N	41	09 E	7.30
SHIB ASBAYZENIYAT	24	51 N	36	58 E	6.25
SHIB ASH SHARM	24	03 N	37	52 E	6.30
SHIB ASH SHUBUK	18	49 N	37	33 E	4.56
SHIB BU SAYFAH	19	56 N	58	15 E	9.36
SHIB FARASAN	16	40 N	41	30 E	7.11
SHIB GHUFRA	19	47 N	40	23 E	7.24
SHIB JANAB	19	55 N	39	56 E	7.24
SHIB KADUN	19	29 N	58	00 E	9.36
SHIB KHADRA	19	45 N	40	32 E	7.24
SHIB MATRAH	20	09 N	58	38 E	9.44
SHIB MISMARI	21	20 N	39	02 E	6.36
SHIB NAZAR	22	19 N	38	51 E	6.32
SHIB QUSAYR	19	11 N	37	37 E	4.50
SHIB SAHABAK	19	54 N	40	00 E	7.8
SHIB SHAJAH	20	21 N	39	34 E	7.5
SHIB SUBAIKHA	19	56 N	40	27 E	7.21
SHIMBER BERRIS	10	44 N	47	15 E	10.27
SHINAS	24	46 N	56	29 E	11.22
SHIP ROCK	13	36 N	42	43 E	3.18
SHIRLEY REEFS	18	41 N	41	08 E	7.31
SHUHAYR	14	39 N	49	22 E	9.14
SHULAH	10	46 N	46	42 E	10.31
SHUQRAH	13	21 N	45	42 E	9.3
SIKHA	13	55 N	48	23 E	9.9
SIR ABU NU'AYR	25	15 N	54	12 E	15.23
SIR BANI YAS	24	20 N	52	36 E	15.28
SIR BU NU'AYR	25	15 N	54	12 E	15.23
SIRAH	12	47 N	45	03 E	8.8
SIRI AYANAT	27	49 N	52	13 E	14.11
SIRRAIN	19	38 N	40	37 E	7.23
SIRRAYN	19	38 N	40	37 E	7.23
SIRRI OIL FIELD A	25	45 N	54	08 E	13.26
SIRUS OIL TERMINAL	29	01 N	49	29 E	16.33
SITRAH	26	09 N	50	37 E	16.5
SITRAH	26	10 N	50	40 E	16.6
SITRAH ANCHORAGE	26	11 N	50	41 E	16.6
SIYYAN HIMAR	12	31 N	43	18 E	5.35
SOGRA	15	41 N	40	00 E	5.20
SOHAR	24	23 N	56	45 E	11.19
SOHAR	24	31 N	56	38 E	11.21
SONMIANI BAY	25	12 N	66	38 E	12.2
SONMIANI HARBOR	25	25 N	66	32 E	12.4
SONO ALI	11	57 N	42	59 E	10.2
SOUTH MAST BEACON	29	56 N	48	34 E	17.19
SOUTH SHOAL	29	39 N	32	36 E	2.20
SOUTHERN PEAK	23	18 N	35	23 E	4.17
SOUTHWEST ROCKS	13	39 N	42	36 E	3.18
SPIT REEF	26	41 N	33	58 E	4.9
SQUARE ISLAND	12	45 N	44	55 E	8.7
ST. JOHNS ISLAND	23	37 N	36	12 E	4.17
STIFFE BANK	26	25 N	53	08 E	14.7
STRAIT OF HORMUZ	26	35 N	56	15 E	13.7
STRAIT OF JUBAL	27	40 N	34	00 E	2.35
STRAIT OF TIRAN	28	00 N	34	27 E	6.5
STRAWBRIDGE STRAIT	16	35 N	42	17 E	7.16
SUEZ BAY	29	54 N	32	32 E	1.12
SUEZ CANAL CONTAINER TERMINAL	31	13 N	32	21 E	1.9
SUGARLOAF	19	59 N	40	46 E	7.3
SUGARLOAF	24	33 N	37	32 E	6.27
SUKHNA PORT TANKER TERMINAL	29	39 N	32	22 E	2.3
SUKHUR QUWAYH	26	24 N	34	12 E	4.11
SUMAIMA	21	14 N	39	08 E	7.4
SUMAYMAH	21	14 N	39	08 E	7.4
SUMAYR	16	30 N	42	13 E	7.16
SUMAYR	17	47 N	41	23 E	7.36
SUQUTRA	12	34 N	53	59 E	10.52
SUR	22	34 N	59	32 E	11.4
SUWADI POINT	23	57 N	57	48 E	11.16
SUZA	26	47 N	56	04 E	13.16
SW FATEH OIL FIELD	25	31 N	54	19 E	15.24

T

	Position °	'	°	'	Sec. Para
TACLAI	17	31 N	38	52 E	5.4
TADJOURA	11	47 N	42	57 E	10.7
TAGI TERARA	13	03 N	42	39 E	5.26
TAHERI	27	40 N	52	21 E	14.12
TAMRIDA BAY	12	40 N	54	01 E	10.55
TARUT	26	34 N	50	04 E	16.13
TAWAKKUL	26	24 N	56	29 E	13.5
TAYLOR ROCK	29	01 N	48	35 E	16.36
TEDKAR ISLAND	18	57 N	40	36 E	7.9
TEKAY DESET	13	40 N	42	13 E	5.29
TEPSA	17	26 N	38	47 E	5.3
TERMAB	16	39 N	38	40 E	5.10
THE BAR	30	00 N	49	03 E	17.10
THE BROTHERS	12	08 N	53	10 E	10.51
THE BROTHERS	26	19 N	34	51 E	3.2
THE FLAT	26	30 N	55	18 E	13.19
THE GUT	26	40 N	55	16 E	13.36
THE HAYCOCKS	13	32 N	42	37 E	3.19
THE HUMMOCKS	26	35 N	55	18 E	13.19
THE NARROWS	15	33 N	39	57 E	5.18
THE RIDGE	24	24 N	52	38 E	15.29
TIDHKAR	18	57 N	40	36 E	7.9
TIFLAH ISLANDS	20	38 N	37	15 E	4.35
TILLY ROCK	17	30 N	56	25 E	9.30
TOMBAK	27	44 N	52	11 E	14.14
TOR BANK	28	15 N	33	23 E	2.29
TOREH-YE KHOWRAN	26	58 N	55	44 E	13.33
TORLESSE ROCK	25	54 N	55	01 E	13.22
TOWARTIT ELBOW	19	29 N	37	18 E	4.46
TOWER HILL	18	32 N	56	29 E	9.33
TOWER HILL	20	26 N	40	00 E	7.2
TRINKITAT HARBOR	18	41 N	37	45 E	4.58
TUNB AL KUBRA	26	16 N	55	18 E	13.20
TUNB AS SUGHRA	26	14 N	55	09 E	13.22
TWIN CONES	20	03 N	40	46 E	7.3

U

	Position °	'	°	'	Sec. Para
UMM AGAWISH EL-SAGHIR	27	09 N	33	51 E	4.3
UMM AL AYSH	29	01 N	48	35 E	16.36
UMM AL HATAB	24	13 N	51	52 E	15.41
UMM AL HUL	25	05 N	51	37 E	15.46
UMM AL KHASASIF	30	26 N	48	08 E	17.27
UMM AL KIMAN	27	50 N	33	35 E	2.11
UMM AL QAMARI ISLETS	18	58 N	41	04 E	7.30
UMM ALI	19	31 N	40	45 E	7.26
UMM AL-QAIWAIN	25	34 N	55	36 E	15.9
UMM AN NAML	29	23 N	47	52 E	16.44
UMM AN NAR	24	27 N	54	29 E	15.21
UMM AN NASAN	26	09 N	50	24 E	16.9
UMM AR RASAS	30	25 N	48	10 E	17.26
UMM AS SAIFA	19	03 N	41	02 E	7.27
UMM AS SUQAYM	25	10 N	55	13 E	15.16
UMM ASH SHAYF OIL FIELD	25	13 N	53	14 E	15.36
UMM KERKAN SHOAL	18	22 N	41	24 E	7.34
UMM LAJJ	25	02 N	37	14 E	6.24
UMM NASAN	26	09 N	50	24 E	16.9
UMM QASR	30	01 N	47	57 E	16.47
UMM SAID	24	54 N	51	34 E	15.45
UMM SIHR	24	57 N	37	09 E	6.26
UQBAN SAGHIR	15	25 N	42	31 E	7.49

	Position °	'	°	'	Sec. Para
V					
VICTORIA PEAK	16	52 N	38	32 E	5.10
W					
WADI FEIRAN TERMINAL	28	45 N	33	13 E	2.26
WAQADURIYA	11	06 N	47	46 E	10.34
WASALIYAT ISLETS	17	41 N	40	55 E	7.10
WEBB ROCK	24	05 N	52	15 E	15.40
WELL ROCK	17	29 N	56	19 E	9.30
WEMYSS PASSAGE	19	46 N	40	21 E	7.24
WEST BAY	25	14 N	64	32 E	12.7
WEST ISLET	12	28 N	43	22 E	10.2
WEST SPIT	26	17 N	50	31 E	16.7
WHITE POINT	26	40 N	55	55 E	13.17
WICKHAM PATCHES	15	27 N	42	43 E	7.50
WIDAN	17	52 N	41	43 E	7.35
WISHKA	17	01 N	41	36 E	7.12
WUDAM	23	50 N	57	32 E	11.17
X					
XIIS	10	53 N	46	54 E	10.31
XIIS	10	54 N	46	54 E	10.31
Y					
YANBU	24	05 N	38	03 E	6.30
YANBU SOUTH LIGHT	23	28 N	38	26 E	6.30
YASAT ALI	24	14 N	52	01 E	15.40
YITI	23	33 N	58	42 E	11.8
YRAS-E ARID	26	35 N	54	26 E	14.2
Z					
ZAAFARANA TERMINAL	29	10 N	32	41 E	2.6
ZAHARI	13	51 N	43	14 E	7.63
ZAHRAT DURAKAH	16	52 N	42	16 E	7.39
ZAHRAT SUMAYR	16	28 N	42	16 E	7.16
ZEILA	11	22 N	43	28 E	10.19
ZEIT BAY LPG TERMINAL	27	48 N	33	34 E	2.15
ZEIT BAY TERMINAL	27	50 N	33	36 E	2.12
ZENOBIA	29	53 N	32	33 E	1.12
ZIRKUH	24	53 N	53	04 E	15.31
ZIRKUH PETROLEUM PORT	25	01 N	53	00 E	15.32
ZUFAR	17	02 N	54	10 E	9.24
ZULA BAHIR SELATE	15	30 N	39	40 E	5.14
ZULUF OIL FIELD	28	23 N	49	14 E	16.31
ZUQAQ	18	04 N	40	48 E	7.10