PUB. 147

SAILING DIRECTIONS (ENROUTE)

★

CARIBBEAN SEA VOLUME 1

★

Prepared and published by the
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
Springfield, Virginia

2015

FIFTEENTH EDITION

Preface

Pub. 147, Sailing Directions (Enroute) Caribbean Sea Volume 1, Fifteenth Edition, 2015, is issued for use in conjunction with Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas. Companion volumes are Pubs. 141, 142, 143, 145, 146, and 148.

Digital Nautical Charts 14, 15, and 16 provide electronic chart coverage for the area covered by this publication.

This publication has been corrected to 03 January 2015, including Notice to Mariners No. 1 of 2015. Subsequent Publication Data Updates (PDUs) have corrected this publication to 23 January 2016, including Notice to Mariners No. 4 of 2016. 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://dnc.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 available as a Publication Data Update (PDU) 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.

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.

Ports.—Directions for entering ports are depicted where ap-

propriate 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.

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.

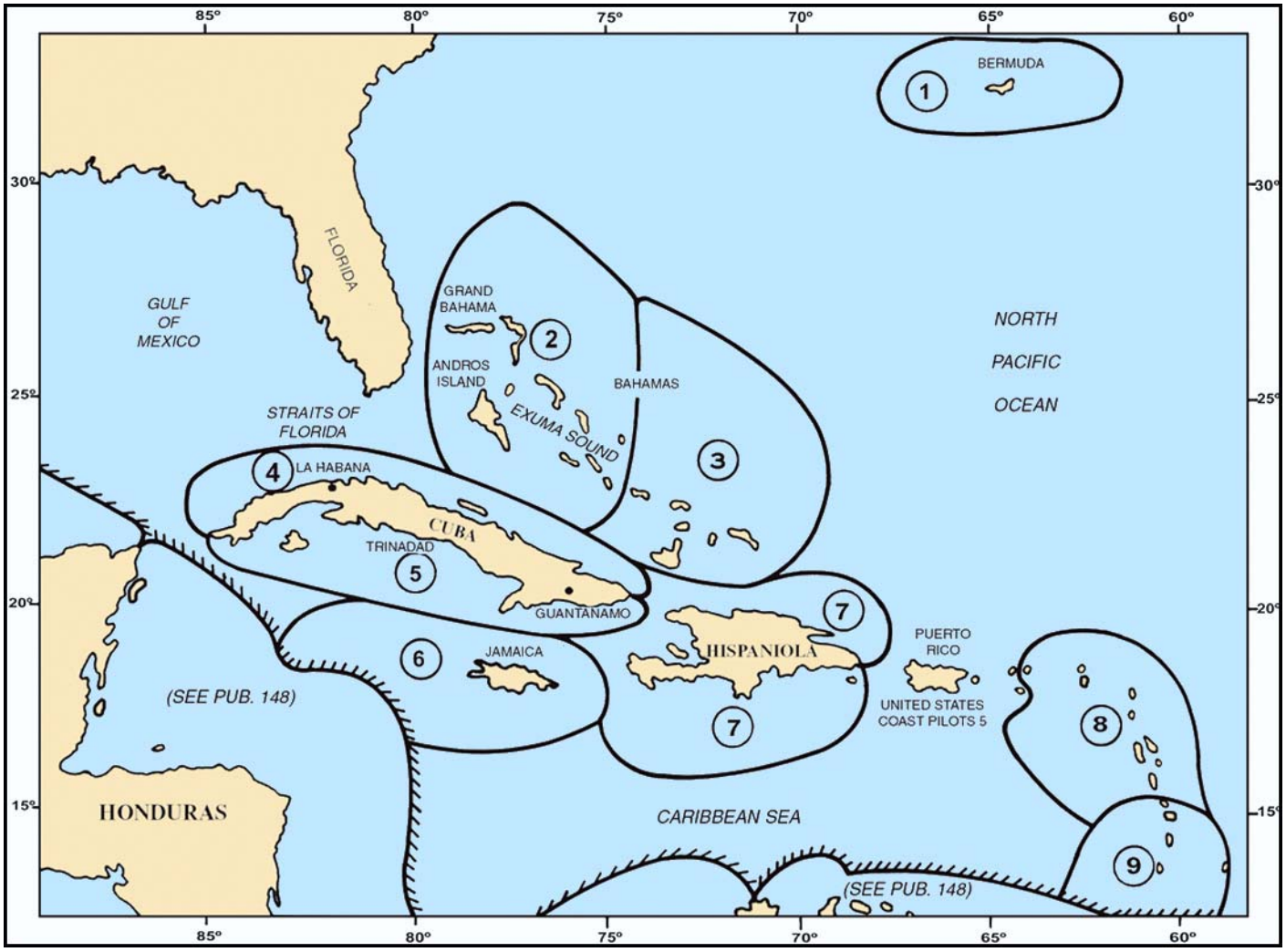
Various port handbooks.

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	Paragraph 2.6
Sector 4	Paragraphs 4.14 and 4.46
Sector 6	Paragraphs 6.18, 6.30, and 6.38
Sector 7	Paragraphs 7.14, 7.42, and 7.43
Sector 8	Paragraphs 8.32, 8.35, and 8.36
Sector 9	Paragraph 9.6



SECTOR LIMITS — PUB. **147**

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

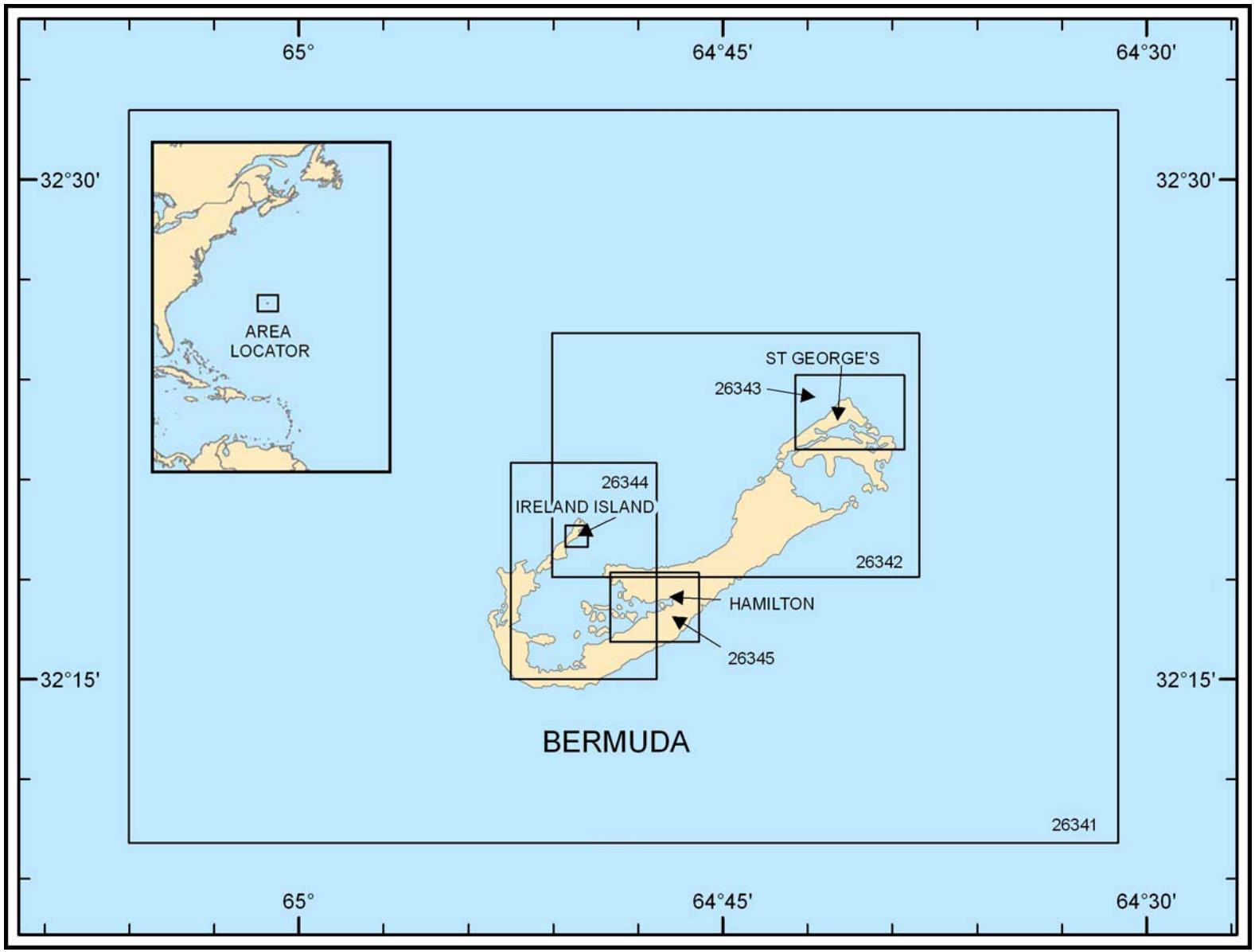
LANBY	Large Automatic Navigation Buoy	SBM	Single Buoy Mooring
NAVSAT	Navigation Satellite	SPM	Single Point Mooring
ODAS	Ocean Data Acquisition System	TSS	Traffic Separation Scheme
CBM	Conventional Buoy Mooring System	VTC	Vessel Traffic Center
MBM	Multi-Buoy Mooring System	VTS	Vessel Traffic Service
CALM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

The following abbreviations may be used in the text:

Miscellaneous

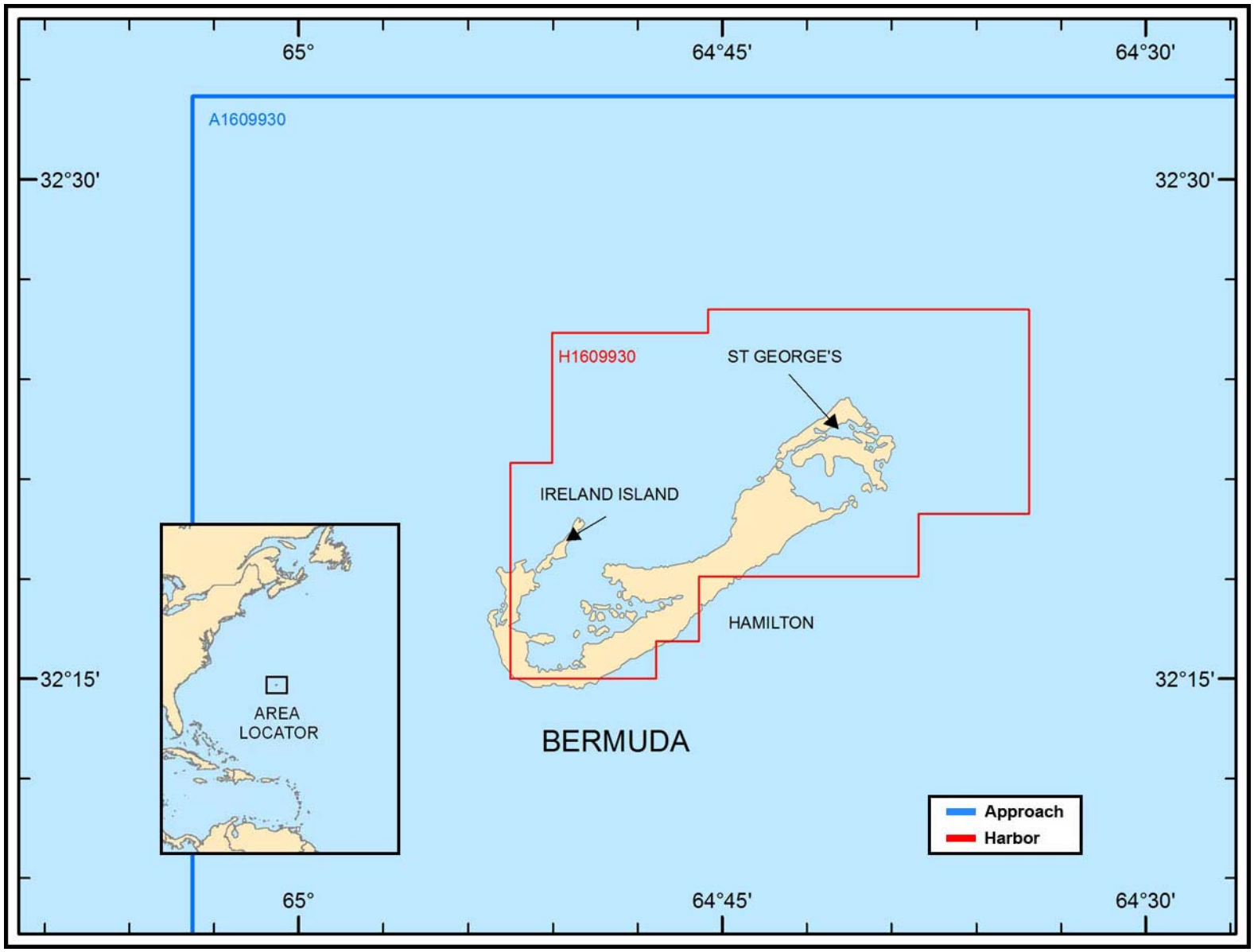
AIS	Automatic Identification System	MMSI	Maritime Mobile Service Identity Code
COLREGS	Collision Regulations	No./Nos.	Number/Numbers
IALA	International Association of Lighthouse Authorities	PA	Position approximate
		PD	Position doubtful
IHO	International Hydrographic Organization	Pub.	Publication
IMO	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

Contents



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 16 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 1 — DNC LIBRARY INFORMATION

SECTOR 1

BERMUDA

Plan.—This sector describes Bermuda in general, then the sea approaches and inner water passages. The description is NE to SW.

General Remarks

1.1 Bermuda (32°18'N., 64°45'W.) lies about 565 miles ESE of Cape Hatteras, the nearest landfall, and in a mid-ocean position adjacent to direct routes from the United States Gulf ports to the Mediterranean and Northern Europe, and to direct routes from United States East Coast ports to South America.

Of the 300 emergent above-water features of this group on the Bermuda Great Reef, about half are only above-water rocks. About 20 of the remaining 150 islands are inhabited and the seven largest are connected by bridge and causeway to Bermuda (Hamilton).

Bermuda is the largest, followed by Saint George's Island and Saint David's Island to the NE, and Somerset Island, Watford Island, Boaz Island, and Ireland Island to the SW.

The islands have a total surface area of almost 21 square miles, and extend almost 14 miles in length. Saint George's Harbour and Saint George lie in the N portion of the chain. Great Sound and Hamilton, Ireland Island Dockyard, and Port Royal Bay lie in the S part.

Winds—Weather.—Bermuda and the Bahamas, while some 725 miles apart, are subject in large measure to the same natural forces that produce the general climate and current conditions within the SW portion of the North Atlantic Ocean. The consequences of these conditions differ primarily in degree in that Bermuda is an oceanic island while the Bahamas tend to be more coastal islands.

The principal sources of climate and current conditions affecting Bermuda and the Bahamas are more or less constant NE trade winds. As these partake of the general North Atlantic clockwise movement circulating around the semi-permanent areas or high barometric pressure alternating between the Azores and Bermuda.

As this high fluctuates seasonally in position and intensity, so the N limit of the trade winds varies during the year. In winter it lies in about 25°N, while in summer it shifts to about 30°N.

The fluctuating N limit of the NE trade winds thus falls approximately between Bermuda and the Bahamas, and thereby becomes a contributing factor to differences in local wind and current conditions.

The West Indian hurricane, the principal aberration within the general forces governing the production of climate conditions, develops more often than not well to the E and in the latitudes of the low barometric pressure doldrums.

It travels slowly W within the belt of the NE trade winds and, with an increase in speed generally recurves NE in about 30°N.

The season of its occurrence is late May to early December and the prevalence of its track is such that it affects the Bahamas considerably more than Bermuda.

Northers are a lesser aberration within the general climate producing forces. They originate as an escape from the continental United States of large cold air masses which in their movement S and SE, decrease from storm velocities to strong winds that tend to veer from W through NW to N. Land breezes are negligible.

Bermuda, situated somewhat above 32°N, lie outside the area of direct NE trade winds influence and within the axis of the general clockwise circulation obtaining in the North Atlantic Ocean, with the consequence that the wind direction differs basically from that in the trade wind belt to the S.

Wind from the SW predominates between March and August while winds from the W and NW prevail between December and February. Fall winds are variable. Average wind velocity is between a Force 3 and 4, somewhat less in summer than in winter.

With the breakdown of the Azores high in September and October and thereafter with the passage of extra tropical cyclones moving E from the U.S. mainland, gale winds from the SW through NW occur with increased frequency. Tropical cyclones originating during this period and developing into storms commonly pass W of the islands.

During the summer, gale force winds are infrequent and blow from SE through NE only when in association with hurricanes. Many of these latter pass near the islands but only about once a year on the average pass close enough to produce locally experienced hurricane winds.

Bermuda has a maritime climate that is rather sultry and generally quite mild. The average high temperature is 30°C between July and September and the average low seldom falls below 14°C at other times of the year. October is the wettest month, while April is the driest. Fog is rare and visibility is commonly impaired only during heavy rainfall.

Tides—Currents.—Ocean currents affecting Bermuda and the Bahamas are almost entirely dependent on prevailing winds which, in general cause a clockwise flow around the North Atlantic basin. The local effects of these currents are dependent upon the position of the observer within the general flow.

Tidal currents are, with exception, negligible in the open sea and, while generally weak, become matters of concern only within confined channels leading through reefs and the like. In general, flood currents set directly onto reefs while ebb currents set directly off.

Tides for Bermuda and the Bahamas are mixed. There are two daily highs and lows of near equal height when the moon is near the equator.

Then two daily highs and lows with increasing diurnal inequality as the moon declination increases, then essentially only one daily high and low when the moon declination maximizes.

The mean sea level is affected by the wind, and depths may be 0.3 to 0.4m less than charted.

Depths—Limitations.—Bermuda Great Reef is the name given to the extensive reef system on which Bermuda is locat-

ed. The outer dangers and approach channels through the reef will be described later in the text.

Aspect.—Saint George's Harbour has been reported to be radar conspicuous. Folly Towers are conspicuous on the slope of Town Hill. Gibbs Hill lies near the S part of Bermuda's S extremity. Wreck Hill, a conical hill near the W extremity of the same island, may be useful if approached from the N or S.

Town Hill (32°19'N., 64°44'W.), located in the N portion of Bermuda, is the highest point in the group.

The larger islands are somewhat wooded and generally characterized by round hills which seldom rise above a height of 61m.

Gibbs Hill Light

Pilotage.—Pilotage is compulsory except for naval vessels and yachts and is available in daylight only. The boarding ground is located 2 miles ENE of Saint David's Head, with the E tip of the island bearing 240°. Vessels with a draft in excess of 10m and all other vessels carrying hazardous cargo, not holding appropriate approach charts, or with limited maneuverability are boarded 3 miles E of Saint David's Head.

The pilot station (call sign: Bermuda Pilots) may be contacted on VHF channels 12 and 16.

Regulations.—An IMO-established Area to be Avoided has been established in the waters surrounding Bermuda, and may best be seen on the chart. Because of the great danger of stranding on the extensive reefs to the W, N, and NE of the islands and, for reasons of environmental protection, all vessels carrying cargoes of oil or hazardous materials and all other vessels of more than 1,000 gt, whether or not bound for Bermuda ports, should remain outside of the area.

A voluntary Vessel Traffic Management Service (VTMS) is in effect for vessels passing within 30 miles of Bermuda and is mandatory for vessels sailing for ports in Bermuda or intending to navigate within the Area to be Avoided.

The following is a summary of regulations dealing with vessel movements, berthing, and the duties of masters:

1. Ocean-going vessels have absolute right of way over local craft.
2. Vessels shall proceed at moderate speed.
3. The discharge or dumping of fuel oil, ballast, rubbish or any other materials is prohibited.

Traffic control is exercised through Bermuda Harbour Radio.

The following regulations govern Main Ship Channel, Five Fathom Hole, The Narrows, Murray's Anchorage, and South Channel to Grassy Bay. Additional regulations will be cited in the text where appropriate:

1. An inbound vessel has right-of-way, and should fly her national colors while navigating these channels to claim priority.
2. An outbound vessel should keep off and away from the channel at safe and sufficient distance, until the inbound vessel has cleared the channel.
3. No vessel should anchor in the channels, except in an emergency or through stress of weather and should clear the channel as soon as possible.

Vessels heading for Bermuda ports and making a scheduled call must radio their ETA at Five Fathom Hole 18 to 24 hours in advance, confirming at least 3 hours prior to arrival. Vessels making an unscheduled call must contact Bermuda Harbour Radio at least 24 hours in advance of arrival, stating:

1. Purpose of call and local agent.
2. ETA at Five Fathom Hole.
3. Nature and quantity of any dangerous or toxic cargo.
4. Gross registered tons, length, and draft.
5. Any restriction on ability to maneuver.
6. Any defects to navigational equipment, and whether large scale charts of Bermuda are available.

All vessels must remain at least 20 miles offshore until instructed to approach the pilot boarding ground.

All vessels should maintain a continuous listening watch on VHF channel 12 while transiting the buoyed channels and should obtain permission before transiting The Narrows and Town Cut Channel.

Vessels intending to enter the area to be avoided should contact Bermuda Harbour Radio and state nationality, position, course, speed, destination, type of cargo, and draft. Vessels should maintain continuous listening watch on VHF channel 16.

Vessels passing within 30 miles of Bermuda are requested to contact Bermuda Harbour Radio on VHF channel 16 initially, stating:

1. Type of vessel.
2. Nationality.
3. Laden or in ballast (tankers only).
4. Position, course, and speed.
5. Any course changes within 30 nautical miles of Bermuda.

Contact Information.—Bermuda Harbour Radio may be contacted as follows:

1.	Call sign:	Bermuda Radio ZBR
2.	RT Frequency:	2182 kHz and 4125 kHz
3.	VHF:	VHF channels 16 and 27
4.	Telephone:	1-441-297-1010
5.	Facsimile:	1-441-297-1530
6.	INMARSAT-C:	581-431010110 RCCB 584-431010120 RCCB
7.	Tugs:	VHF channel 10
8.	E-mail:	operations@rccbermuda.bm dutyofficer@marops.bm

Anchorage.—It has been reported that good hurricane anchorages for small craft may be found in Smiths Sound, Great Bay, Polly's Bay, Riddell's Bay, and Bermuda Freeport.

Anchorage while awaiting the pilot is available in Five Fathom Hole, but the local authorities should be consulted before attempting to anchor here.

Directions.—The sea approaches to Bermuda are generally in deep water and free of dangers, except for two off-lying seamounts to the SW and the sunken dangers of Bermuda Great Reef.

In times of poor visibility, the only safe approach to Bermuda is from the SE. It is recommended that vessels schedule their arrival in an area well to the NE of the islands during daylight hours, since the dredged entrance passages are without lighted ranges.

Entry at night is permitted only in an emergency. It is recommended that vessels approaching from the SW adjust their course to stand well off the SE side of the islands and remain in deep water until the E extremity of the islands can be rounded and a final approach made in safety from seaward.

It is recommended that vessels approaching from the W and NW remain in deep water well to the N of the Bermuda Great Reef, and adjust their courses in order to safely clear the E extremity of the reef and arrive at a position about 10 miles NE of the harbor entrance.

A final approach may then be made with Saint David's Island Light bearing more than 226° to clear all known dangers.

A radiobeacon and DGPS station at the NE end of Bermuda near St. David's Head may be of assistance during an approach.

It is recommended that vessels proceed with caution when transiting an extensive submarine exercise area to the S of the islands. Oceanographic buoys have been reported about 13 miles S of Saint David's Head.

Caution.—The attention of all mariners is drawn to the dangers and hazards of close approach to the reefs which surround Bermuda, especially to the N and NE of the islands.

They extend in places to a distance of 12 miles from the visible land and are virtually unmarked by navigational aids at their extremities. The outer sea lights and buoys (North Rock Light and the lighted buoy in the NE approaches) may not be reliable due to inaccessibility for maintenance, except in very calm weather.

Ships on passage, with no intention of calling at Bermuda, are advised to give the islands a berth of at least 30 miles, observing that little distance is lost on the passage by so doing and nothing is gained by a closer approach. On the contrary, stranding or shipwreck has occurred all too often through the years with pollution of the surrounding reefs and beaches and destruction of ecological life as well as possible ruin of the economy of the islands.

Ships enroute to Bermuda should be certain of their position and should make final approach from the E and S because the only entrance to the sheltered waters is at the SE side of the islands off Saint George's Harbour.

Here, pilots are available and can be embarked in daylight hours. Entry at night is dangerous and prohibited and a close approach at night should not be attempted without local knowledge.

Three sub-surface moorings and one surface mooring have been established 50 miles SSE of Bermuda. Equipment is deployed for the purpose of scientific study on pollution and sediment. The area is centered 31°40'N 64°10'W and has a drift radius of 10 miles. Vessels are cautioned to keep clear and avoid dumping or discharging waste in this area.

Bermuda has established extensive Marine Conservation Areas. Local officials should be consulted for details.

In poor visibility, vessels should heave-to rather than attempt to enter as the beacons and buoys are not radar or visually conspicuous.

Fish traps may be encountered.

Magnetic anomalies exist in the vicinity of Bermuda. Normal magnetic variation values are evident along a line extending SE from Ireland Island across the entrance to Hamilton Harbor. To the NE of the line, values are commonly 0.5° to 1.5° above normal with somewhat higher values in one or two minor areas, e.g. Clarence Cove.

Values SW of the line are commonly below normal such that a value of at least 3.5° below normal is to be expected in the entrance to Port Royal Bay, between King's Point and Grace Island. However, near Hogfish Cut there is a small area with values in excess of 2.0° above normal. When swinging ship in order to correct compasses, it is recommended that vessels choose a location outside the 200m curve.

Approaches to Bermuda

1.2 Bermuda Great Reef is the name given to the reef on which Bermuda is located. Dangers extend up to 12 miles N and NW of the island chain.

Between Saint David's Head and Gibbs Hill, the SE edge of the reef extends 0.2 to 3.2 miles offshore.

Two off-lying banks, or seamounts, of coral are SW of Bermuda.

Plantagenet Bank (32°00'N., 65°10'W.), about 23 miles SW of Bermuda's SW extremity, has the form of truncated cone which rises steeply from the sea floor to a comparatively level summit having an area of about 5 miles square and a least known depth of 47.5m.

An obstruction covered by 29m, the remains of Argus Island Tower, lies near the SE shoulder of the bank.

A local magnetic anomaly, with irregular values of from 2° above to 5° below normal, has been observed over and in the vicinity of Plantagenet Bank.

1.3 **Challenger Bank** (32°05'N., 65°03'W.), about 14 miles SW of Bermuda, is similar to Plantagenet Bank in size and shape, but differs in that it has a least known depth of 42m.

Ariadne Bank, with depths of 20m, is reported to be about 6 miles NE of Saint David's Head.

South West Breaker lies about 2 miles SW of Gibbs Hill. Chaddock Bar and Little Bar lie about 3.5 and 5.5 miles W, respectively, of the same point. Long Bar, at the SW corner of the reef, lies 8 miles W of Gibbs Hill and breaks in gales.

Chub Heads, on the W edge of the reef, lies about 2.5 miles N of Long Bar and break in NW gales. A lighted beacon with a racon stands on the reef.

Between Chub Heads and North Rock,15 miles NE, the reef consists of extensive coral flats with depths of less than 1.8m and numerous patches and heads on some of which the sea

breaks. These include Western Ledge Flats and Pilchard Dicks, among others. A light stands on Western Ledge Flats.

North Rock Light

1.4 **North Rock** (32°28'N., 64°46'W.), marked by a light, consists of three sharp pinnacles, 2.4m high, on a flat reef that dries in places.

Great Breaker Ledge Flat extends 0.75 mile ENE from a position about 0.6 mile NE of North Rock. North East Breakers, about 1.5 miles farther E are nearly always marked by breakers. Two detached patches, with least depths of 9.4m, are 1.5 miles farther ENE.

Dangerous wrecks are situated about 2 miles W and 1.2 miles E of North East Breakers Light.

Kitchen Shoals, with a least depth of 1.8m, is located 4.5 miles NNE of Saint David's Head. Kitchen Shoals Lighted Beacon, white fiberglass tower with red bands on a concrete tripod, 14m high, is fitted with a radar reflector, marking Kitchen Shoals.

Depths of less than 11m lie within 1 mile N and E of the shoal. A sunken wreck lies about 2.5 miles ENE of Kitchen Shoals Lighted Beacon.

Mills Breaker lies about 1.5 miles S of Kitchen Shoals.

Mills Breaker Ledge is a detached portion of the reef that extends about 1 mile S of Mills Breaker.

Mills Breaker Channel passes outside Kitchen Shoals and Mills Breaker Ledge into Five Fathom Hole.

Sea Venture Shoals lie W of Five Fathom Hole. Sea Venture Channel passes between Mills Breaker and Sea Venture Shoals, but is only useful to small vessels with local knowledge.

Jacks Flats, with a least depth of 14.3m, lie across the entrance to Five Fathom Hole. There is foul ground about 1.3 miles NE of Saint David's Head.

The following berths are located relative to Saint David's Head Light:

1. Bearing 219° and about 1 mile distant, in depths of 11.9 to 18.3m.
2. Bearing 224° and about 1 mile distant, in depths of 16.7 to 19.8m.

Five Fathom Hole lies 1 mile NNE of Saint David's Head, and provides the principal entrance through the reefs to The Narrows and Town Cut Channel.

The area offers temporary exposed anchorage, open to all winds except those between SSW and WNW. The area has no protection from the sea except that afforded by the reefs. The bottom is rocky. A charted anchorage area is available N of the dredged channel, which shows depths from about 9.1 to 19.8m.

Care must be taken to select a clear sandy spot as depths are uneven, without crops of coral and rock, which may be detected from aloft.

Take care not to veer too much cable as it may foul. Vessels should be prepared to put to sea if winds begin shifting N.

Anchorage is available S of the dredged channel leading from Five Fathom Hole, which should be used only after consulting with the local authorities. Vessels should select a sandy spot, avoiding the rock and coral out crops visible from aloft.

Northeast and Northwest Sides of Bermuda

1.5 **Saint David's Head** (32°22'N., 64°39'W.), the E extremity of Saint David's Island, is a bold rocky promontory, 26.8m high. The summit of Mount Hill, about 0.3 mile SW of the head, is marked by a light.

Saint David's Head Light

A radiobeacon transmits from a position 0.2 mile NE of Saint David's Head Light.

An aero light is exhibited from the control tower of Kindley Field Airport, on the 33m summit of Saint David's Island, 1.2 miles W of Saint David's Head Light.

Numerous red obstruction lights are exhibited as aids to air-

craft from various buildings, towers, and masts throughout the islands.

On Cooper's Island, the SE extremity of Saint David's Island, there are a number of masts and an aero radiobeacon.

Saint Catherine Point (32°23.5'N., 64°40.5'W.), the N extremity of Saint George's Island, is a prominent, isolated bluff; Fort Catherine stands on the summit. A white flagstaff is conspicuous on the face of the fort.

The land to the S of the isolated bluff is mostly wooded, and rises to a height of 50m. Fort Victoria lies about 0.3 mile S of Saint Catherine Point, with a conspicuous hotel close NE.

To the SE, 0.4 mile off Fort Victoria, is a radio tower elevated at 49.7m; there are other masts in this locale. Fort George is about 0.5 mile SW of Fort Victoria, where a conspicuous flagstaff, marked by obstruction lights, stands about 78m high.

Saint George's Harbour

1.6 Saint George's Harbour (32°22.5'N., 64°41'W.) (World Port Index No. 9940), in the N part of Bermuda, is a small, largely landlocked shoal water basin sheltered by Saint George's Island and Saint David's Island.

Aspect.—Saint George's Island is quite hilly throughout and tends to rise and fall off steeply on its NE and NW sides. Saint Catherine Point, the N extremity of the island, is a conspicuous isolated bluff which, surmounted by fortifications, rises inland and up the wooded slopes of a dominating hill surmounted by the fortifications of Fort Victoria.

The Saint George community lies scattered on the basin side of the slopes falling away from Fort Victoria. Fort George Signal Station, close SW of Saint George, is atop a hill with a conspicuous flagstaff which displays red obstruction lights and flies the distinctive blue ensign. Sugarloaf Hill (Cherrystone Hill), farther SW, is a conical and conspicuous landmark when viewed from the E.

Saint David's Island is quite hilly throughout the area of its original configuration, facing Saint George's Harbour and the sea to the E, and is quite level throughout the area which, by means of reclamation, presently extends the island well to the W, S, and, in the SE, to Cooper's Island.

Saint David's Head, reported radar conspicuous at 17 miles, is a bold, rocky promontory at the NE end of the island.

Castle Harbour is the largely shoal water area confined between Saint David's Island and Bermuda. It is entered from sea by small craft with local knowledge through Castle Roads, a narrow winding passage which, marked seaward by Gurnet Rock, leads in between Southampton Islet to the NE, and Old Castle (Charles Island) to the SW. Gurnet Rock is conspicuous and, from the SE, has the appearance of a cone. Access from the W is by means of a small craft channel at Barge Bridge, a bridge at the N end of the causeway joining Saint David's Island with Bermuda.

The sea enters Saint George's Harbour through the shallow openings between the many wooded and hilly islets blocking the E side of the harbor.

Anchorage.—Saint George's Harbour has anchorage, in depths of 9.1 to 14.6m, stiff clay, poor holding ground. Anchoring vessels should stay clear of the fairway, taking into account the tidal currents, and the vessel's swing. Tidal currents flow directly into the harbor on a rising tide and out on a falling tide.

The former U.S. Naval Air Station, Bermuda, occupies the larger part of Saint David's Island. It comprises a military airfield (Kindley Field), with its support activities, and a civilian airport (Bermuda Airport).

Marginal Wharf, on the S side of Saint George's Harbour, is a landing place for launches from vessels anchored farther out in the harbor.

Directions.—Town Cut Channel, the principal passage and the only one suitable for ocean vessels, is a narrow, slightly dog-legged channel dredged through the coastal bank lying both outside and inside the harbor leading in between Saint George's Island, to the N, and Higgs Island and Horseshoe Island, to the S.

The initial approach from Sea or Five Fathom Hole is made through a portion of the cut for The Narrows, which shows a least depth of 8.5m. Town Cut Channel approach has a minimum width of 73m.

Vessels, entering Saint George's Harbour by way of Town Cut Channel, steer on a heading of 261° near the center of the channel and then proceed until in position about 0.5 mile E of Higgs Island, where they ease to starboard and continue on into the harbor with the assistance of the aids marking the outer and inner reaches of Town Cut Channel.

It is recommended to transit Town Cut Channel at HW and proceed at a minimum speed to maintain steerage; large vessels should not enter when winds from the NNE through SSE exceed a velocity of 16 knots.

All vessels are cautioned that a sheer is generally experienced in the vicinity of Horseshoe Island.

Saint George's Channel, a secondary natural passage with a least depth of 4.6m in the fairway, crosses the coastal bank to the SE of Town Cut Channel and then proceeds through the deep water trench between Paget Island and Smiths Island. The several reaches of this passage are marked by aids which cannot always be relied on because of their condition. Local knowledge is essential.

Jenkins Boiler Channel, entered close SE of Saint George's Channel, is a narrow passage available to vessels with local knowledge, which crosses the coastal bank in a least depth of 4.9m with Fort Cunningham on Paget Island bearing about 269°.

Bremen Cut and The Narrows continue Jenkins Boiler Channel and Saint George's Channel to the S of Smiths Island in shoal depths suitable only for small craft.

At the W side of Saint George's Harbour Ferry Reach, between Saint George's Island and Saint David's Island NW side, is a narrow shoal water passage which, available to small craft of drafts less than 2.4m, joins Saint George's Harbour with Castle Harbour.

1.7 Saint George (Saint George's Town) (32°23'N., 64°41'W.), the former capital of Bermuda, is a small community and tourist center lying on the N side of Saint George's Harbour.

Depths—Limitations.—The principal alongside berthing facilities lie WSW of Ordnance Island and consist of Pennos Wharf. Pennos Wharf is a continuous wharf, 229m in length, accommodating 4 berths, handling general and bulk cargo, cruise vessels, and Ro-Ro vessels. These berths have depths

alongside of 9.1m and can accommodate vessels with a maximum draft of 7.9m. A pier is located on the S side of Ordnance Island, with a length of 107m and depths alongside of 8.3m that will accommodate vessels with a maximum draft of 7.9m.

Esso Bermuda operates a tanker berth, situated on the SW end of Ordnance Island at the end of a pier, 100m in length that can accommodate tankers 230m in length with a maximum draft of 10.4m. Esso Oil Terminal is a dolphin berth, consisting of 2 dolphins center platforms, and walkways with water depths of 10.6m. Tankers using this terminal can have a maximum draft of 9.75m.

Pilotage.—Pilotage is compulsory for all ports in Bermuda except for yachts and is available during daylight hours only. The pilot boards 3 miles E of Saint Davids Light for deep draft vessels and 2 miles ENE of St. Davids Light (vicinity of SB lighted buoy) for all other vessels.The pilot boats have a black hull with orange or white superstructures with Pilots or Pilot Rescue on the side.

Great Sound and Approaches

1.8 The approaches to Great Sound, the large bight in the S part of Bermuda, lead in from sea by way of several passages. They proceed first N of Saint George's Island, then wind through the extensive but much-encumbered lagoon between the NW side of the islands and Bermuda Great Reef, and finally end at Grassy Bay and the channel dredged through the coral ridge across the Great Sound entrance.

Depths are a limiting factor and vary throughout the approaches, particularly in the area of the lagoon where they are quite irregular. The least depth in the passage to Grassy Bay by way of North Channel was reported to be 11.6m. The least depth by way of South Channel was reported as being 8.8m.

Tides—Currents.—The duration of slack water varies greatly, ranging from no slack to a period of 2 hours. With a NE wind, the tide rises more quickly and falls more slowly than it does with a SW wind. On the rising tide, the tidal current sets W round Saint David's Head into Saint George's Harbour and through The Narrows, nearly in the direction of the channel, as far as **Saint Catherine Point** (32°23'N., 64°40'W.) where it sweeps round to about WSW; its rate varies from about 0.2 to 2 knots according to the strength of the wind.

On the falling tide, the tidal current sets at about the same rate in a NE direction towards Saint Catherines Point, where it diverges, part setting ESE and SE through the channel. Abreast Sea Venture Shoals, the direction of the tidal curreny is uncertain. Abreast the approaches to Saint George's Harbour, the rate of the tidal current is increased by the streams flowing out of that harbor.

Depths—Limitations.—The Narrows, the principal seaward entrance to the passage proceeding to Great Sound, is a narrow, dredged channel which leads in from sea and through that portion of the Bermuda Great Reef that is close to the NE side of Saint George's Island. It is about 2.5 miles long, about 151m wide, and has a reported least depth of 11.6m. Shoal water, sunken rocks, and coral heads abound on each side of the channel.

Regulations.—Inbound vessels should avoid South Channel W of Buoy No. 24 if there is an outbound vessel between Buoy No. 24 and Beacon No. 30, or in Grassy Bay. Vessels should not overtake in this portion of the channel.

For further information, see the Regulations topic in paragraph 1.1.

Anchorage.—Anchorage A is for British warships, all other vessels are warned to anchor clear of them. Anchorages B thru E can be used by all other vessels with depths up to 15m.

Caution.—Buoys marking The Narrows can be displaced from position by heavy weather.

1.9 Murray's Anchorage, at the W end of The Narrows, is an extensive, largely unencumbered and comparatively deep water basin limited to the N by Three Hill Shoals and to the W and SW by Baileys Bay Flats. Vessels commonly anchor throughout the basin when unable to anchor seaward of The Narrows (e.g. because of heavy weather), or unable to enter Saint George's Harbour, or when awaiting berth at the oil terminal on Saint George's Island.

Anchorage berths are best seen on the chart.

Tobacco Bay, close WSW of Saint Catherine Point, is sheltered from all but W winds and conveniently available as a small boat landing for vessels at anchor farther out in the basin.

Esso Oil Terminal, distinctive because of its conspicuous silver-colored storage tanks, is about 2 miles SW of Saint Catherine Point. A pipeline pier extends offshore from the terminal for a distance of about 100m to the tanker terminal.

North Channel, the more indirect of the two inner passages between The Narrows and Great Sound, winds through the Bermuda Great Reef lagoon for a distance of about 12 miles. The Crescent, about two-thirds of the way from The Narrows, is a short reach wherein the channel shifts from a largely E to W direction then generally a N to S trend.

The Chimneys or Brangmans Spots, at the NE turn into this reach, is the shallowest part of the entire channel with a least depth of 11.6m.

White Flats, near the SW turn, is a shoal water patch through which the channel is dredged to a least depth of 11.9m.

North Channel is marked by aids which have been reported to be difficult to identify.

1.10 South Channel, the more direct passage to Great Sound but of lesser depth than North Channel, roughly parallels the NW side of Saint George's Island and Bermuda. It is about 9 miles long and has a least depth of 8.8m. Its reaches are quite clear and comparatively deep throughout while its reaches, for a distance of 6 miles between Tepping Shoals and Grassy Bay, are much encumbered and comparatively shoal.

Vessels intending to transit South Channel are commonly guided by charted aids to navigation.

Anchorage is prohibited due to submarine cables over much of South Channel, as may best be seen on the chart.

Grassy Bay is a small, unencumbered and relatively deep basin that lies in the immediate approach to the sunken ridge extending across the entrance to Great Sound. It has good anchorage, in 11 to 14.6m, marl, in a number of charted single anchor berths. During storm winds from the N, it is recommended that vessels anchor with a good scope of chain. Cruise ships anchor at this location.

Several anchorage berths, which are reserved for British warships, can best be seen on the chart.

1.11 Ireland Island Dockyard (32°19'N., 64°50'W.) (World Port Index No. 9950) is on the W side of Grassy Bay where, as the Bermuda Freeport, it comprises all of the South Yard of the former British naval establishment on the N part of Ireland Island. It includes the sheltered North Basin and South Basin. Portions of the South Basin is reserved for British naval use.

Ireland Island at North Breakwater

A cruise ship pier has been established on the outer side of North Breakwater, with a length of 300m and alongside depths of 10.4m.

An obstruction, with a least depth of 10.9m, lies about 0.3 mile NE of the North Breakwater Head.

North Basin and South Basin show generally charted depth of 5.1 to 9.0m. An obstruction is charted with a depth of 7.9m. A wreck is located at the N end of North Basin near a small craft marina.

Commercial Jetty, with a length of 243m and an alongside depth of 9.1m,handles bulk cement and provides bunkering for the Shell Company and is situated on the NW wall.

Great Sound and Environs

1.12 Great Sound is a spacious, almost landlocked bight in the S part of Bermuda Island formed by a series of connected islands and islets. These islands and islets continue in an arc around to Ireland Island.

Great Sound is obstructed in its entrance by coral heads and a sunken ridge that extends completely across from Ireland Island to Spanish Point.

A hilly promontory on Bermuda, and much encumbered within its area by several chains of islets which form Port Royal Bay, to the S and the approaches to Hamilton Harbor, to the E. Much of the SW part of the bight is clear, comparatively deep, and considered better hurricane anchorage than Hamilton Harbor.

Dundonald Channel, the principal passage dredged through the sunken ridge across the entrance to Great Sound, proceeds from Grassy Bay and continues SSW well into the bight with a least depth of 11.3m. Close inside the ridge, it branches to the ESE and continues as a dredged channel with a least depth of 8.2m as far as Two Rock Passage, the narrow cut with a least depth of 8.2m, dredged through obstructions blocking the approaches to Hamilton Harbor.

Anchorage.—Due to the existence of old mooring lines, anchorage W of **Stag Rocks** (32°18.8'N., 64°49.9'W.) or in the SW portion of Great Sound is not recommended.

Regulations.—Regulations which control navigation within Great Sound are:

1. Inbound vessels must wait for outbound vessels which, whether approaching or in either Dundonald Channel or Two Rock Passage, have the right of way until well clear and, to indicate this right, hoist their national flag.
2. No vessel should enter Dundonald Channel and Two Rock Passage if it cannot do so safely.
3. A vessel forced to anchor in or near the fairway must move clear as soon as possible.
4. Vessels may proceed at a speed greater than 10 knots, only if necessary for vessel safety.

Caution.—Vessels intending to transit Great Sound by way of the channels described above, are commonly guided by charted aids to navigation.

Caution is particularly recommended when in transit of Two Rock Passage where backwash from the shore may induce a sheer.

Hogfish Cut, close off Bermuda's SW extremity, and several other intricate passages available only to small craft with local knowledge, lead in from sea and through the Bermuda Great Reef to the interior lagoon.

No convenient deep-water natural channel exists. The Narrows, previously discussed in paragraph 1.8, is the only means of entry to the Bermuda Lagoon for ocean-going vessels.

1.13 Hamilton (32°18'N., 64°47'W.) (World Port Index No. 9960) lies in an inlet on the E side of Great Sound and includes all the waters extending to the E from Two Rock Passage at Point Shares. It is divided into two parts by White Island.

The outer, or W harbor, offers anchorage, while the inner, or E harbor, holds the berthing complex.

Hamilton is located on the N side of the harbor and is the governmental, commercial, and social capital of the islands.

Hamilton is the principal port of Bermuda. A channel leads from the open sea to Murray's Anchorage for ships with a draft up to 7.3m. Vessels then proceed along North Shore into Grassy Bay. From this bay, Dundonald Channel and Two Rock Passage lead into Hamilton itself.

There are 795m of quays with depths of up to 7.9m. Ro-ro vessels use Berth No. 7; container vessels use Berth No. 7 and Berth No. 8. The port has a range of facilities including minor ship repairs, bunkers, etc.

Depths—Limitations.—Container, ro-ro, and general cargo terminals are available. Berth information is given in the accompanying table titled **Hamilton—Berth Information**.

Anchorage.—Hamilton Harbor is not considered to be a good hurricane anchorage. The holding ground is good, but space is limited. In such circumstances, Great Sound is considered preferable.

Anchorage may be obtained in the West Harbor as required, in general depths of 5.1 to 16.7m, mud and shells. Vessels with drafts in excess of 7.9m must anchor in Grassy Bay or Great Sound.

Caution.—Numerous small craft, which may not be carry-

ing anchor lights, may be found in Hamilton Harbor, clear of the main fairway.

Little Sound (Port Royal Bay), in the S part of Great Sound, is a clear, comparatively deep-water basin somewhat sheltered throughout by surrounding landforms. The former U.S. Naval Air Station (Annex), Bermuda occupies most of the W side of the basin as well as all of the reclaimed land area extending along the N side.

Kings Point (32°16'N., 64°51'W.), not to be confused with the Kings Point, about 2 miles to the NNW.

A buoyed channel, with a least charted depth of 9.7m, is dredged through a sunken ridge joining Kings Point with the somewhat hilly and lightly-forested Grace Island.

A steep-sided relatively deep hole lies in the W part of the bay and the remarkable chimney of a private residence stands on Wilsons Island (Five Star Island) in the S part of the bay.

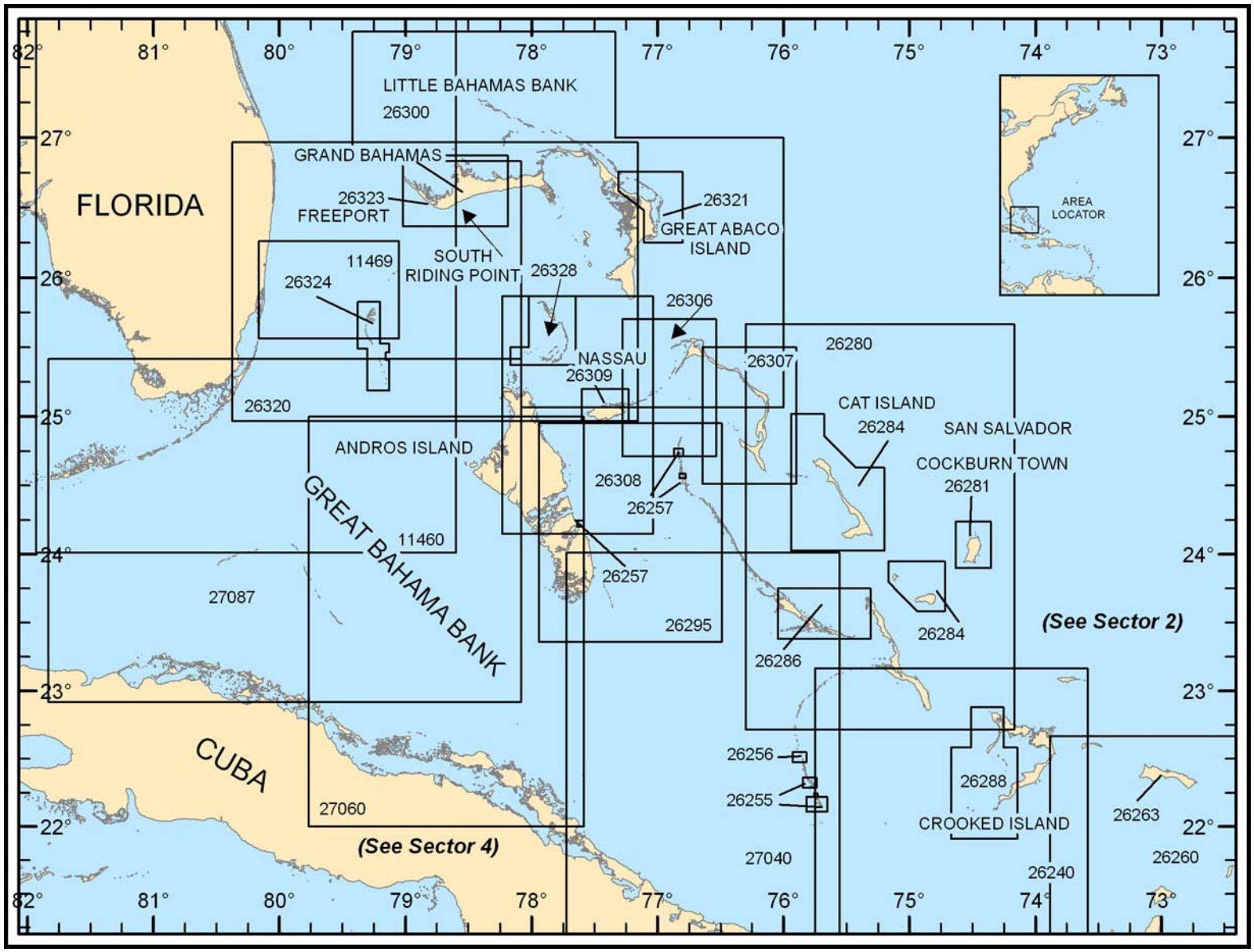
Vessels, having transited Dundonald Channel and intending to enter Port Royal Bay, should proceed so as to pass through the channel dredged between Kings Point and Grace Island and then continue on to destination.

Vessels commonly moor, under the direction of local authorities, to one of several buoys lying opposite the Naval Air Station.

A tender pier extends 150m SSE from the Naval Base, on the S side of Kings Point. On the E side of the pier a ship berths on dolphins in depths from 9 to 11m. On the W side there are depths from 6.7 to 8.8m alongside the pier.

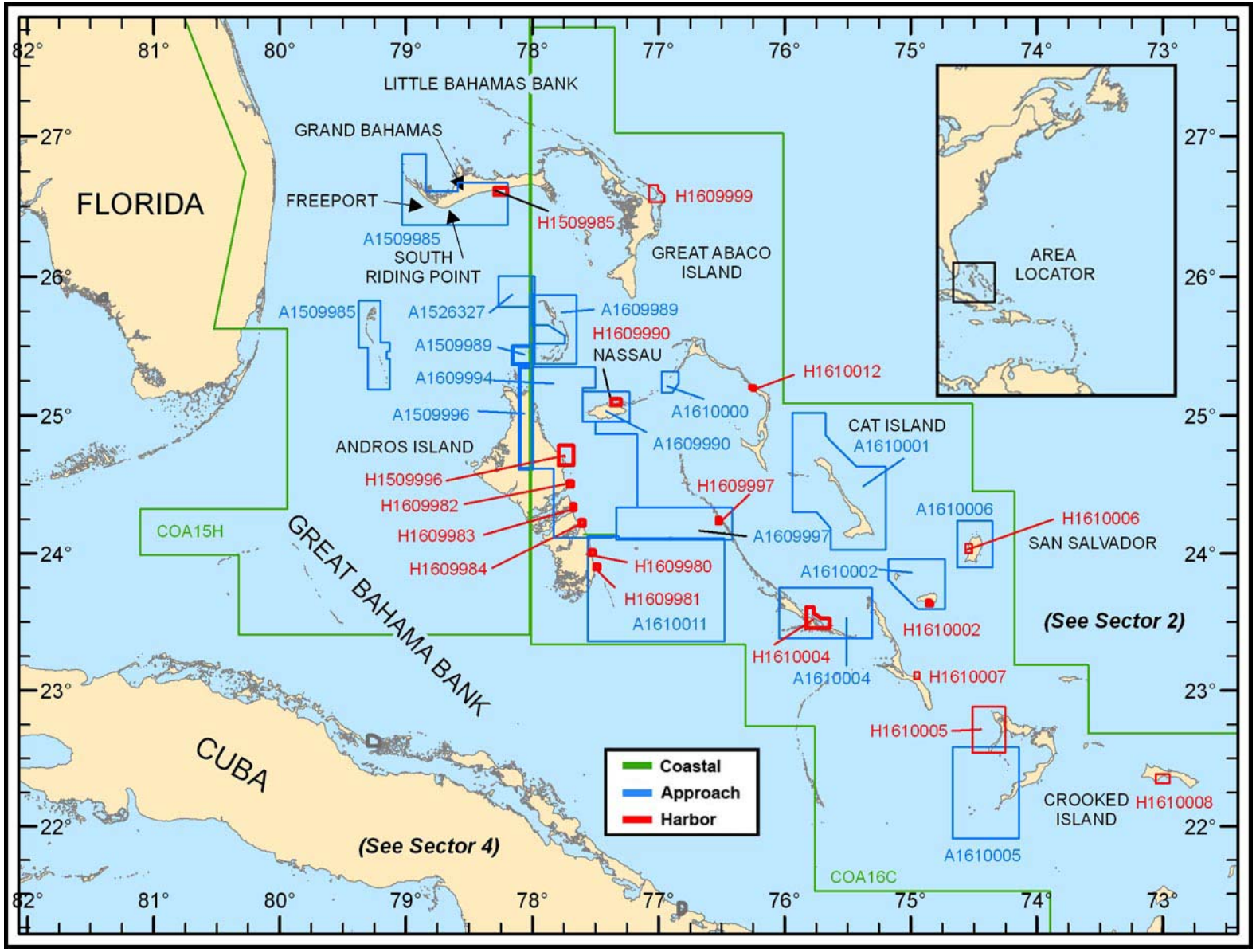
Hamilton—Berth Information

Berth	Depth	Maximum Vessel		Remarks
		LOA	Draft	
No. 1	8.5m	155m	7.9m	Cruise ships longer than 155m loa can be accommodated
No. 5/6	8.5m	192m	7.9m	Cruise ships
No. 7/8	8.5m	412m	—	Container, general cargo, and ro-ro



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

SECTOR **2** — CHART INFORMATION



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SECTOR 2 — DNC LIBRARY INFORMATION

SECTOR 2

THE BAHAMAS—WESTERN PART

Plan.—This sector describes the western part of the Bahamas and the several seamount plateaus in their continuation to the SE. The description is from Matanilla Shoal in the NW up to Crooked Island Passage in the SE.

General Remarks

2.1 The **Bahamas** (24°15'N., 76°00'W.) are a major portion of an archipelago of Atlantic Ocean above and below-water features; it is NE of Cuba and extends from Florida to Hispanola. Geographically, the islands extend about 575 miles from Matanilla Shoal, in the NW, to the Turks and Caicos Islands, in the SE, and continue to the W so far as to include Cay Sal Bank.

Geologically, they are continued from Turks Islands by a series of three seamount plateaux for a distance of about 155 miles SE to Navidad Bank. Politically, they are divided into an independent Commonwealth of the Bahamas and a dependent British Colony comprising the Turks and Caicos Islands.

The Bahamas are formed from calcareous matter derived from shells and coral and supported on extensive limestone plateaux physiologically related to Florida.

They have a total land area of about 5,386 square miles, distributed over some 700 islands and 2,000 cays and rocks which are grouped in large measure on Little Bahama Bank and Great Bahama Bank. Only a very small number of islands are inhabited.

The islands of the Commonwealth of the Bahamas extend from Little Bahama Bank, in the N, to Great Inagua Island, in the S, and commonly leshare in a low to hilly terrain substantially covered by vegetation.

New Providence Island is central to the island group and most important as the site of the capital of the Commonwealth, Nassau. Freeport, on Grand Bahama Island, along with Nassau, are the only deep-water harbors available in the Bahamas.

The Turks and Caicos Islands are low-lying for the most part and comparatively barren.

A number of deep-water passages transit the Bahamas and their extension SE. The passages are open and largely unencumbered seaways available to vessels proceeding between the Atlantic Ocean and the waters of the Gulf of Mexico and the Caribbean Sea. Pilotage is not required in these passages and nowhere compulsory except for a few designated areas within the Commonwealth of the Bahamas.

Winds—Weather.—The Bahamas, situated on either side of 25°N, lie within the area of direct NE trade winds influence. Since the N limit of the trade winds belt fluctuates seasonally between 25° and 30° N, the islands are effectively divided into a NW and SE grouping. The NW group of islands has E to SE winds in summer and NE and E winds in winter. Northers of diminished strength penetrate the area during the latter period.

The high temperature averages 33°C in July and August, and the low seldom is below 13°C in January and February. September is the wettest month, and December, January and March are the driest.

Fog is rare and visibility is poor on the average of less than 4 days a year.

The SE group has E winds in spring and summer and NE winds in autumn and winter. The average high temperature reaches 33°C in August and September and the low seldom falls below 18°C in January and February.

November is the wettest month; March is the driest. Fog is a rare occurrence.

Pilotage.—Pilotage is compulsory for non-exempt vessels at Freeport, Nassau, Douglas Road, Hanover Sound, Salt Cay Anchorage, and at South West Bay at New Providence Island; at Hatchet Bay at Eleuthera Island; and at Ragged Island where necessity allows entry without a pilot.

Pilots for the anchorages in the vicinity of New Providence Island may be obtained off the bar at Nassau, but vessels proceeding to South West Bay may make arrangements to board the pilot at Goulding Cay.

Caution.—Caution is recommended when navigating within and around the Bahamas.

The Bahamas abound in shoal water of a remarkable transparency which allows an experienced lookout aloft to assist in navigation by observing the subtle shift in water color over various types of sunken dangers and sea floor compositions. Mariners are cautioned in this regard to have the sun well overhead or astern, and to realize that passing clouds can cast a shadow that might very well conceal a sunken danger.

Passages Through the Bahamas

2.2 Deep-water passages through and around the Bahamas number more than a half dozen and, without exception, present no major difficulty to full-powered vessels. The significance of the individual passages is largely determined by destinations outside the Bahamas, such as the Straits of Florida and Windward Passage to the W and S, and the ports of the Mediterranean Sea, North Europe and the E coast of the United States to the ENE, NE and N.

The principal passages are Northwest Providence Channel, Northeast Providence Channel, Old Bahama Channel, Crooked Island Passage, and Turks Island Passage. The secondary passages are Mayaguana Passage, Caicos Passage, Mouchoir Passage, and Silver Bank Passage, as well as the passages between Silver Bank and Navidad Bank.

Northwest Providence Channel and Northeast Providence Channel lead between Little Bahama Bank and Great Bahama Bank.

Tides—Currents.—In the Atlantic Ocean approaches to Northeast Providence Channel, currents generally set NW, with rates up to 1.5 knots. In the Florida Strait approaches, the full set of the Gulf Stream requires compensation.

Within the channels, the currents are variable and usually weak. The main sets are NW and N, but occasionally NE in Northwest Providence Channel from February to April.

Directions.—From the E, vessels normally make for Hole in

the Wall, the remarkable feature associated with the S point of Great Abaco Island, and marked by Abaco Light.

Sail as safe navigation permits to a position about 8 miles S of Abaco Light, thence steer to pass about 6.5 miles N of Great Stirrup Cay, and 7 miles N of Great Isaac Light.

From Florida Strait, make for a position 12 miles NW of Great Isaac Light, and follow the above in reverse order.

Old Bahama Channel, a deep and comparatively narrow passage leading between the SW side of the Bahama Bank and the NE side of Cuba, is a convenient waterway for vessels transiting between the United States Gulf Ports and Puerto Rico.

See paragraph 4.25 for a description of Old Bahama Channel and the IMO-adopted Traffic Separation Scheme associated with it.

Other passages through the Bahamas will be described according to geographical location.

Caution.—The Bahamas have extensive areas of shoal conceded by some to be among the finest in the Western Hemisphere for the cruising of small boats, yachts, and other pleasure craft. Little Bahama Bank and Great Bahama Bank are particularly favored.

While these areas are appropriately described in their geographic sequence within the text, no detailed route descriptions for their transit are given.

Little Bahama Bank

2.3 Little Bahama Bank (26°55'N., 78°40'W.), the more N and smaller of the two major shoal water banks that support the bulk of the Bahamas, has its W side about 47 miles to the E of the U.S. mainland and its S side separated from Great Bahama Bank to the S by the deep seaways of Northwest Providence Channel and Northeast Providence Channel.

It comprises a large area of shoal water both inaccessible and dangerous to ocean shipping and includes Grand Bahama Island, Great Abaco Island, and Little Abaco Island as well as a multitude of lesser islets and cays of interest primarily to the yachting community.

Matanilla Shoal (27°21'N., 79°04'W.), the northwesternmost sunken danger on Little Bahama Bank, has a least charted depth of 3.5m over a bottom of singularly level rock covered by dark weeds. It is extremely dangerous in that it is isolated and near much frequented ocean routes, does not produce a distinctive discoloration in overlying water, and gives no indication of its presence by a breaking sea.

Little Bahama Bank's W side, between Matanilla Shoal and Grand Bahama Island, is steep-to and gives little warning to vessels making their approach from the offing.

Currents setting through the Straits of Florida strike it obliquely, particularly at White Sand Ridge which, lying sunken about 10 miles SSW from Matanilla Shoal but well visible from aloft, experiences an oblique current of 2 to 3 knots.

Memory Rock, marked by a navigation light about 17 miles farther S, is dark and barren and subject to the damaging effects of heavy seas. Vessels have grounded in the vicinity of this light.

A United States missile test area extends from the coast, N of latitude 27°N, within which missiles may impact.

Vessels transiting the area are warned by maneuvering U.S. aircraft prior to test initiation.

Grand Bahama Island (26°38'N., 78°25'W.), the principal land on the SW side of Little Bahama Bank and the fourth largest island of the Bahama archipelago, is generally quite low throughout, swampy in places, and largely covered by dense forests of pine trees. The bank of the N side, for its entire length, is an imperfectly surveyed, more or less continuous, series of mangrove swashes available only to small craft with local knowledge.

The area seaward of the S side rises steep-to and everywhere is fronted by a narrow margin of sunken dangers, except for the E third of the island where the near-shore area is lacking in detail. The W half of the island is considerably more populated than the E.

From Memory Rock to Settlement Point, several small cays are visible. Indian Cay, close aboard the NW extremity of Grand Bahama Island shows a light. It has been reported that there is no safe opening in the reef S of Memory Rock for vessels with a draft of more than 3.6m.

West End (26°41'N., 78°58'W.), a small community serving as the focus for a considerable tourist activity, is close E of West End Point (Settlement Point), the low rocky promontory at the W extremity of the island. Freeport Harbour, a deep-water port described below in paragraph 2.4, is about 16 miles to the SE.

Several elaborate small craft marinas indent the coast between Freeport and Bell Channel, about 7 miles to the E, while elsewhere as far as the E extremity of the island, the coast is largely without any particularly distinctive land features.

Caution.—Vessels should remain at least 4 miles offshore between West End Point and Freeport due to shoaling.

Freeport Harbour (26°31'N., 78°47'W.)

World Port Index No. 9985

2.4 Freeport Harbour, one of the two major deep-water ports in the Bahamas, is a fast developing resort area and bunkering port. The facility consists of an open roadstead fronting an inner harbor. A large petroleum refinery, fronted by two offshore berthing platforms, lies just SE of the harbor entrance.

Tides—Currents.—MHWN rise 1.1m, while MLWS rise 0.1m.

With frequent SE winds there is a strong onshore set between Gordon Cay and Pinder Point. Tidal currents in the approach to Freeport Harbour are weak, variable, and influenced by the prevailing wind.

Under exceptional circumstances, the current may reach a rate of 1.5 knots, parallel to the coast. An occasional, strong NW set has been reported close to the harbor entrance.

It has also been reported that a SW set may be experienced within the harbor basin, out of the Hawksbill Creek and across the W end of Basin 2.

Depths—Limitations.—The coast of Grand Bahama Island is fronted by reefs which extend several miles offshore.

Due to shoaling, vessels should remain at least 4 miles offshore between West End Point and Freeport.

The Bahamas Oil Refining Company (BORCO) operates two offshore jetties. A restricted area, 1 mile in radius, lies centered on the E end of No. 2 Jetty (BORCO Terminal). Addi-

tionally, an area 2 miles in radius, centered on the same point has been established The area between the two circles is a precautionary area.

Vessels should remain clear of the oil terminal and should not pass between the berths and the shore. No other vessels should enter the precautionary, or restricted area unless authorized to do so.

The channel to the harbor, which has a controlling depth of 14.3m, is 487m long and 152m wide. Freeport Harbour entrance channel is buoyed and marked by a set of range lights in alignment bearing 021°. Within the harbor, the channel opens into a turning basin, about 0.3 mile wide in an E to W direction, and about 0.3 mile wide in a N to S direction. The turning basin has depths of 14.3m. Vessels having a maximum draft of 13m may be safely maneuvered. For berthing refer to the **Freeport—Berth Information** table.

Freeport—Berth Information

Berth	Length	Depth	Remarks
Basin 1			
No. 1	218m	8.5m	Cruise vessels.
No. 2	107m	8.5m	Ro-ro.
No. 3	183m	8.5m	Cruise vessels.
Main Wharf			
No. 4/5	320m	9.1m	Cruise vessels.
Basin 2			
No. 6/ 7/8	366m	9.0m	Cruise vessels.
No. 9	—	—	Ro-ro ramp 45.7m wide.
No. 10	107m	9.1m	Containers and general cargo.
No. 11	293m	9.1m	BORCO Dock. Crude oil and fuel products.
Basin 4			
No. 12	280m	9.7m	BORCO Dock. Crude oil and fuel products.
No. 13	107m	9.7m	Tugs and work boats.
No. 14	186m	9.7m	Tankers and general cargo.
Basin 3			
No. 15	274m	9.0m	Bulk cargo.
No. 16	200m	9.0m	Cemex (Cement) project cargo.
No. 17	180m	9.0m	Bulk cargo.
Jetty No. 1			
No. 5 (West)	76m	24m	Petroleum products, distillates, diesel, gasoline, and crude oil.
No. 6 (West)	127m	26m	Petroleum products, distillates, diesel, gasoline, and crude oil.
No. 9 (East)	94m	20m	Crude and fuel oil.
No. 10 (East)	147m	28m	Crude oil and fuel products.
Jetty No. 2			
No. 7 (West)	71m	16m	Petroleum products, diesel, fuel oil, and gasoline.
No. 8 (West)	80m	17m	Petroleum products, diesel, fuel oil, and gasoline.
Grand Bahama Shipyard Ltd.			
North Beach	340m	18m	Vessel repair and maintenance. Heavy mooring facility.
East Beach	300m	28m	Vessel repair and maintenance.
Finger Pier	300m	15m	Vessel repair and maintenance.
Container Port (Hutchison Port Holdings)			
Nos. 1, 2, and 3	1,660m	15.5m	Post-Panamax vessels in excess of 8,000 teus.

Courtesy of Jarrod M. Kushla

Freeport—BORCO Oil Terminal

Courtesy of Gregory M. Dodds

Freeport—Harbor entrance

Aspect.—The entrance to Freeport Harbour can be identified well offshore by the refinery near Pinder Point. Freeport Light is a white tower with black bands shown just NW of Pinder Point.

A radio tower showing obstruction lights stands close E of the harbor entrance. Within a 1 mile radius of Pinder Point lie numerous tanks, flare structures, and chimneys painted red and white in bands.

A row of cement silos, showing red obstruction lights, stands at the NW end of the harbor.

Several conspicuous water tanks are visible and are best seen on the chart.

Pilotage.—Pilotage is compulsory for vessels of 500 gt and over.

Vessels requiring pilotage for the BORCO Terminal should send their ETA and draft 7 days (VLCCs only), 72 hours, 48

Courtesy of Jarrod M. Kushla

Freeport—Cement silos

Courtesy of Jarrod M. Kushla

Freeport—Container Terminal

hours, and 24 hours in advance through BORCO Marine. Vessels should contact the terminal at least 2 hours in advance.

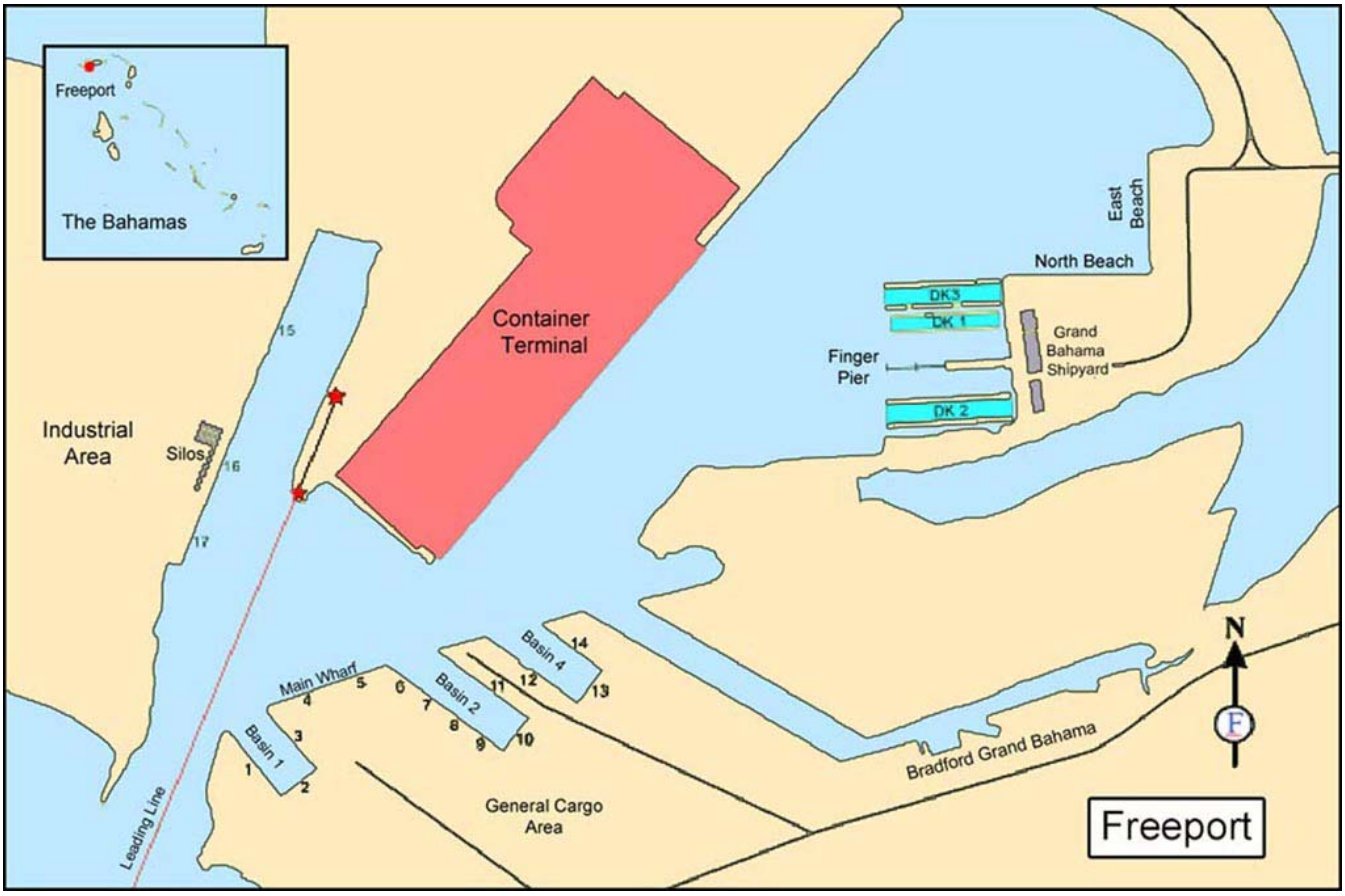
Vessels using Freeport should send their request for pilot at least 1 hours before arrival, 1 hour prior to departure, and 2 hours prior to shifts. Establish VHF contact when within range to amend or confirm the ETA. The pilot boards about 2 miles SW of the entrance channel breakwater.

A continuous watch is maintained by Freeport Harbour control tower.

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

1. Call sign: Freeport Pilots
2. VHF: VHF channels 11, 14, and 16
3. Telephone: 1-242-688-8506

Anchorage.—Anchorage is prohibited in the restricted area described above. Vessels may anchor about 1 mile W of the harbor entrance, in depths of 20 to 27m. The sea bed of sand and lime stone rock provides good holding ground.



Freeport Harbor

Vessels are urged to contact the local authorities and the pilot for anchorage information. Vessels should be prepared to vacate the area at short notice if the wind sets in from between SE and W.

Directions.—Due to shoaling, vessels should remain at least 4 miles offshore until permission to proceed is granted. Tankers waiting to berth normally remain about 5 miles offshore.

During daylight, vessels remain at least 4 miles offshore until SSW of the harbor entrance; vessels then proceed on the entrance range, or approach the oil berths on NNE course. At night, vessels should keep well within the white sector of Freeport Light.

Freeport Harbour should preferably be entered in daylight, but the oil berths are usable at any time.

The coast from Pinder Point to **Sweetings Cay** (26°35'N., 77°54'W.) is lined with several small craft harbors. Several conspicuous landmarks are visible, some of which are lighted.

Caution.—With SE winds, there is a landward set between Sweetings Cay and Gorda Point. The bight is dangerous with SW winds.

It is reported (2011) that new range lights have been established at the N end of Basin 3 and that the existing lights and associated range line have been discontinued. Also, the channel marks at the entrance to the outer harbor have been changed. Mariners are advised to navigate with caution in the harbor vicinity.

2.5 Great Abaco Island (26°28'N., 77°05'W.), together with its fingerlike extension Little Abaco Island, is the principal land area on the E side of Little Bahama Bank and ranks as the second-largest island of the Bahama archipelago. It is heavily forested in many areas and mostly low-lying throughout, particularly on the bank of W side.

On the E side, a more or less continuous highland ridge rises to a height of about 30m for a distance of about 42 miles, between the S extremity of the island and Marsh Harbour, the administrative center for and the largest community on the island.

Southwest Point, the S extremity of Great Abaco Island, and Hole in the Wall, a natural arch in a low, flat, and rocky finger of land about 2 miles ENE, are on either side of a narrowing peninsula which, having an uneven and barren appearance from the offing, rises steep-to except for a shoal water bank of coral and sand extending about 5 miles to the SE.

Abaco Light, close N of Hole in the Wall, is reported radar conspicuous at 22 miles.

Southwest Point has anchorage close offshore to the W, in 18m, sand and seaweed, in a position with Abaco Light bearing 075°, distant 3 miles. Hole in the Wall has anchorage for small vessels with local knowledge, in 7.3m, in position with Abaco Light bearing 000° and the extremity of the Hole in the Wall

finger of land bearing 078°.

Riding Point Terminal (26°36'N., 78°13'W.)

World Port Index No. 9987

2.6 Riding Point Oil Terminal (South Riding Point Oil Terminal) is situated about 30 miles E of Freeport Harbour and consists of a sea island structure about 0.5 mile offshore, as well as a dredged basin for smaller vessels.

Winds—Weather.—The prevailing winds are from the SE. During the winter months, numerous cold fronts transit the area producing a predictable veering of the wind to the SW, then N with the passage of the front. A strong frontal system may raise a swell up to 3m, but these quickly subside following the passage of the front.

Tides—Currents.—The average LW is reported to be 0.5m below datum, while the average HW has been reported to rise 0.8 to 1.5m. Currents in the vicinity of the sea island have been reported to seldom exceed 1 knot, and to run predominantly E and W.

Depths—Limitations.—The sea island structure is fitted with a doppler sonar docking system. The system uses a variety of displays to indicate distance off the berth and speed of approach. Current and meteorological instrumentation are also fitted.

Berth No. 1, the outer berth has a length of 450m, depths alongside of 30m, and can accommodate vessels up to 315,000 dwt with an LOA of 375m, maximum draft of 28m.

Berth No. 2, the inner berth, has a length of 450m, a depths alongside of 25.0m, and can accommodate vessels up to 150,000 dwt with an LOA of 275m, maximum draft of 23m.

Both berths have self-leveling gangways.

Two inner harbor berths are Layup berths only and are for vessels that do not exceed 205.7m loa and 10.9m draft. A set of range lights, in line bearing 340°, marks the dredged channel.

The terminal has been expanded to handle clean and dirty products in addition to crude oil. There are eight large tanks available for products storage.

The largest vessel accommodated was reported to be of 500,000 dwt with a maximum draft of 27.5m.

Aspect.—A conspicuous dish antenna is located in position 26°37.5'N, 78°18.0'W. The buff-colored oil tanks behind the sea island are conspicuous.

Pilotage.—Pilotage for the terminal is compulsory to the sea island and the inner berths, which is performed by Berthing Masters. Vessels should forward their ETA to the local authorities on leaving the last port of call, and 72 hours, 36 hours, and 24 hours prior to arrival.

Vessels should also establish contact via VHF channel 16 when within 3 miles of the port. Tugs and pilots can be contacted on VHF channel 73 and terminal oil operations on VHF channel 74.

The loading master will board about 2 miles S of the sea island, but may meet the vessel at another location specified by the pilot.

Regulations.—Information on terminal regulations should be obtained from the berthing master at or before the transfer conference. Dirty ballast reception facilities are not available; therefore, vessels should arrive with clean ballast. Vessels with non segregated ballast systems discharge the water ashore.

The sea island terminal is equipped with a sacrificial anode protection system to guard against galvanic corrosion. Vessels with an impressed voltage cathodic protection system are requested to turn it off while in the vicinity of the terminal.

Vessels are also required to fly the Bahamian national flag, and International Code flag Bravo. The terminal fire signal is a continuous sounding of shore sirens.The port is closed during heavy weather from the SE through SW when wind speeds exceed 20 knots.

Contact Information.—The South Riding Point Riding Terminal can be contacted, as follows:

1.	Call sign:	South Riding Point Control
2.	VHF:	VHF channels 16 and 74
3.	Telephone:	1-242-348-4471
		1-242-348-4474
4.	Facsimile:	1-242-353-4573
5.	Telex:	297-30047
		297-30067

Anchorage.—Vessels should contact the terminal operators for information on anchorage grounds and instructions. Temporary anchorage is available in the charted area W of the sea island, and is marked by East Buoy, Mid Buoy, and West Buoy.

Vessels up to 100,000 dwt anchor between and on a line connecting the buoys, in charted depths of 19.5 to 31m, over a bottom of sand, soft coral, and limestone, with good holding ground. Vessels should be prepared to move on short notice, especially in periods of onshore winds, and should not attempt to anchor E of East Buoy.

Vessels wishing to wait offshore should remain W of the W radio mast in position 26°36.6'N, 78°22.0'W.

2.7 The Abaco Cays, seaward of Great Abaco Island and Little Abaco Island, extend along the E and NE sides of Little Bahama Bank for a distance of about 102 miles between **Lynyard Cay** (26°20'N., 77°00'W.), to the SE and Walkers Cay, to the NW.

They consist of a more or less continuous chain of largely elongated low-lying islets interspersed with a multitude of above and below-water rocks which, for the most part, are situated some 2 to 4 miles within the shoal water areas inside the edge of the bank and are largely inaccessible to ocean shipping.

Elbow Cay (26°32'N., 76°58'W.), the E of the Abaco Cays and one of the first landfalls encountered by vessels making for Northeast Providence Channel from the NNE, has its N extremity in the form of high, sandy bluff.

Elbow Cay Light, reported radar conspicuous at a distance of 14 miles, stands in the N part of the island and on the W side of a small landlocked shoal water basin.

Hope Town is on the E side of the basin.

Pelican Harbour (26°23'N., 76°59'W.), about 7 miles SSW of Elbow Cay, is one of the few deep water sheltered pools within the Abaco Cays accessible to ocean vessels. A former timber-loading station and currently a nature preserve, the basin is entered from sea through North Bar Channel with the aid of two privately-maintained white beacons in line bearing 290°.

The channel is obstructed by a bar which, having a least charted depth of 4.9m, breaks during strong E winds and becomes particularly hazardous when an E swell is running

Elbow Cay Light

against an ebb or flood current. It is recommended that vessels enter just before high water slack.

Walker Cay (27°16'N., 78°24'W.), at the NW extremity of Abaco Cays, is a small scrub-covered inhabited islet unique in that it is the N islet of the Bahama archipelago. The N part of the archipelago, the above-water Jump Off Rocks, is 1 mile farther NW.

Great Bahama Bank—West Side

2.8 The W side of Great Bahama Bank, between Great Issac in the N and Cay Santo Domingo, some 320 miles to the SE, describes a more or less regular arc of a circle that bulges to the SW in its approach to the NE coast of Cuba and delimits, where it falls off with comparative abruptness to depths of several hundred meters, a vast area of shoal water largely unnavigable by ocean vessels but open to transit by small craft, particularly in its N and reaches.

Land areas, aside from Andros Island, the W side of which is low-lying, marshy, and without maritime significance, are small and, with but few exceptions, are clustered to the N in the vicinity of the Bimini Islands. Cay Sal Bank is separate and farther W.

Great Isaac (26°02'N., 79°05'W.), near the NW extremity of Great Bahama Bank, is a small, low lying barren islet surmounted by a lighthouse reported to be radar conspicuous at 10 miles.

It extends to the ESE for a distance of about 29 miles by a narrowed scattering of above and below-water dangers of which Gingerbread Ground is considered the principal sunken hazard on the N side of Great Bahama Bank.

Tidal currents are strong in the vicinity of this hazard.

Anchorage.—Great Isaac has anchorage, according to wind and sea conditions, either close NNW, in 13m, or to the SSE, in 7.3 to 9.1m. Strong ENE and WSW winds cause the anchorages to become untenable, while at times a fresh S wind blowing during a N swell creates conditions in which landing on either side of the islet is impossible.

Safe anchorage with good holding ground was reported, in about 25m, NW and N from Great Isaac, distant 5 miles.

A depth of 16.5m was reported 6.5 miles NNE of Great Isaac.

Several shoals have been reported to lie up to 8.5 miles N of Great Isaac Light.

2.9 The **Bimini Islands** (25°44'N., 79°15'W.), about 48 miles E of the U.S. mainland, are on the NW edge of Great Bahama Bank and in the N part of a scattering of islets and cays extending some 35 miles between the small black North Rock, in the N, and South Riding Rock, in the S.

The Bimini Islands consist of North Bimini Island and South Bimini Island; the islands are low-lying, sandy, flat, and wooded, and are separated by a shallow and frequently shifting channel that leads to a shoal water harbor area with extensive facilities primarily of interest to the yachting and small boat enthusiast.

Alice Town, a small community near the SW extremity of North Bimini Island, is an administrative center and hub for one of the world's best known big game fishing areas.

North Bimini Island has charted anchorage seaward of its W side. South Bimini Island has anchorage for small vessels with local knowledge, in a charted depth of 8.2m, in a position with Bimini Island SW extremity bearing 045° and Round Rock (S of South Bimini Island) bearing 169°.

Between South Bimini Island and Ocean Cay, about 17 miles SSE, the several elongated, wooded, and somewhat elevated islets Gun Cay, North Cat Cay, and South Cat Cay provide a number of anchorages and small harbors primarily for the accommodation of pleasure craft with a draft of less than 3.7m. Tidal currents in this area tend to set directly onto and off Great Bahama Bank.

2.10 **Ocean Cay** (Sandy Cay) (25°25'N., 79°13'W.) is the site of a significant exploration by private effort of extensive submarine deposits of aragonite (a form of limestone) and consists of a largely man-made above-water area some 200 acres in extent.

The approach channel is about 1 mile long and has been dredged to 12m deep. It is marked by six buoys and terminates at the turning basin. The turning basin is located just S of the channel. Vessels are loaded here and there are reported depths of 7.8 to 10.6m. A set of range lights, in line bearing 075°, has been reported to mark the channel.

Vessels approaching Ocean Cay from the N or NW, generally stand well off Great Bahama Bank W side until abeam Gun

Cay, then they haul SSE and make for the buoys at the entrance to the channel leading to Ocean Cay berthing facility.

When approaching from the S, they similarly stand well to sea until South Riding Rock can be identified, then they proceed with caution to the channel entrance.

Pilotage.—Pilotage is compulsory and is provided by the company Port Director.

South Riding Rock (25°14'N., 79°10'W.), near the S extremity of the cays and islets extending N and S from the Bimini Islands, is low-lying, sparsely covered with brushwood, and marked by a navigation light of significance to vessels proceeding along the NW reaches of the W side of Great Bahama Bank.

Several anchorages are charted to the S, ESE, and E of the light.

South Riding Rock to Cay Santo Domingo

2.11 The W and S sides of Great Bahama Bank, for a distance of about 290 miles between S Riding Rocks and Cay Santo Domingo, drop off from shoal depths to depths well over 200m within the space of a few miles and tend to bulge to the SW such that, in their approach to the NE coast of Cuba, they form one of the confines to the deep and clear, but comparatively narrow Old Bahama Channel. Several islets and sunken dangers lie on or near this plunging edge.

Orange Cay (24°57'N., 79°09'W.), about 17 miles S of South Riding Rock is quite barren, rising about 3.9m above sea level and marked by a mast with an observation platform which, when approaching from the W or S, can be mistaken for the light on South Riding Rock.

A vessel found good anchorage, in 14.6m, in a position about 1.5 miles W of Orange Cay's S extremity.

Guinchos Cay (22°45'N., 78°07'W.), about 160 miles SSE of South Riding Rock, is a low-lying sparsely scrub-covered islet of sand and bleached dead coral. It has anchorage, in about 7.4m, in a clear area about 1.5 miles to the W.

An offshore platform was under construction about 14 miles WNW of Guinchos Cay.

2.12 **Cay Lobos** (22°23'N., 77°35'W.), about 110 miles WNW of Cay Santo Domingo, is low-lying, rocky, and marked by a navigation light which, with its lighthouse reported radar conspicuous at a distance of 12 miles, is of significance to vessels in transit of Old Bahama Channel.

The anchorage is in 9.2m, with the light bearing 114°, distant 0.5 mile.

Diamond Point, about 20 miles SE of Cay Lobos, is the sunken SW extremity of Mucaras Reef which, marked by dark coral and grass, rises steep-to on the E side of the SE entrance to Old Bahama Channel.

In an emergency, vessels anchor in 9.2 to 11m, sand, anywhere over a bank extending NW from Diamond Point and Mucaras Reef for a distance of about 10 miles to the nearly awash E extremity of Labanderas Reef.

Diamond Point and Mucaras Reef are considered extremely dangerous to vessels transiting the S reaches of Old Bahama Channel, because each rises steep-to in its deep-water approaches and is sunken in shoal depths in a position largely out of convenient range of all landmarks, with the possible exception of Cay Lobos Light.

Cay Santo Domingo (21°43'N., 75°45'W.) is a small low-lying islet, marked by a light, located at the S extremity of Great Bahama Bank, as well as at the extremity of an underwater peninsula which everywhere along its flanking periphery rises steep-to from the depths, particularly to the S.

Several sunken and nearly awash dangers are charted between Cay Santo Domingo and Diamond Point, about 90 miles WNW.

2.13 **Cay Sal Bank** (23°50'N., 80°05'W.) is an isolated and comparatively-extensive shoal water area in a somewhat central position with Santaren Channel separating it from Great Bahama Bank W side, with Nicholas Channel setting it apart from the NE coast of Cuba, and with the Straits of Florida dividing it from the U.S. mainland and the Florida Keys.

It is roughly in the form of a triangle and has a number of above-water land areas scattered along its edges, save along its S or Nicholas Channel side, where a cursory examination has reported the existence of numerous rocky heads.

Tides—Currents.—The height of the tide and direction of current are influenced greatly by the wind. In general, the tidal current sets onto the bank from all directions on the flood tide, and off on the ebb. Near Double Headed Shot Cays, the tidal currents are rotary.

In Santaren Channel, a current of moderate or low constancy flows NW at about 0.7 knot, joining the Florida Current at the channel's NW end.

In Nicolas Channel, a weak current generally sets W or NW, but an E or SE current may encroach into the channel's W end.

2.14 **Cay Sal** (23°42'N., 80°25'W.), in the SW part of Cay Sal Bank and the only inhabited land area, is about 1 mile long. It consists of an approximately circular low-lying islet which, rising to a narrow range of sand hills on its NE side, has in its interior portions a large salt pond commonly replenished by heavy wind-driven seas that broach the islet along its SW side.

It is covered with stunted palm trees and marked by several buildings standing on its W side. Anchorage is available, in 12.8m, sand, in a position charted close W of the islet where the play of tidal and ocean currents can be considerable. It was observed that the current sets generally SE through the anchorage at a velocity of up to 2 knots.

Double Headed Shot Cays extend as a group of elongated islets from South Elbow Cay in the SW, to Water Cays in the NE, and are in a position on the NW side of Cay Sal Bank where the Florida Current, in its course E and N through the Straits of Florida, usually sets close offshore at full strength. North Elbow Cay, the highest of the islets, is marked by a disused conical stone lighthouse, 17.7m high.

Vessels, with the wind from WSW through N to NE, anchor, in 9.2 to 11m, SE of Elbow Cay, with the disused lighthouse bearing between 315° and 338°.

With the wind from E thru S to SW, they anchor in similar depths, sand, in a position close NW of the islet, with the disused lighthouse bearing about 137°.

Anguilla Cays, near the SE extremity of Cal Say Bank, consist of several elongated scrub-covered sandy islands which, swampy near their S end, are marked here and there by stunted palm trees.

The N end of Anguilla Cays is marked by a beacon, 5m high. The islands are reported radar conspicuous at 12 miles.

A heavy surf breaks along the NE side of the islands and the channels through them are reported to be narrow and shallow.

The anchorage to the SW is reported to be good, with depths of 11 or 12.8m.

A stranded wreck lies about 47 miles W of Anguilla Cays.

Great Bahama Bank—Central Part

2.15 The central part of Great Bahama Bank comprises the area in and about Tongue of the Ocean and includes the Berry Islands, the E side of Andros Island, and the islands and islets, including New Providence Island, ranging along the SE side of Northeast Providence Channel.

Tongue of the Ocean (24°00'N., 77°20'W.), sometimes abbreviated TOTO, is a remarkable submarine canyon leading in from the open sea by way of Northeast Providence Channel, forms a deep elongated cul-de-sac having comparatively steep-to sides and an exceptionally flat bottom over the greater part of its length.

The bulk of the water mass within the canyon shares largely in the multiple characteristics of the oceanic water outside in the Atlantic Ocean, with the notable exceptions of a singular transparency and a generally sluggish circulation.

Because of its location, configuration, depth, water properties, and stable conditions, Tongue of the Ocean may be characterized as a small model ocean having many of the advantages of the larger bodies of water with few of their disadvantages.

2.16 The **Berry Islands** (25°35'N., 77°45'W.), on the W side of Northeast Providence Channel and N of the seaward entrance to Tongue of the Ocean, consist of 30 larger islands and a number of lesser islets lying scattered along Great Bahama Bank's N side in the form of an open loop extending from the low and quite rocky Little Stirrup Cay in the N, to Blackwood Bush, charted as two small cays about 21 miles SSW. The islands are wooded, comparatively low-lying, and of primary interest to ocean shipping only when in transit of Northwest Providence Channel and Northeast Providence Channel.

Tidal currents run strongly and set directly in and out of the openings between the islands.

Great Stirrup Cay, the northernmost of the Berry Islands, is marked by a navigation light with the lighthouse reported radar conspicuous at a distance of 16 miles, and by a United States tracking station radio tower which, rising to a height of 61m close WNW of the navigation light, is reported visible at a distance of 18 miles.

Vessels anchor in moderate weather and during prevailing E winds, in about 12.8m, white sand, with the navigation light bearing 137°, distant about 1.3 miles.

Great Harbour Cay, the largest of the Berry Islands, lies fronted to the E by a small grouping of islets and several off-lying sunken dangers which require caution in their approach.

Bullocks Harbor, a modest community and local fishing center, is on the W side of the island and adjacent to an elaborate marina and resort complex which is reported to be of interest primarily to the small boat and yachting enthusiast.

Small craft make their approach to Bullocks Harbor and the neighboring marina from the N, commonly by way of Great Harbour.

Between Great Harbour Cay and Chub Cay, 20 miles to the S, the Berry Islands continue in a series of smaller islands of which a number are privately owned.

Little Harbour Cay, about one-third of the way along the arc, is somewhat higher than neighboring islands and thickly covered with vegetation and coconut palms. The cay also shows a light. The island is sparsely inhabited and has a well-sheltered small craft basin on its W side, reported one of the finest in the Berry Islands.

2.17 **Crab Cay** (Thompsons Cay) (25°25'N., 77°54'W.) forms with Frazers Hog Cay, the largest island complex in the S part of the Berry Islands, and one of the principal landfalls for small craft in their transit of Great Bahama Bank between Tongue of the Ocean and the Bimini Islands.

Chub Cay (25°24'N., 77°54'W.) is a port of entry. The marina entrance channel has a depth of 2.1m. Leading lights in line, bearing 035°, lead into the channel.

A distinctive 61m high water tower stands on Chub Cay, where it is reported to be visible at about 15 miles.

An open roadstead between Frazers Hog Cay and Bird Cay, an extensively developed and privately-owned islet close SE, has good anchorage sheltered from NE gale winds, in 7.3m, sand and coral, about 1 mile W of Bird Cay W extremity.

It is recommended that vessels making their approach from the W pass seaward of the above-water rocks lying about 2.5 miles W of Bird Cay.

Between the Berry Islands and Andros Island, Tongue of the Ocean forms a bight extending about 17 miles N to S.

Caution.—Several submarine cable areas exist off Andros Island, and may best be seen on the chart.

2.18 **Andros Island** (24°40'N., 78°00'W.), the largest of the Bahamas, is along much of the W side of Tongue of the Ocean, where it is fronted by a more or less continuous barrier reef which falls away steeply on its offshore side and largely blocks free access to an intervening and much encumbered shoal water margin on its onshore side.

The island is low-lying, extensively covered by forests of pine and hard woods (e.g. mahogany, lignum vitae), and inhabited primarily along its E coast. Its central portion is drowned in swamps and under a network of very shallow waterways, of which some may be followed from one coast to the other by small boats with adequate local knowledge.

Morgans Bluff (25°10'N., 78°02'W.) is a remarkable rocky headland which shows a light. A harbor was under development S of the bluff.

Nicolls Town (25°08'N., 78°00'W.), near the NE extremity of Andros Island, is a small community and the administration center for both the Andros Island and the Berry Islands. Range lights, in line bearing 223.75°, lead through the reef at Bethel Channel.

Mastic Point, a modest settlement close SSE, is the site of a small privately-owned commercial basin for the use of small craft calling in support of timber and farming activities under development nearby.

Andros Town (24°43'N., 77°47'W.) is at the entrance to the somewhat extensive Fresh Creek and within an area under de-

velopment for the tourist trade. Atlantic Undersea Test and Evaluation Center (AUTEC) Andros Island, has its base station about 1.5 miles to the SE. The area is restricted. A number of lights are also shown within the area.

2.19 Salvador Point (24°30'N., 77°43'W.), about 14 miles SSE of Andros Town, and the SE extremity of Big Wood Cay, about 10 miles farther SSE, are sites of two AUTEC auxiliary stations. Submarine cables extend from the stations. Each is fronted by a turning basin and approach channel dredged to the accommodation of small boats only. Bristol Galley, is an above-water rock about 2.5 miles NNE of Salvador Point.

Mangrove Cay (24°15'N., 77°39'W.), the administrative center for Andros Island, is a small settlement lying close W of the NE entrance to South Bight, the S of the waterways leading through the middle portion of the island.

Golding Cay, in the entrance to South Bight, is the site of a conspicuous AUTEC auxiliary station, fronted by submarine cables, best seen on the chart.

Bastian Point (Victoria Point), the N entrance point of South Bight, has fair anchorage, in 22m, with Golding Cay's W side bearing 169° and Flat Rock bearing about 222°.

2.20 Kemps Bay (24°03'N., 77°33'W.), a small community about 10 miles SSE of South Bight, is the administrative center for the S part of Andros Island.

Deep Creek, about 4 miles to the SSE, and High Point Cay, an off-lying islet about 6 miles farther SSE, are sites of two AUTEC auxiliary stations. Each is fronted by a turning basin and approach channel dredged to accommodate small boats only. A cable area fronts the station.

Tongue of the Ocean's S part has the form of a submerged amphitheater with its W edge largely defined by an elongated scattering of islets extending from Andros Island.

The E side of its entrance is marked by the heavily wooded islet Green Cay, while its S rim is serrated by a series of ridges which form the limits of many channels leading onto the S reaches of Great Bahama Bank.

The channels are navigable by small vessels with local knowledge, but tidal currents are of such strength that navigation is not recommended at night.

Tongue of the Ocean has many testing and cable areas as well as a 2 mile wide surface transit lane.

The SE side of Northeast Providence Channel extends in a gentle arc for a distance of about 56 miles between Bridge Point, the N extremity of Eleuthera Island, and Clifton Point, the W extremity of New Providence Island and the E entrance point of Tongue of the Ocean.

A more or less continuous chain of lesser islands and islets lies between Eleuthera Island and New Providence Island.

Several navigable channels transit this chain and lead into an extensive and comparatively deep lagoon lying just within Great Bahama Bank.

2.21 Egg Reef is the dangerous, sunken N edge of a somewhat broad, shoal water coastal bank extending N and E from Eleuthera Island. Several elongated, rounded, and rather wooded islets are just S of the reef and extend from Saint George's Cay, in the E, for a distance of about 8 miles to Egg Island, in the W. A light is displayed from Egg Island.

Pierre Rock, 8m high and an excellent radar target at 16 miles, is about 0.5 mile N of the NW end of Saint George's Cay.

Spanish Wells, a small community near the E extremity of Saint George's Cay, is reached by a small boat channel passing either S and thence ENE of Egg Island, or S through the winding fairway leading between Saint George's Cay and Eleuthera Island.

Egg Island has anchorage, in 14.6m, poor holding ground, with Egg Island Light bearing 025°, distant about 1 mile. A heavy swell usually sets into the anchorage.

Caution.—Less water than charted has been reported in the vicinity of Egg Island.

2.22 Fleeming Channel (Six Shilling Channel) (25°16'N., 76°56'W.), about 21 miles SW of Eleuthera Island's N extremity, is a comparatively-deep passage which, entered between the rounded Six Shilling Cays and Six Shilling Channel Light, about 2 miles SW, leads in from Northeast Providence Channel. There is a least depth of 8.2m in the fairway of the entrance, with lesser depths in the near vicinity. Tidal currents set across the inner reaches of the channel at a rate of 1 to 2 knots.

Caution.—Vessels are advised that the channel is dangerous. Transit is recommended during the middle of the day when the tide is rising, winds are light, and the weather forecast is favorable. A wreck, partially above-water, lies about 0.3 mile N of Six Shilling Channel Light.

2.23 Douglas Channel (25°09'N., 77°06'W.), the principal access to Shoe Hole Road and Douglas Road (Cochrane Anchorage) from Northeast Providence Channel, is entered about 12 miles ENE of New Providence Island's E extremity through an intricate and much-encumbered passage leading between Booby Island (Booby Cay), to the NE, and Rose Island, to the SW; two beacons are located at the E end of a reef extending from the E end of Rose Island. They also mark the W side of Douglas Channel.

Temporary anchorage is available as charted in the seaward approach to the channel. Pilotage is compulsory, with the pilot boarding off the entrance to Nassau Harbour, New Providence Island.

Shoe Hole Road, a somewhat encumbered basin immediately inside the entrance to Douglas Channel, has anchorage, in 7.4 to 9.2m, over a holding ground of poor quality. During strong N winds, vessels are advised to exercise caution for dragging anchor.

Douglas Road (Cochrane Anchorage), a seldom-used basin to the S and W of Douglas Channel, has convenient anchorage in its W part, in a charted position with Potter Cay (in Nassau Harbour) bearing 285° and almost in range with Fort Montague, East End Point Light bearing 253°, and Porgee Rocks Light bearing 291°.

2.24 New Providence Island (25°02'N., 77°24'W.), on the E side of the conjunction of Northeast Providence Channel with Tongue of the Ocean, is one of the smaller islands of the Bahamas, having a surface area of only 58 square miles, but is far and away the most important in that it is inhabited by well over one-half of the entire population of all the islands and is the site of the Commonwealth capital, Nassau.

The island is extensively forested with pine scrub and largely low-lying throughout, particularly along the S side where the coast becomes swampy and fronted by shoal water flats extending well onto Great Bahama Bank.

An almost uninterrupted ridge of forested hills rises just inland of the N coast. The N side of the island is fronted by a shoal water coastal margin which, extending for the most part about 1.5 miles offshore, constitutes a foundation for several off-lying scrub-covered elongated low-lying islets in its E portion and an almost unbroken chain of sunken and awash dangers in its middle and W portions.

Hanover Sound (25°05'N., 77°16'W.), about 3 miles N of New Providence Island E extremity, is a comparatively deep-water break in the coastal margin entered between Salt Cay and a sunken spit advancing NW from Rose Island Rocks.

A conspicuous tower standing near Salt Cay E extremity serves as a landmark for the entrance. Vessels make their approach from Northeast Providence Channel and, steering for the quarantine house on Athol Island, proceed so as to pass NW of Chub Rock Light.

Pilotage is compulsory.

Vessels enter and anchor, in 7 to 7.3m, sand and grass, with Rose Island Rocks bearing 045° and Salt Cay's extremity bearing 341°. The anchorage is good during prevailing weather conditions, but subject to a moderate surge during adverse conditions from the N.

Elsewhere along the N side of New Providence Island, with the exception of Nassau Harbour described below in paragraph 2.26, anchorages on the coastal margin are available only to small boats able to negotiate intricate shoal water passages leading through a multitude of sunken dangers.

Clifton Bluff, about 1.5 mile SE of Goulding Cay at the W extremity of New Providence Island, rises in the vicinity of a 1 mile-long line of white cliffs which, falling away precipitously into the sea, are the only place along the entire coast of the island where depths of over 200m are found less than 0.2 mile offshore.

Clifton Pier, about 0.5 mile farther ESE, has depths of 3.7m alongside and facilities for the landing of passengers from cruise ships which, unable to enter Nassau Harbour because of adverse weather conditions, proceed to Clifton Bluff for shelter.

2.25 Clifton Pier (25°00'N., 77°33'W.) (World Port Index No. 9995), an oil import terminal about 1.7 miles SE of Goulding Cay at New Providence Island's W extremity, consists of submarine pipeline leading offshore to a central platform flanked by dolphins which form a berth aligned NW to SE in a depth of 11.6m. It was reported that the berth would accept vessels with maximum draft of 11m.

Pilotage.—Pilotage is compulsory for vessels calling at the Clifton Bluff area. Pilots board off Clifton Pier; not less than 24 hours advance notice is required.

Anchorage.—Vessels anchor as charted SE of the offshore oil terminal, in 14m sand, good holding ground. The front range beacon of the 076° range was reported to be destroyed. A stack lies about 0.5 mile N of the beacons.

Anchorage is also available farther SE, in 9.2m, in South West Bay, with Clifton Bluff bearing about 322°, distant 1.5 miles.

Nassau (25°05'N., 77°21'W.)

World Port Index No. 9990

2.26 Nassau is one of the major deep-water ports of the Bahamas and port of call for cruise ships. It is the capital of the Bahamas and the pivotal point of all traffic and commerce in the islands. Nassau Harbour lies on the N side of New Providence Island, bounded N by Silver Cay, Paradise Island, and Athol Island; E by a line forming the E extremities of Athol Island and New Providence Island; and W by a line extending S from the W end of Silver Cay to New Providence Island.

This natural harbor has been deepened in its W part through dredging and improved in its principal or W entrance by the construction of sheltering breakwaters.

The harbor entrance channel between Paradise Island Light and Silver Cay West Breakwater is well buoyed and straight forward and most of the largest passenger vessels are able to enter and berth alongside.

Paradise Island Light

Part of the channel is used by seaplanes, as seen on the chart.

Nassau is an important center for cruise vessels and has 11 berths for this purpose, including those extending from the finger pier which has dock space for four cruise liners. In bad weather, cruise ships proceed to the SW anchorage at Clifton Pier.

Winds—Weather.—The Nassau Marine Operator broadcasts on VHF channel 27 the latest weather information every even hour and on request. Vessels unable to enter the harbor proceed to Clifton Pier.

Tides—Currents.—MHWS rise 1.3m, while MHWN rise 1.2m.

Tidal currents run E on the flood, W on the ebb, and usually flow at rates of about 1 knot, but may run at a greater strength at times.

During the flood current, it has been reported that a strong W set exists outside the harbor but an E set exists inside the basin. This has been attributed to the ocean currents drawing water out of the basin and around the E end of Paradise Island.

The flood current sets N off the Cruise Pier; the ebb current sets onto Prince George's Wharf.

Approach to Paradise Island

Arawak Cay—West Breakwater

Three culverts passing under the arm connecting the Cruise Pier and Prince George's Wharf allow the tidal current to flow through the basin. For berthing information refer to the Nassau Berthing information Table.

Depths—Limitations.—The entrance channel, entered between the breakwaters, is dredged to a depth of 11.6m. A turning basin at the SE terminus to the entrance channel is dredged to depth of 11m, and contains the main cargo and passenger wharves.

A side channel to Arawak Cay is dredged to a depth of 8.2m. There is a wharf, about 0.2 mile in length, with an alongside depth of 8.2m.

Eastern Channel, which runs from the turning basin, past Potter Cay and the yacht facilities, is suitable for vessels with a draft of 3m, but shows greater charted depths.

Two bridges, with a maximum vertical clearance of 21m, span the channel from Potter Cay to Paradise Island.

See table titled **Nassau—Berth Information** for details of berthing accommodations.

Pilotage.—Pilotage is compulsory and is available 24 hours. Vessels should send ETA at least 48 hours in advance and contact the pilot station (call sign: Nassau Harbor Control) 2 hours prior to arrival. The pilot boards about 2 miles N of the Paradise Island breakwater entrance.

Regulations.—Permission is required to enter port, depart,

Nassau—Berth Information

Berth	Length	Depth	Remarks
Union Wharf	255m	5.4m	General cargo and containers.
John Alfred	141m	5.1m	General cargo and containers.

Nassau—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Prince George (north)	369m	10.9m	Cruise vessels.
Prince George (south)	332m	10.9m	Cruise vessels.
Cruise pier	366m	10.9m	Cruise vessels.
Arawak Cay			
Arawak Cay	350m	8.2m	Bulk, container, and inter-island ro-ro.
Clifton Point			
Cargo Jetty	30m	—	General cargo.
Clifton Pier (Sea Island) Exxon/ Mobil	285m	10.5m (draft)	Petroleum products. Can accommodate vessels up to 45,000 dwt, with an loa of 192m and a beam of 67.0m.
Bahamas Gas Jetty	—	3.7m	—

or move within the harbor.

Signals.—When the port is closed due to bad weather, a red flag will be displayed at the W end of Paradise Island by day. During dangerous entry conditions at night the color of the Paradise Island Light is changed to red. If sea conditions during the day permit vessel entry but not departure of boats from the harbor, a white flag is displayed at the flagstaff on the W end of Paradise Island.

Vessels may anchor in the vicinity of the pilot station where the water depth permits.

Hurricane signals are hoisted at the lighthouse and at Fort Fincastle. In the event that the storm is assessed to affect New Providence Island, a second flag, red with yellow stripes, is hoisted below the normal red flag with black square center.

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

1. Call sign: Nassau Pilots
2. VHF: VHF channels 14 and 16
3. Telephone: 1-242-322-7982
   1-242-322-7983
4. Facsimile: 1-242-322-9784
5. E-mail: office@nassauharbourpilots.com
6. Web site: http://www.nassauharbourpilots.com

Harbor Control can be contacted, as follows:

1. Call sign: Nassau Harbor Control
2. VHF: VHF channels 5, 9, 14, 16, and65
3. RT Frequency: 2126,2 kHz, 2082.5 kHz, and 2522 kHz
4. Telephone: 1-242-323-3191
5. Facsimile: 1-242-322-5545

The harbor tugs can be contacted on VHF channels 6 and 14.

Anchorage.—Anchorage just off Nassau Harbor extends over an area N and E of the W end of Paradise Island, to approximately 0.5 mile offshore where the water depth is too great.

Temporary anchorage for vessels not entering harbor may be obtained, in depths of 14m or deeper, about 0.1 mile N of the E breakwater light. This area is usable in S winds. Strong winds from the N to NE require use of an anchorage near Clifton Bluffs off the SW tip of New Providence Island.

Caution.—Small craft anchorages, mooring cables, submarine pipelines and cables, and sea plane landing areas are located in various areas of the harbor as may best be seen on the chart.

Cruise Ship Piers from W

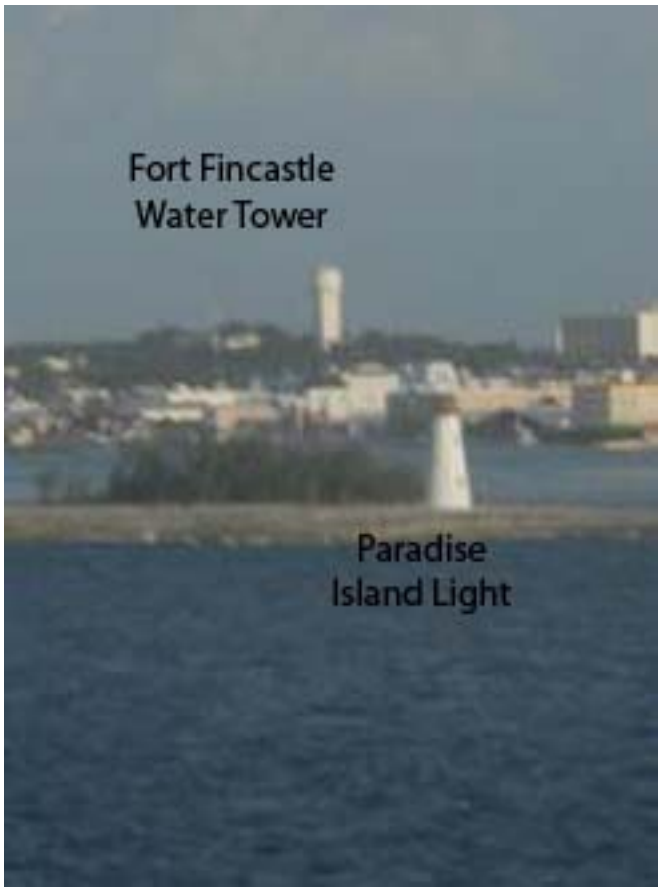
It is reported (2011) that dredging has taken place in the Nassau harbor and buoys may not be as charted. Mooring dolphins are reported to exist approximately 100m from the ends of the Cruise and Passenger piers. Mariners should navigate with caution and contact the local authority for the latest information.

Great Bahama Bank—East Side

2.27 The E side of Great Bahama Bank, between Eleuthera Island N extremity and Cay Santo Domingo some 235 miles to the SSE, is distinctive because of two large deep-water indentations which, sweeping well into the bank from the open sea, are bordered throughout by a more or less continuous chain of elongated islands, islets, and cays.

Exuma Sound, the N indentation, groups Eleuthera Island to the N and the Exumas to the W. Long Island is between the two indentations, while the Ragged Islands and their continuation N front the W side of the S indentation.

Eleuthera Island, Great Exuma Island and Long Island, the largest land forms in the area, are among the most notable of the Bahamas in that they are generally higher and more hilly;



Paradise Island Light and Fort Fincastle Water Tower

Paradise Island from W

their soil also supports significant agriculture and livestock operations.

The lesser islets around Exuma Sound are used by pleasure craft, while those isolated islets around the indentation S of Long Island are mostly without any particular interest.

British Colonial Hilton Hotel from NW

Nassau—151.6° Approach Range

2.28 Eleuthera Island (25°10'N., 76°14'W.), the N and largest of the islands on the E side of Great Bahama Bank, has its low-lying extreme N portion divided from the rolling hills constituting its major and considerably-elongated S portion by Glass Window, a large square notch which, interrupting a precipitous terrain in the narrowest part of the island, is particularly conspicuous from the E and W.

The soil is fertile in several areas and supports agricultural and livestock activity. The E or windward side is largely reef-fringed, while the central portion of the W or leeward side is abrupt and fronted close up by a comparatively deep-water lagoon which may be entered by small vessels with local knowledge from either Northeast Providence Channel or by way of an intricate passage close W of Powell Point, the N extremity of the SW side of the island.

A current, with a strong SE set, may sometimes run close off Eleuthera Island NE side, particularly after N to NW winds, and thus counter to the prevalent NW set of the current farther

Nassau Pilot Boat

Nassau Harbor Approach

Crystal Cay Marine Observation Tower from NE

offshore.

Dunmore Town (25°30'N., 76°38'W.), one of the oldest communities in the Bahamas, is on the W side of Harbour Island, a low-lying partially-wooded offshore land area close SE of Eleuthera Island's N extremity. A radio mast, marked by an obstruction light, stands in the middle part of Harbour Island.

Small vessels with local knowledge make their approach either from the N, by way of an intricate passage leading close off Eleuthera Island's N extremity, or from the open sea by way of South Bar, the passage of Harbour Island. The least fairway depth is 4.3m; the tidal currents are strong, a swell is always present, and the sea frequently breaks.

Vessels bound for Dunmore Town by way of the passage S of Harbour Island, steer for South Baron on a heading of 214° and proceed so as to keep to the N side of the fairway. They conveniently anchor in East Harbor, just inside South Bar, in 7.4m, with Harbour Island W side bearing 350° and South Bar entrance point bearing 014°.

Hatchet Bay and Governors Harbour are small communities on Eleuthera Island's W side. The former is an outport for livestock and poultry, while the latter is the administrative center for the island. Levi Island, small and narrow, has its S end about 0.5 mile W of the N entrance point of Governors Harbour.

Miller Anchorage (24°39'N., 76°12'W.), on Eleuthera Island's SW side, has good anchorage in prevailing winds for small vessels, in 12.8m. It is recommended that vessels prepare to leave this anchorage should the winds shift to the W.

Patches of 9m, 11m, and 13m lie about 5 miles N of **Eleuthera Point** (24°37'N., 76°09'W.), the S extremity of the island.

2.29 The Exumas (24°00'N., 76°20'W.) are those islands and islets extending in uninterrupted series for a distance of about 130 miles along the entire W side of Exuma Sound between Eleuthera Island in the N and Long Island to the S. They are conveniently divided into a N and S grouping.

Exuma Cays, the N grouping, consist of a multitude of small, sparsely-populated islets which, scattered along the very edge of Great Bahama Bank where it drops off abruptly into Exuma Sound, exhibit a wide variety in size and disparate character ranging from the low-lying barren sand to rolling hills and dense vegetation. Many of the islets are privately owned and all are primarily of interest to yachting and small boat enthusiasts.

Tidal currents are strong in the several passages leading from the sound onto the bank; anchorages for ocean vessels are severely limited in number, in depth, and in swinging room.

Great Exuma Island and Little Exuma Island, the S grouping, are by far the largest of the Exumas. They are comparative ly hilly along the NE or Exuma Sound side and low and swampy on the SW or bank side. The soil is fertile and supports livestock and agriculture activity.

2.30 George Town (23°31'N., 75°46'W.), the administrative center for the Exumas, is on Great Exuma Island where it fronts on a largely shoal water basin or lagoon that is formed and somewhat sheltered to the NE by the wooded and off-lying

Stocking Island, together with the several islets of its continuation to the NW and SE. Small vessels, with local knowledge and a high tide, may proceed to George Town from the NW by way of West Channel.

Larger vessels, with a draft no deeper than 4.6m, commonly enter from the SE by way of Three-Fathom Channel and proceed as far as Elizabeth Harbor or the dredged pool charted close NW.

Long Island (23°15'N., 75°06'W.), the E of the islands on the Great Bahama Bank E side, differs from the other islands in the Bahama archipelago because of its rolling hills, bold headlands, and high cliffs. The soil is quite fertile and there is considerable activity in agriculture and livestock.

Cape Santa Maria, the N extremity of Long Island and marked by a light, is a comparatively bold conspicuous headland extended several miles seaward by sunken dangers which break in heavy weather and remain difficult to detect during calm weather.

It is recommended that vessels keep well seaward and pass at a distance of not less than 5 miles off the cape.

Long Island's E side is bold and. between Cape Santa Maria and Clarence Town (about 43 miles SSE), is particularly inhospitable in that cliffs front on a narrow rock-strewn coastal margin which, dropping away abruptly to ocean depths, are exposed to the effects of a usually prevailing heavy sea. This stretch of the coast has not been closely examined and should be avoided.

2.31 Clarence Town (23°06'N., 74°58'W.), the administrative center for Long Island, is a small community fronting shoal water, which is poorly sheltered in general, lies with its entrance open to winter winds, particularly those from the N.

Larger vessels anchor outside the entrance, in 18.3m, about 1 mile N of Harbour Point, the W entrance point of the harbor and clear of the submarine cable.

The harbor can accommodate a few vessels with drafts of not more than 4m with local knowledge; being open to the NNW, it is much exposed during the winter months. A pilot is advised and is available.

Two churches, each with two spires, are prominent. One stands 0.4 mile SW of Harbour Point; the other stands about 0.5 mile WSW of Harbour Point.

South Point, the S extremity of Long Island, is very low and difficult to make out. It is recommended that vessels proceed with caution and identify the conspicuous white cliffs close NE; the 76m high radio mast close N; and Majors Hill, a remarkable 46m high sharp peak about 5 miles to the N.

Long Island's W side fronts on the shoal waters of Great Bahama Bank and is of interest only to the small boat and yachting enthusiast. The SW side changes to a series of irregular lagoons and salt pans that front on a comparatively-broad coastal margin having good anchorage during prevailing E winds.

The best anchorage and the one most convenient to Clarence Town, on the opposite coast, has depths of 12.8 to 14.6m, coral and weed, SW of the small boat facility Galloway Landing, and with Stephenson Rock bearing 303°, distant about 4 miles.

The Ragged Islands, together with a more or less continuous line of islets and cays to the N, form a remarkable, near semicircular chain of islands extending along the very edge of Great Bahama Bank E side for distance of about 90 miles, from the middle of the side of Long Island generally S to Columbus Bank.

2.32 Jumentos Cays (23°08'N., 75°30'W.) consist of a chain of low-lying narrow islets considered by local authority to be between barren Nuevitas Rock and the distinctive Water Cay, about 22 miles WSW. Pear Cay Pass, entered about midway along the islets between No Bush Cay and Pear Cay, is the entrance to an intricate channel which, available to small craft with local knowledge, leads to Tongue of the Ocean.

Between Jumentos Cays and the Ragged Islands, about 50 miles to the S, several access channels lead onto Great Bahama Bank and thence W to Old Bahama Channel by way of a passage which, available to small vessels with local knowledge, has charted depths of 7.3 to 9.2m.

Man of War Channel, the N and deepest, has a least depth of 7.3m; Nurse Channel, the middle access, has a least charted depth of 5.8m; Raccoon Cut, the southernmost access, is available to vessels with a draft no deeper than 3.6m.

Ragged Island (22°12'N., 75°44'W.) and Little Ragged Island, with a combined surface area of only about 5 square miles, are windswept, largely barren, and alternately hilly and swampy. Duncan Town, the administrative center for these islands under discussion, is on Ragged Island.

Ragged Islands Anchorage (22°09'N., 75°44'W.) is close W of Little Ragged Island. It has good anchorage, in depths of 6.1 to 6.7m, sand, clear of two rocky patches, with Little Ragged Island S extremity bearing 097° and Point Wilson on Ragged Island bearing 004°.

2.33 Columbus Bank is between the Ragged Islands and Cay Santo Domingo, the southernmost extension of Great Bahama Bank, and continues E about 30 miles to Cay Verde as a comparatively broad and much encumbered gigantic spit or semi-plateau rising steep-to from ocean depths.

The N side of this bank is free of dangers for a distance of 15 miles E of Little Ragged Island, with depths of not less than 12.8m, except for a 9.1m shoal 6 miles to the SE.

Farther E, there are a number of heads, with depths of less than 5.5m, on the very edge of this bank, but S of these heads, there are depths of not less than 11m, clear white, coral sand. The NE end is encumbered with rocky heads and is very dangerous.

Cay Verde (22°00'N., 75°11'W.), near the E side of Columbus Bank, is a small scrub-covered narrow islet, low-lying on its N side, but rising to a 22m high hill on its S side.

The W side of the islet has anchorage, in about 12.8m, but the area is not recommended during strong breezes because at such times a heavy swell sets around each extremity of the islet and thereafter into the anchorage.

Off–lying Islands

2.34 The several islands off the E side of Great Bahama Bank, specifically those in the seaward approaches to Exuma Sound, include Cat Island and Conception Island.

They are generally without significance to ocean vessels and are somewhat outside the areas more frequently visited by pleasure craft, yet they are unique in at least two respects.

Cat Island, in this regard, is considered to be the highest of all the islands in the Bahamas archipelago and was also thought to be the first land of the New World sighted by Christopher Columbus. San Salvador Island, the island farthest to the E of Exuma Sound, is now generally acknowledged to be the first landfall sighted by Columbus on October 12, 1492.

Cat Island (24°20'N., 75°30'W.), largest of the islands fronting Exuma Sound and with a maximum elevation of 122m near its NW end, highest of all the Bahamas, is quite hilly, somewhat forested with trees of pine, cedar and mahogany, and by repute, the single most fertile island of the entire archipelago for the growing of tropical fruit.

The population numbers several thousand distributed among half a dozen or more small communities. Arthurs Town, in the N, and The Bight, in the S, are administrative centers.

Cat Island's NW extremity is radar conspicuous at 12 miles. The E side of the island, for the greater part of its length, is bold, rocky, and steep-to, though the area has not been closely examined.

The S side has several remarkable bluffs between Columbus Point, the SE extremity of the island, and Hawks Nest Point, the low and sandy SW extremity.

The W side is fronted by a broad and somewhat encumbered shoal water coastal bank which extends between Hawks Nest Point and Little San Salvador, to the N.

Small vessels with local knowledge anchor as convenient throughout the bank during calm weather and prevailing wind conditions.

2.35 Little San Salvador (Little Island) (24°34'N., 75°56'W.) is a thickly-vegetated hilly islet which, rising around a large interior shoal water lagoon, is about midway along submarine ridge joining Cat Island's N extremity with Eleuthera Island's S extremity.

The passage over the ridge to the W of the islet, and thus into Exuma Sound from the N, is considerably conditioned by shoal depths and sunken dangers so that the transit in deepest water is closer to Little San Salvador than Eleuthera Island. The passage over the ridge to the E of the islet is not recommended.

West Bay, close SE of Little San Salvador extremity, has reportedly excellent anchorage for small vessels over a good holding ground of hard sand. It is sheltered from all but SW to NNW winds which send in swells.

Conception Island is the smallest and S of the islands fronting Exuma Sound. Ocean currents in their offing commonly set NW, while closer in they tend to combine with tidal currents so that resultant flow, particularly near Rum Cay, is often quite variable in set and strength.

Between the two islands, the set is commonly strong and to the NW, although a SW set may occur as well as an opposite one to the NE, especially after N winds.

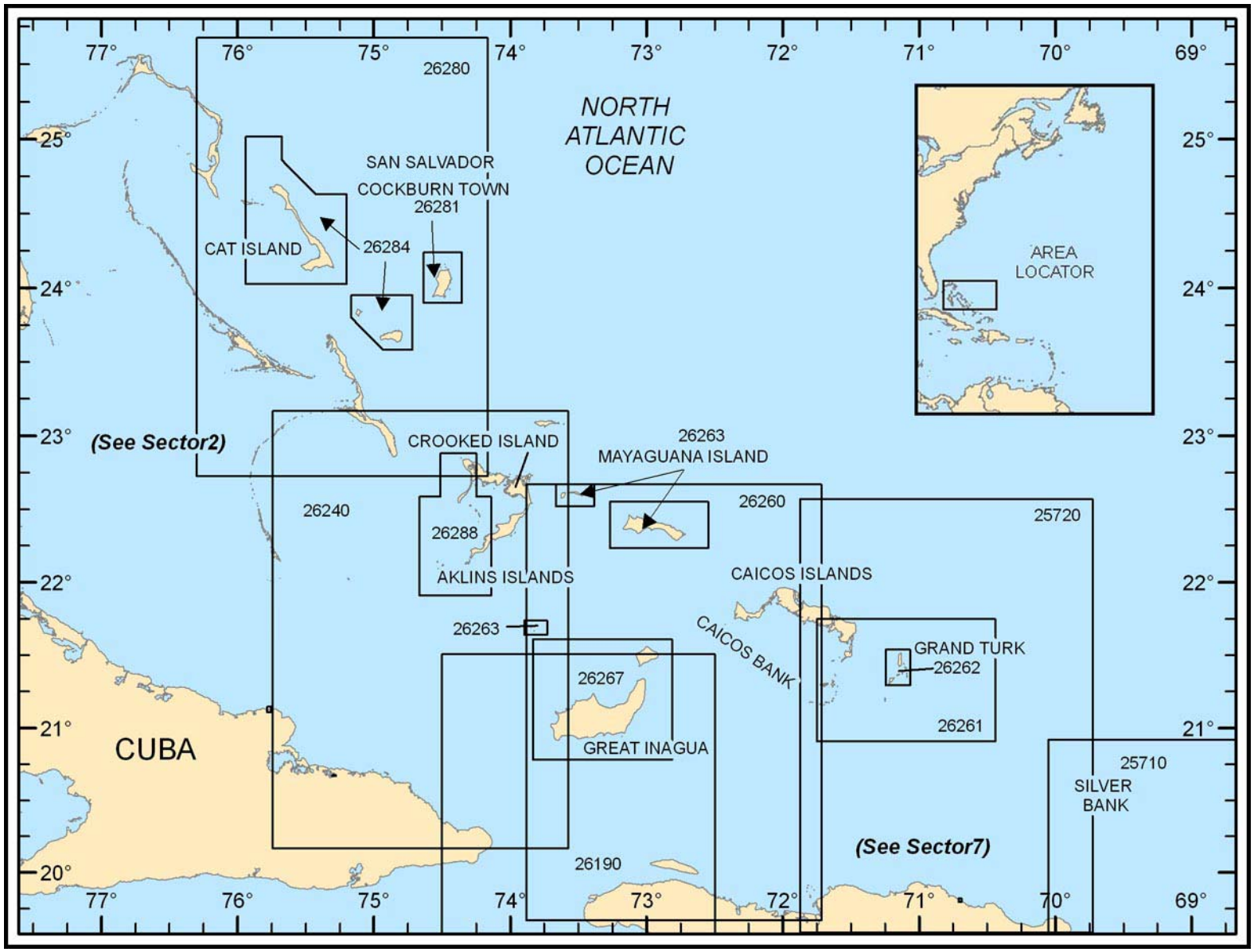
2.36 Conception Island (23°50'N., 75°07'W.) is hilly and scrub-covered. Wedge Point, its S extremity, is a conspicuous white bluff. The island is uninhabited, steep-to on its W side, and fronted everywhere else by a comparatively broad margin of imperfectly-charted foul ground.

Approach from the E is dangerous in that, even by day, the dark rocky heads of the foul ground are difficult to distinguish from deep water.

Conception Island's NW side has good anchorage, in 11m, clear white sand, about 0.3 mile offshore and with West Cay bearing due N, distant about 1 mile. Closer inshore, the bottom becomes foul.

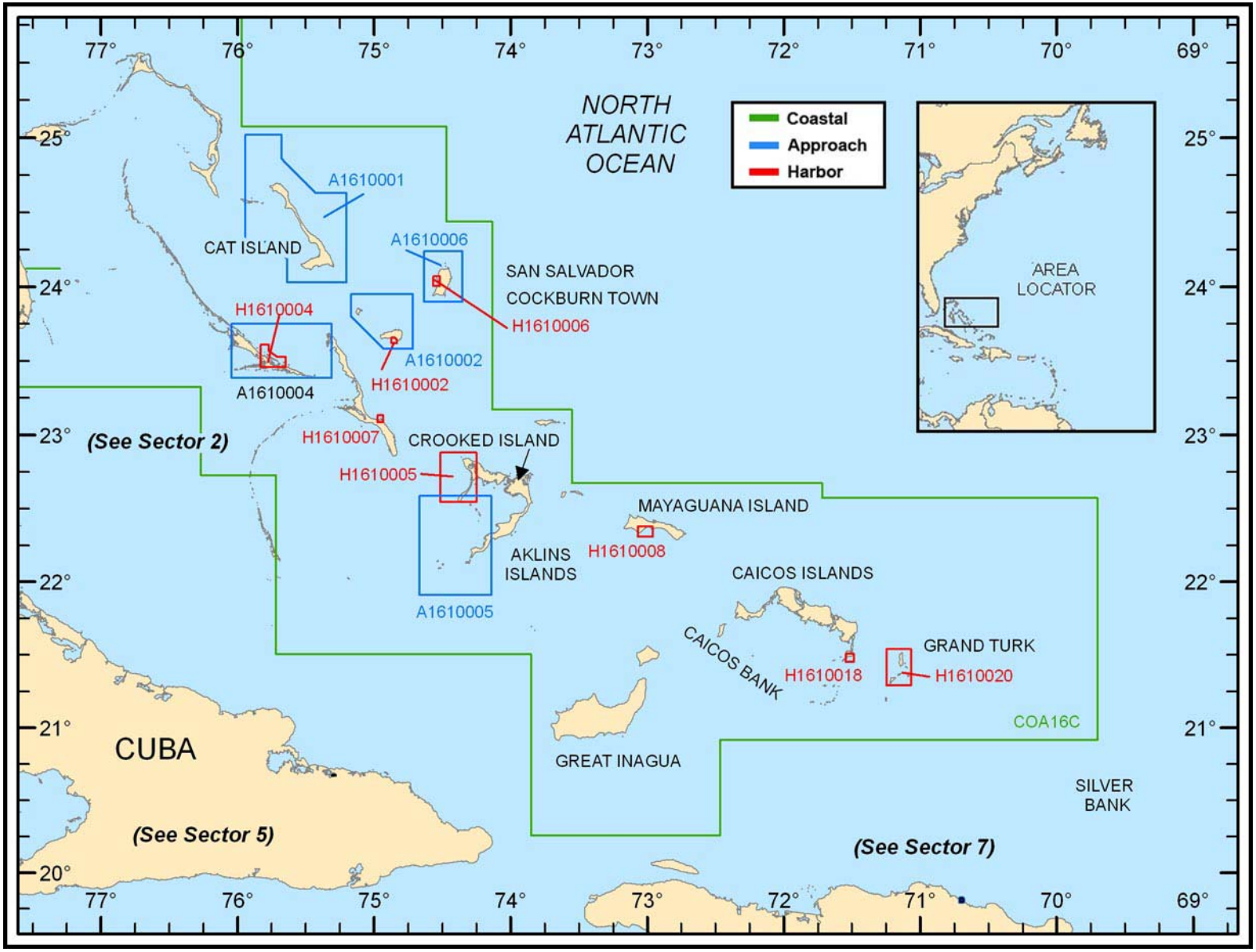
The anchorage is sheltered from winds between NNE and SSE through E.

Southampton Reef, some of which uncovers, extends about 4 miles N of Conception Island. A partially-submerged wreck is at its N extremity. The depths E of Southampton Reef are irregular.



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 16 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 3 — DNC LIBRARY INFORMATION

SECTOR 3

THE BAHAMAS—EASTERN PART

Plan.—This sector describes the eastern part of the Bahamas, from San Salvador Island to Navidad Bank, the E seamount of the Bahamas, including the Turks and Caicos Islands. The description is from W to E; passages in the area are discussed from N to S.

General Remarks

3.1 See the General Remarks topic in paragraph 2.1 for information pertaining to the Bahamas.

San Salvador Island

3.2 San Salvador Island (24°02'N., 74°30'W.), the E of the islands fronting Exuma Sound and the commonly conceded first landfall by Columbus, is reef-fringed throughout, destitute of natural harbors, and characterized by a remarkable interior terrain consisting of a series of widely scattered, interconnected salt water lakes separated by ridges of hills no higher than 43m.

Offshore, the E approaches to the island are imperfectly examined, so it is recommended that ocean vessels remain outside the 200m curve. The W approaches, though more closely surveyed, lead in over a sea floor that slopes up with comparative abruptness to a more or less continuous coastal margin of sunken dangers.

Recommended anchorage is reported off Cockburn Town, about 0.2 to 0.3 mile SW of the light. The approach should be from the SW to avoid anchoring in the cable area. It was further noted that the anchorage had level bottom, coral, average depth 12.8m, allowing a swing circle almost totally outside the 10m curve. From this anchorage, it is a relatively short distance by small boat to the marina.

Because of the characteristics of the bottom, the mariner should ensure the anchor is holding fast as the prevailing winds will swing W and SW without warning.

Aspect.—There is a red mast and light located in position 24°03'N, 74°32'W near the landing place at Cockburn Town. Two range beacons, 27m apart and in line bearing 024°, lead into the landing.

Confusing to the mariner from the offing is a marina constructed about midway between Riding Rock Point and Cockburn Town; here likewise is a set of ranges to the approach of this new small boat facility. This range is reported to be about 075°, but the lighted markers are unreliable.

Riding Rock Point (24°04'N., 74°32'W.) is located 2 miles N of Cockburn Town. There is an airfield at Riding Rock Point and numerous buildings and radio masts stand close to the point. Conspicuous are some tanks painted in red and white checks from which fixed obstruction lights are shown. These landmarks are located 0.3 mile SE of the point.

San Salvador Light, standing on Dixon Hill on the E side of the island, is a convenient aid to vessels making for Crooked Island Passage, by way of San Salvador Island's E side.

San Salvador Light on Dixon Hill

The light is largely obscured to vessels attempting to pass W of the islands. A conspicuous red and white checkered water tower is about 1.25 miles NNW of the light.

3.3 Rum Cay (23°40'N., 74°53'W.), the Santa Maria de la Concepcion of Columbus, is largely low-lying and flat throughout, except for a few rolling hills that approach the shoreline in remarkable white bluffs. The NW extremity of Rum Cay forms a low point, but a projection 1.5 miles E has a flat rock, 9m high, at its outer end.

A dangerous sunken reef extends 2 miles N from the NW extremity. A wreck is stranded on the N edge of the reef.

Sumner Point, the S extremity, is backed by one such bluff that is radar conspicuous at 10 miles. The W end of the island is low and sandy and has temporary anchorage during prevailing E winds for vessels with local knowledge, in 12.8m.

The S side of the island is fronted by the somewhat encumbered bight Saint George Bay which, in its turn, is fronted to the S by a narrow sunken ridge.

The sea breaks over the ridge in heavy weather and the main boat passage through it has least depth of 10.1m.

Shallower depths occur farther inside. Outside the ridge, flood currents set W.

Port Nelson, in the E part of Saint George's Bay, is the principal settlement on Rum Cay, with a population of about 100 inhabitants. A light is exhibited at Port Nelson.

Vessels intending to enter Saint George's Bay and anchor off Port Nelson, steer for the elevation backing Cotton Field Point Light on a heading of 012° and proceed so as to transit the main boat passage leading through the sunken ridge fronting

Saint George's Bay.

When the pier fronting Port Nelson bears 081°, they haul to starboard and, steering an ENE course, proceed to the charted anchorage, in about 7.4m, where they are sheltered from all but hurricane winds. The entrance channel has a reported least depth of 10.1m, decreasing to 9m in the fairway.

Cockburn Town (24°03'N., 74°32'W.) (World Port Index No. 10006), the administrative center for the island as well as for Rum Cay, lies on the W side of San Salvador Island. It is only on this side that there is suitable anchorage.

Crooked Island Passage to Caicos Passage

3.4 The sea area between Crooked Island Passage and Caicos Passage, about 120 miles to the ESE and extending S to the approaches to the Windward Passage, is distinctive in that the vast expanses of shoal water characterizing the Little Bahama Bank and Great Bahama Bank to the NW, and, to a lesser extent, the shoal water seamount plateau to the SE are largely absent with the consequence that the several islands lying scattered throughout the area are not, with notable exception, fronted by any appreciable shoal water coastal margin.

The seaway is deep and the islands and few sunken dangers rise steep-to.

Crooked Island Passage (22°55'N., 74°34'W.) lies between Long Island and Crooked Island, where it serves as a much frequented link in the transit of the Bahamas by vessels enroute from U.S. east coast ports to the Panama Canal by way of the Windward Passage.

Vessels commonly pass to the E of Mira Por Vos Cays and transit Mira Por Vos Passage. If intending to pass W of Mira Por Vos Cays, proceed so as to clear Diana Bank, a sand and coral patch with a least charted depth of 16.5m about 19 miles S of Long Island, and Brown Bank, another sand and coral patch with a least charted depth of 18.7m an additional 60 miles farther to the S.

Diana Bank is steep-to, easily distinguished in a good light, and usually marked by surface water agitation or rips near its E side. Over Diana Bank, the current is reported to set SW, frequently at a rate of 1 knot.

Brown Bank may be distinguished in calm weather by surface water agitation near its edges or over its shallower parts.

Samana Cay (Atwood Cay) (23°06'N., 73°42'W.) is a hilly, sparsely inhabited island lying well clear to the E of Crooked Island Passage and away from the usual shipping lanes. It is low and sandy near its W extremity, reef-fringed throughout, and elevated in a conspicuous white cliff on its S side.

There are two bays with sandy beaches, separated by a headland, near the middle of the S side.

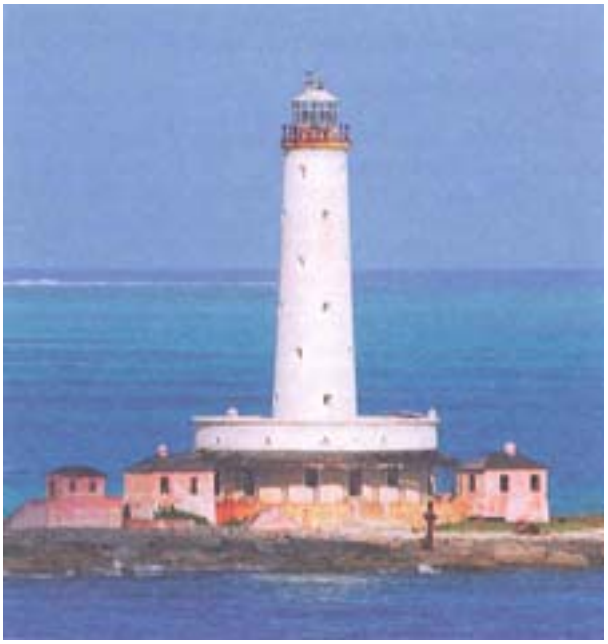
Although holding ground is not ideal, there is anchorage, in a depth of about 14.6m, 0.3 mile offshore on the S side of Samana Cay about 2 miles from its W extremity.

3.5 The Crooked Island group, lying on the E side of Crooked Island Passage, comprises several low-lying to somewhat hilly islands which, disposed roughly in the form of a triangle and rising steep-to, largely enclose an extensive and, for the general sea area, exceptional shoal water bay, the Bight of Acklins, with depths of 1.8 to 4.1m.

Crooked Island (22°45'N., 74°13'W.), the N of the Crooked Island group, covers a considerable area. There are several coves where anchorage can be secured for small vessels with local knowledge of variable current conditions and access passages through blocking reefs.

The island is high and Blue Hill in particular presents an excellent landmark. Colonel Hill, a settlement atop one of the higher hills near the center of Crooked Island, is the administrative focus for the island group.

3.6 **Bird Rock** (22°51'N., 74°22'W.), 6m high, is located on the reef that fringes the N side of Crooked Island, 1 mile NW of the NW extremity of the island. A light is shown from a 22m high white stone tower. The reef extends nearly 1 mile NNW from Bird Rock.



Bird Rock Light

Although the current N of Crooked Island is predominantly NW at a rate 0.5 to 0.7 knots, its constancy is low and a S or SW current sometimes flows into Crooked Island Passage. Rates of up to 3 knots have been observed.

Portland Harbour, a small reef basin anchorage, is reported subject to a strong surge uncomfortable to small vessels. Local knowledge is essential in attempting the passage to the anchorage.

A better anchorage in a good holding ground of sand and grass, lies farther down the wooded low-lying W side of the island about 0.5 mile S of Landrail Point.

Vessels are advised to approach this anchorage with caution and, in winter, to prepare to get underway as soon as the wind veers S of E.

3.7 **Long Cay** (Fortune Island) (22°37'N., 74°20'W.), the W of the Crooked Island group, is somewhat wooded and generally low-lying, except for a scattering of hills. Fortune Hill is a good landmark and particularly conspicuous from the N or S.

Albert Town, a very small community close N of Fortune

Hill, faces NW and onto a narrow coastal bank having marginal to dangerous anchorage for small vessels which, because of limited swinging room, must prepare to get underway as soon as the wind shifts from offshore. A stranded wreck is found 0.2 mile W of the town.

A better anchorage, particularly during strong N winds, lies close S of Windsor Point, the S extremity of the island, marked by a light, in a position having an excellent holding ground. Vessels are advised not to approach the anchorage at night.

Acklins Island (22°26'N., 73°58'W.), the largest and E of the Crooked Island group, has a natural harbor at Atwood lying 12 miles E of Majors Cay, where the reef opening is wide and more easily identified than at Major's Cay.

It is reported the light at the entrance is better maintained and more reliable than others in this part of the Bahamas.

Castle Island, to the SW, is low and sandy, except at its N end where it becomes fairly high and rugged. It is fronted to the SW extremity of Acklins Island by rocks and a dangerous sunken reef impassable to all but small vessels with knowledge of this area.

There is anchorage on the NW side of Castle Island, sheltered from E winds, in 16.5m, on the narrow, steep-to coastal bank with Castle Island Light bearing 185° and with Northwest Rock bearing 078°.

The bight formed in the SW part of Acklins Island, between South West Point and the low scrub-covered Salina Point to the N, has similar anchorage.

South Cay, which is a good radar target at 12 miles, lies about 11 miles NNE of Salina Point.

The large, enclosed shoal bay of the Bight of Acklins is suitable only for small craft with local knowledge.

3.8 Mira Por Vos Passage (22°05'N., 74°26'W.), the continuation of the much frequented route through Crooked Island Passage, is the clear deep-water seaway lying between Castle Island, to the E, and the several low-lying barren islets and adjacent sunken dangers of Mira Por Vos Cays (Mira Por Vos Shoals) to the W.

Currents commonly set SW across the passage and onto Mira Por Vos Cays, but is has been reported that at times they may become variable and even set NE onto Castle Island.

South Cay, the largest of the islets on the W side of the passage, has on its S side two conspicuous sand hills.

About 0.5 mile off its W side, there is an anchorage, in 14.6 to 16.5m, sand, during moderate weather and with the wind from the E.

Directions.—From a position about 10 miles E of San Salvador Light, steer to pass about 6.3 miles off Bird Rock Light, about 7 miles off Windsor Point Light, and 4 miles W of Castle Island Light.

If passing W of Mira Por Vos Cays, steer to clear Diana Bank and Brown Bank as previously described in paragraph 3.4.

3.9 Mayaguana Passage (22°32'N., 73°15'W.), midway between Crooked Island Passage and Caicos Passage, is a deep-water open seaway which, entered between Plana Cays and Mayaguana Island, serves as an approach of secondary importance to vessels seeking to transit the Windward Passage.

Plana Cays (French Cays) (22°37'N., 73°33'W.), on the W side of Mayaguana Passage, consist of two small seasonally inhabited reef-fringed islands lying atop two distinct seamount-like risings from the sea floor.

These two cays stretch about 9 miles in an E-W direction, where the W cay has limited but sheltered anchorage, in about 12.8m, sand, on the steeply sloping coastal bank fronting its W side.

Anchorage is available on the W side of the cay, in depth of 15m, sand with isolated coral heads, with the summit of the cay bearing 095° and about 0.2 mile off the cay. The E island rises to a summit near its W extremity and falls away in low-lying flat land towards its E extremity.

A shoal water coastal bank, extending from the E island into Mayaguana Passage, has a dark rocky bottom which, failing to show up well, should be approached with caution. A 12m tower is located near the E tip of the E island.

3.10 Mayaguana Island (22°23'N., 72°57'W.), on the E side of Mayaguana Passage, is a large sparsely-inhabited island which is thickly wooded and low-lying for the greater part and rises in a series of hills and hillocks.

The island is a very useful port of call for vessels bound to and from the Caribbean as it lies 50 miles E of Acklins Island and on the direct shipping route.

The E end of the island is more hilly than the W end which, though rather steep-to, is very low and difficult to make out, particularly from the SW. Abraham Bay Hill, near the middle of the island, slopes up gradually from Abraham Bay, a large shoal water coastal indentation on the S side of the island.

The community of Abraham Bay, serving as the administrative center for the island, stands on the NE side of the bay while, on the NW side, there is a large conspicuous white building. Two towers are located near the airport on the NW side of the bay.

Abraham Bay's E entrance approach has anchorage, in a charted depth of about 18.3m, hard sand, not quite 1 mile from Guano Point, with Abraham Bay Hill bearing 060°.

The W entrance approach has anchorage, in about 18.3m, sand, about 0.5 mile S of Start Point. Mayaguana Island's W side has temporary anchorage, in 32.9m, on the narrow steeply sloping coastal bank fronting a very small uncharted shoreside community.

3.11 Hogsty Reef (21°41'N., 73°49'W.), lying central to surrounding land areas and adjacent to several direct routes joining the Crooked Island Passage, Mayaguana Passage, and Caicos Passage with the Windward Passage, is a small coral atoll.

The atoll rising steep-to from the sea floor, is a roughly horseshoe-shaped outer reef which dries in places at LW enclosing a lagoon where depths of from 6 to 9m exist.

The W side of the atoll is comparatively open between the low-lying but somewhat grassy Northwest Cay and the equally low-lying but quite barren Southeast Cay. A light is shown from Northwest Cay.

This opening has good anchorage, in 7.3 to 9.1m, about 0.5 mile SE of Northwest Cay.

Currents in the anchorage and round about Hogsty Reef in general are reported irregular in both set and velocity.

A stranded wreck lies on the NE side of Hogsty Reef. The

Man of War Bay—Salt Export Pier

wreck has been reported to be radar conspicuous at about 18 miles and to be lying upright on a heading of 142°. It is a potential source of dangerous confusion to the mariner unaware of the stranding.

From a distance of 5 to 8 miles, a stranded wreck might be mistaken for a vessel underway. This conspicuous landmark is visible farther than the light tower.

Great Inagua Island (21°05'N., 73°18'W.), one of the largest and certainly the S of the Bahamas, lies due S of Mayaguana Passage. It is generally low throughout, wooded and quite flat save for a scattering of scrub-covered sand hills of which East Hill, near the E coast of the island, is the highest.

The entire coastline, with few exceptions, is fronted by a steeply sloping narrow margin of sunken dangers not having a convenient entrance to a comfortable natural harbor. Little Inagua Island, to the N, is flat and uninhabited.

3.12 Man of War Bay (21°05'N., 73°41'W.), on the W side of Great Inagua Island, is a steeply shelving coastal indentation entered between the low-lying wooded North West Point and the scrub-covered Middle Point (Devil Point).

There is a T-shaped jetty for loading solar salt from the extensive salt operation on the island; its length from the shore is 366m, with a berthing face of 198m at its head and a depth alongside of 12.5m. This facility is known as the Morton Salt Loading Terminal. Bulk carriers up to 35,000 dwt can be accommodated. General cargo vessels can be loaded/discharged by barges at anchorages about 0.7 mile N and S of the jetty. Range lights are N of the pier area.

There is a small wharf that is located on the N shore of the bay with a depth alongside of 2.4m, capable of accommodating vessels up to 46m long.

For vessels loading at Man of War Bay, a pilot is not compulsory but may be taken aboard 1 mile W of the jetty.

Vessels awaiting a berth anchor N of the wharf. It was reported that a good anchorage, in 9.1m, lay with the wharf bearing 178°, distant 2.3 miles.

3.13 Matthew Town (20°57'N., 73°40'W.) (World Port Index No. 10010), S of Man of War Bay, is the administrative center for and the only community of any consequence on Great Inagua Island.

There are two small piers, a lighthouse, and limited facilities for commercial vessels. The basin is 65m square and vessels with a maximum draft of 3.5m can enter.

Matthew Town faces W towards Matthew Town Road and a gently sloping coastal margin of white coral sand clear of coral heads and other sunken dangers.

The roadstead is commonly free from heavy swell and has charted anchorage in a position well sheltered from the usual E winds. It is rare for the anchorage to be inconvenienced by sea or weather conditions. If conditions become threatening, however, vessels are advised to depart the anchorage immediately. A light is displayed S of the town.

The anchorage in Matthew Road has depths ranging from 8.2 to 9.1m, coral sand.

Molasses Road, an open roadstead in South Bay about 5.5 miles ESE of Matthew Town, has sheltered anchorage during NW through N winds, in 14.6m, dark sand, rock and weed, with Saltpond Hill bearing 012° and Southwest Point bearing about 267° and open S of Molasses Reef.

Vessels are advised to approach the anchorage with extreme caution, since the reef is difficult to make out, particularly with an offshore wind, and are advised to leave as soon as the wind shifts to usual E quarter.

Caicos Passage to Navidad Bank

3.14 The sea area between Caicos Passage and Navidad Bank, about 250 miles to the ESE, is interspersed with a chain of five seamounts which, more or less evenly spaced, share in a common characteristic in that all sweep abruptly upward, particularly on their NE side, from depths of several thousands of meters.

The two N seamounts rise above the ocean surface in a series of islands and cays while the remaining three seamounts to the ESE approach the surface as extensive shoal water banks, each with one or more scattered dangers having depths of less than 5.5m. Passages between the seamounts are wide, with considerable depths throughout, except for a number of isolated shoal depths through this area.

It is not difficult to transit these waters, but the mariner should exercise the usual practices of safe seamanship.

3.15 Caicos Passage (22°00'N., 72°30'W.), the N passage, is entered between Mayaguana Island and Caicos Bank, about

34 miles SE. It then passes between West Caicos and Little Inagua Island and to the E of Great Inagua Island.

This passage is deep and should not present a problem to powered vessels in daylight. At night, vessels are advised to proceed through either Crooked Island Passage or Turks Island Passage and, during periods of poor visibility, to give a wide berth to the steep-to W side of the Caicos Islands.

The only dangers in the N part of the passage are East Reef off Mayaguana Island on the NW side and the reefs in the vicinity of Providenciales Island on the SE side.

East Reef of Mayaguana Island extends to the E from the coast between Southeast Point and Northeast Point. It is fringed with dangerous reefs and is steep-to on its S side, but a narrow interruption, 4 miles ENE of Southeast Point, will guide small craft with knowledge of the area to comfortable anchorage under Booby Cay, located 0.7 mile SE of **Northeast Point** (22°20'N., 72°43'W.).

A radar-conspicuous stranded wreck lies on the reef 1.7 miles E of this narrow break. As mentioned earlier, the other danger of prime concern to the navigator in the Caicos Passage is Providenciales Island.

In addition to the reefs extending from its SE side, the island is also fringed with a dangerous reef, with shoal depths close beyond it, projecting 2 miles NNW of the island's N point. The point is indicated by a moderately high hill surmounted by a pile of stones that falls to a low, sharp point. A light is shown from the NW tip of the island.

Tides—Currents.—Currents generally set N in Caicos Passage, with rates up to 0.5 knot. Currents, with rates up to 1.4 knots and setting WNW, have been experienced in position 21°58'N, 72°57'W.

Turks and Caicos Islands

3.16 The **Caicos Islands** (21°56'N., 71°58'W.), consisting of numerous thinly-wooded islands and cays of weathered limestone, lie along the N and E sides of Caicos Bank.

Turks and Caicos Islands

The bank stretches more than 60 miles across and some 50 miles wide.

Regulations.—All vessels arriving from foreign ports should contact the harbormaster on VHF channel 16 for information and instructions before anchoring.

Many traditional anchorage areas are now within the boundaries of six National Marine Parks. Vessels over 18.3m in length may not anchor within these boundaries. Vessels of less than 18.3m may anchor in areas with a sand bottom, but not within 91m of a dive site mooring. All vessels are prohibited from anchorage within 122m of the low water mark of cays designated as protected areas. Grounding in a national marine park is cause for prosecution.

Signals.—Vessels bound for any port in the Turks and Caicos islands must forward their ETA to the appropriate harbormaster on VHF channel 16. The message should include the vessel's name, call sign, nationality, length, draft, and gross registered tonnage, and net registered tonnage.

Caution.—Caicos Bank is extremely dangerous to approach from any direction, but particularly from the S or SW. Within the fringing reef and islands there is an extensive area which is totally unsurveyed. There is no secure anchorage for large vessels off the Caicos Bank.

Caicos Bank, on the S and SW sides, are particularly difficult in that many above and below-water dangers lie well seaward of landmarks and in an extreme position, where the shoal water shelf of the bank drops off suddenly to ocean depths.

South Rock, with a depth of less than 1.8m, lies near the S extremity of the bank and within a dark seaweed that obscures much of the bank along its S and E sides.

Remarkable on the bank is Whale Breaker, a group of awash rocks about 7 miles NE of South Rock. A heavy sea will break on the rocks sending a remarkable spout of water to an extraordinary height.

Another mark is West Sand Spit, located midway along the Caicos Bank on its SW side which is almost awash, while French Cay, about 8 miles to the NW, a low bushy islet which serves as a base camp for fishermen for much of the year, is a convenient reference for small vessels with local knowledge to proceed E across the bank. A light is displayed close N of the cay near a stranded wreck.

The SW side of Caicos Bank throughout its length has been observed to present a light green color which, in strong contrast to the deep blue of the ocean, is quite often reflected as a "bank blink" visible from a respectable distance.

3.17 West Caicos Island (21°39'N., 72°28'W.) is located about 6 miles SW of Providenciales Island, and is the W island on the bank. West Caicos Island is uninhabited and quite flat, with the exception of a hill near Southwest Point that rises to 20m.

Another hill, 18.3m high, will be seen 2.5 mile from its N end. The W side of the island is steep-to and the outer edge of the bank, with depths of less than 200m, lies merely 0.1 mile offshore.

Vessels are advised to exercise caution when approaching at night, during periods of poor visibility, and in the early morning when a mist sometimes envelopes the island.

It has been observed that a considerable quantity of Sargasso weed spreads at distances of 0.7 to 1 mile off the island's W side.

West Caicos Island is marked by a light on its SE extremity at Clearsand Road and is reported radar conspicuous at about 13 miles.

Clearsand Road affords good anchorage for small vessels with local knowledge, in 9.1 to 11m, sand.

This anchorage is sheltered from winds, N or W, and Southwest Reefs, on its E side, affords protection by breaking the sea from that direction.

The ideal position for the anchorage is just within the fringe of the bank with the hill at 19.8m on West Caicos Island bearing 349°, in a depth of 9.1m.

A channel, with a least depth of 4m, navigable with local knowledge, leads from Clearsand Road to Providenciales Island.

3.18 Providenciales Island (Blue Hills) (21°47'N., 72°17'W.) is a site of developing tourist trade. It is a large island and among the highest and most attractive in the group. Despite the fact that these islands lie 200 miles to windward of Cape Santa Maria, the mariner has become more and more attracted to them.

The highest point of the island is about 85m and a moderately-high peaked hill, surmounted by a pile of stones at the N extremity of Providenciales Island, falls to a low sharp point.

A dangerous reef, with shoal depths close beyond it, extends 2 miles NNW from the point. A light is exhibited near the NW point of the island.

A radio tower, 62m high, stands about 1.5 miles SW of the NE point. A radio mast, 20m high, stands 4 miles farther SW. Obstruction lights are exhibited from both tower and mast.

Malcolm Road is an anchorage on the coastal bank in the N of two bays located on the W side of the island where the bank extends 0.5 mile offshore.

South Bluff, the SW extremity of the island, is bold, white and rocky. There is an inlet to the NW side of the bluff which is known as Chalk Sound.

South Dock is situated at the E entrance point of an inlet located 4 miles E of South Bluff. A wharf, about 61m in length, has a ro-ro ramp at its NE end. A secondary wharf S of the main wharf is about 33m in length. Both wharves lie within an area dredged to a depth of 3m.

Pilotage is available, but not compulsory. The pilots may be contacted on VHF channel 16. The vessel's ETA should be sent 4 hours in advance.

West Reef, which breaks constantly, is very dangerous at night. The reef extends SW for about 7.5 miles from the point that separates the two bays on the W side of Providenciales Island. A small sand cay is located near the extremity of the reef, 3 miles NW of the NE extremity of West Caicos Island.

The stranded wreck of a cargo vessel on West Reef is conspicuous both visually and on radar. There is also a wreck SW of the grounded vessel just mentioned.

3.19 North Caicos Island (21°56'N., 71°59'W.) is linked to Providenciales by Caicos Cays. These cays are noted for their magnificent beaches, all separated by deep channels which provide protected anchorage.

North Caicos is a distinctive island by reason of a series of low hills along its N side and by Mary Cays which, charted as off-lying islets, appear as three prominent dark conical small hills near its NW extremity. A stranded wreck lies on the reef E of Mary Cays.

The N side of North Caicos Island is easily identified as its description implies and is radar conspicuous at about 17 miles. A reef skirts the N side and extends 1 mile offshore, and a dangerous reef extends 2 miles NE from its NE extremity in the vicinity of the mouth of Bottle Creek.

The coastal bank is 1 mile wide outside the reef and ledge with depths from 18.3 to 21.9m.

Kew, the largest community on North Caicos Island with several hundred inhabitants, lies about 3.5 miles S of Mary Cays.

3.20 Grand Caicos Island (21°47'N., 71°43'W.) fills the central position on the NE edge of the bank. It is separated from North Caicos Island by Juniper Hole, and from East Caicos Island by Lorimer Creek, both of which will accommodate only small craft.

As the Grand Caicos Islands and the East Caicos Islands continue the Caicos Island group to the E, an extreme danger persists for approaching vessels, in that a continuous foreshore reef rises steep-to from ocean depths coupled with a strong current that sometimes sets onshore from 5 to 6 miles offshore. The current is very remarkable off Juniper Hole.

The coast between Juniper Hole and **Haulover Point** (21°51'N., 71°41'W.), about 11.5 miles E, is fronted by foul ground to a distance of about 1.7 miles offshore in places.

Haulover Point is flat and when the visibility is poor, accompanied by rain squalls, the point may easily be mistaken for Cape Comete (Drum Point), the NE extremity of East Caicos Island.

South Caicos Light

A radio tower, exhibiting obstruction lights, lies 3.5 miles WSW of Haulover Point.

Philips Reef is a dangerous, steep-to, coral reef that continually breaks over its scattered heads and lies near the N edge of

the bank, with its E end about 2.5 miles E of Cape Comete. The reef drops off abruptly to ocean depths near its outer extremities.

The bank extends about 0.5 mile N and 2 miles E of the reef, so that vessels approaching from this quarter may obtain some warnings of its proximity by careful attention to soundings.

If there is an urgency, the channel between Philips Reef and Cape Comete can be navigated, where the depths are from 9 to 14m, but caution is advised when taking this passage.

The channel passing E of East Caicos has not been fully surveyed.

3.21 Grand Turk (Cockburn Harbor) (21°30'N., 71°30'W.), on South Caicos Island, gives far more protection than might appear from the chart. It is the only secure anchorage on the E side of the Caicos Bank.

The shallows to the S and W break up any sea from those directions, the island itself provides lee from northers and, in the event of heavy winds from the SE, there is anchorage, in about 11m, 0.2 mile WNW of Dove Cay Light, hard sand bottom.

Cockburn Harbor is entered between the NE end of Long Cay and the mid-lying rocky islet, Dove Cay, 0.2 mile ENE. A light is shown from the E end of Long Cay.

Also prominent is Government House located on Government Hill, 0.3 mile NW of Tucker Point, and a white hotel with a green roof located on Parsons Point, about 0.5 mile NW of Tucker Point. There are some radio masts 0.1 mile N of Tucker Point.

The edge of the bank, with depths of less than 200m, lies 0.5 mile S of Dove Cay and there are reported depths of 8.2m about 0.1 mile within.

Pilotage is not compulsory but may be obtained from Grand Turk (Cockburn Town), Grand Turks Island.

Vessels are advised to exercise extreme caution when making their approach to the narrow steep-to shelf fronting Cockburn Harbor. The Turks and Caicos Rescue Association, assisted by a police plane (call sign: Skyhawk on VHF channel 16) and a 15.2m patrol vessel (call sign: Seaquest on VHF channel 16), are available for search and rescue.

Six Hill Cays form the SE end of Caicos Bank and lie about 3 miles W of the S end of Long Cay.

Within the edge of Caicos Bank, at 0.7 mile, are the Fish Cays, 6 miles SSW of the S end of Long Cay.

There is a hill rising to 31m on the central point of Big Ambergris Cay, located 2 miles inside the edge of the bank, 2.5 miles S of Fish Cays.

There are some conspicuous white cliffs on the SE side of Big Ambergris Cay. Little Ambergris Cay, located to the W of Big Ambergris Cay, is 1 mile distant, has a very low profile, and cannot easily be seen when viewed from the edge of the bank.

A small cay and a number of rocks are located between Big Ambergris Cay and **Bush Cay** (21°11'N., 71°37'W.), the E of the Seal Cays, 5 miles to the S.

There is a light on Bush Cay. The Seal Cays include Pear Cay, Shot Cay, and White Cay and extend about 11 miles W from Bush Cay.

Swimmer Rock is a rocky patch, with depths of less than 4m, that lies close to the edge of the bank about 6 miles SE of Bush Cay.

A shoal, with a depths of 6.6m, lies about 2 miles SE of Swimmer Rock. The edge of the bank, with depths of 11m, extends 1 mile farther SE.

Caution.—The SE corner of Caicos Bank, S of Bush Cay, extends further E than charted and the proliferation of rocks shown on the bank in this area, and to the W, S of Seal Cay appear to be quite extensive shoal patches, rather than individual rocks.

3.22 Turks Island Passage (21°25'N., 71°19'W.) is the seaway between the Turks and Caicos Islands and, for the greater part, has ocean depths at its N entrance and gradually shallows to comparatively shoal water submarine ridge in its S entrance.

Depths fall away again to ocean depths farther to the S.

The passage is about 10 miles wide at its narrowest part, between the banks at its S end. It is used quite extensively by vessels bound to the ports of the West Indies, but Mona Passage is safer.

It is not recommended to vessels bound N at night as the lights in the S approaches are unreliable.

Tides—Currents.—Although the currents in the passage itself are reported to be weak, and the tidal currents inappreciable, local pilots affirm that ocean currents sometimes set strongly NE and SW and that tidal currents flow with a velocity approaching 3 knots.

Caution.—The principal dangers in Turks Island Passage are Philips Reef and the shoal water coastal bank it rests on. In the S entrance, a source of danger is Swimmer Rock, mentioned earlier, lying near the SE extremity of Caicos Bank, and Endymion Rock, located 15 miles to the E of Swimmer Rock.

Endymion Rock, with depths of 1.2m, and which only breaks in heavy weather, is surrounded by a cluster of rocky heads and shoals with depths of less than 10m extending 0.5 mile N and S.

The water over Endymion Rock is very dark so that the shoal area stands out well, but the rock itself is indistinguishable from the other dangers.

The bank on which the Turks Islands group lies, extends a farther 8.5 miles S and 3.5 miles SE from Endymion Rock. Shoal heads with 8.2, 14.6, and 16.5m, exist 1.5 and 3 miles SSW and 2.2 miles SE, respectively, of Endymion Rock. A depth of 18.5m lies 6 miles SSW of Endymion Rock.

3.23 The **Turks Islands** (21°24'N., 71°07'W.), the easternmost islands of the Bahamas, consist of Grand Turk Island and Salt Cay, the two largest islands, and four smaller islets, numerous rocks, and a forest of coral heads.

These sandy and sparsely wooded islands lie along the W side of the elongated shoal water plateau atop the second of the five seamounts extending ESE from Caicos Passage.

Vessels are advised to exercise extreme caution when making their approach, particularly from the E because of the many sunken dangers that lie in a position where the plateau slopes down abruptly to ocean depths.

Regulations.—All vessels arriving from foreign ports should contact the harbormaster on VHF channel 16 for information and instructions before anchoring.

Caution.—Lights in the Turks and Caicos Islands have been reported to be unreliable.

Recently, it was reported that most of the range lights were permanently extinguished.

Grand Turk Light

3.24 Grand Turk Island (21°29'N., 71°07'W.) is located on the W edge of the N part of the bank, 20 miles E of the Caicos Group. It is the largest and only important island of the group, being rather barren and largely low-lying throughout except for a narrow ridge of sand hills along the E side.

The island is 5 miles long and 1.5 miles wide. Conspicuous on the N extremity of the island is a water tower, distinctive with its red and white checkers, standing 43m high. The water tower stands close SE of Grand Turk Light, and is reported radar conspicuous up to 28 miles.

The NW side of Grand Turk Island consists of foul ground and projects 0.5 mile offshore, and farther again NW, there exists a narrow ridge with depths of less than 100m.

The balance of the W side of Grand Turk Island is bordered by a steep-to reef up to 0.3 mile offshore, and the edge of the bank lies only 0.2 mile outside the reef.

Northeast Reef is a dangerous reef extending about 2.5 miles NE from the N point of the island (21°31'N., 71°08'W.), and a narrow ledge, with depths of 11 to 36m, extends 6 miles farther NE.

On the E side of Grand Turk Island, a reef extends up to 1.5 miles offshore. It also extends 6 miles SSE from the S end of the island in an almost uninterrupted narrow ridge.

The edge of the bank lies 7 miles farther E and SE.

A series of small cays lie E and SE of Grand Turk Island. Gibb's Cay and Round Cay lie close together at the N end of the chain, 0.7 mile E of the S end of the island.

Long Cay lies on the reef 1.5 miles SE of Grand Turk, and Pear Cay lies 2 miles farther S. East Cay, with an elevation at 21m, lies about 5 miles SSE of Grand Turk Island.

Various formations of dangerous rocks and shoal patches lie between the above chain and to the W side of the bank, and between Toney Rock, a small islet lying about 0.7 mile SE of East Cay, and Salt Cay about 8 miles W.

There are some distinct rocks that lie 0.7 mile inside the E edge of the bank, 4 miles and 4.5 miles SW of Toney Rock.

The reef fringing the E and SE sides of Grand Turk Island is broken here and there, but it should be noted there is safe passage only with local knowledge.

3.25 Grand Turk Cruise Centre (21°26'N., 71°09'W.) is located 0.5 mile NW of Boady Roack Point, the S point of Grand Turk Island.

Depths—Limitations.—The main berth is approached in deep water directly from the NW. Depths alongside the berth are reported (2011) to be 11.3m. Berths on each side of the pier are 315m in length. The freight dock has a length of 60m and an alongside depth of 3 to 5m and has a berth on each side.

Pilotage.—Pilotage is not required. The ETA should be given as soon as possible but no later than 24 hours prior to arrival.

Grand Turk Cruise Centre

3.26 Grand Turk (Cockburn Town) (21°28'N., 71°09'W.) (World Port Index No. 10020), also known as Cockburn Town (not to be confused with Cockburn Harbor, Caicos Islands), is the administrative center for the Turks and Caicos Islands; the Commissioner's residence and office are close by.

Aspect.—A conspicuous radio mast, from which an obstruction light is exhibited, is situated 2.5 miles SSW of the N point of the island. A light is shown from the N end of the island.

Several radio masts, some of which exhibit obstruction lights, are charted in various locations about the island.

The airport control tower, a red hut on stilts, is clearly visible from the W. A large white conical radar disc, located near the center of the island, is an excellent landmark.

Pilotage.—Pilotage is not compulsory, but may be obtained

at Cockburn Town. Pilots for Cockburn Harbor, Caicos Islands may also be obtained here. The boarding ground is situated about 1 mile N off the reef. Pilots may be contacted by VHF channel 16.

Anchorage.—Hawk's Nest Anchorage is sheltered from N and W, and offers anchorage to vessels drawing no more than 5.2m, with local knowledge.

Man-of-War Hole Anchorage is situated in depths of 11 to 16.5m, rock and coral, 1 mile SW of the Cockburn Town pier.

A vessel was reported to have anchored in depths of 6.6m, with the lighthouse at the N end of the island bearing 097°, 1.5 miles distant.

Caution.—A prohibited anchorage area and two submarine cable areas lie off the W coast of the island and may best be seen on the chart.

3.27 Salt Cay (21°20'N., 71°12'W.), the second inhabited island of the group, rises abruptly to a bold bluff in its NW part and elsewhere displays a terrain of low-lying hills interspersed with large salt ponds.

A light is exhibited on the summit of the bluff near the NW extremity of the cay.

Vessels, when making their approach from the E, are advised to keep the S extremity of the island bearing more than 291° so as to avoid sunken dangers charted about 3.5 miles to the SE.

A boat harbor is situated about 0.6 mile S of the NW point of Salt Cay and a derelict stone jetty, with conspicuous white house nearby, lies 1.1 miles S of the NW point.

Anchorage.—The open sea area S of Salt Cay is reported to have good anchorage, in 12.8 to 18.3m.

3.28 Big Sand Cay (21°10'N., 71°15'W.), the third largest island, takes the form of two low-lying hillocks separated by a still lower-lying bush-covered neck of land. Numerous sunken and above-water dangers lie scattered in all approaches except from the E.

Big Sand Cay Light (right side next to old fallen light)

There is a light on the N summit of Big Sand Cay. Submarine cables exist NW and SE of the N part of the island.

A reef, on which the sea breaks heavily during all but fine weather, extends 2 miles N from Big Sand Cay.

Big Sand Cay Light

Anchorage.—The area to the SW of the island has anchorage in about 11m, sand, with the low neck of land on Big Sand Cay bearing 067°, distant about 1 mile.

Vessels lie to the S of Wynns Rock, charted as a rocky depression in the sea floor, which shows up well as a dark patch contrasting with the white surrounding sand.

A vessel anchored, in 13m on the W edge of the bank with the framework tower on the summit of Sand Cay bearing 090°, distant 1.4 miles.

Caution.—North Rock, 3m high, Middle Rock, and South Rock are located near the N end of a reef that extends nearly 0.2 mile N from Big Sand Cay. Other dangers include a dangerous shoal, with a least depth of 2.4m, lying 1 mile N of North Rock; its position not exactly determined.

A bank, defined by the 10m contour and on which there are depths of 2 to 9.1m, fronts the W side of Sand Cay up to 1 mile offshore in places.

3.29 Three seamounts, with their intervening passages, continue the Bahamas for a distance of about 160 miles ESE from the Turks Islands. All three rise steep-to from ocean depths, particularly on the NE side, and all are surmounted by an extensive shoal water plateau, large portions of which have not been examined.

Vessels are advised to exercise great caution when navigating in the vicinity of these isolated uprisings of the ocean floor.

Mouchoir Passage, which separates the Turks Islands from Mouchoir Bank, is about 16 miles wide and very deep.

Mouchoir Bank (20°57'N., 70°42'W.), the N of the three seamounts, has much of its N side awash in two groupings of coral reef. A 1.8m depth rock lies between the two groupings.

This N side is reported to be very dangerous and the seas break on these reefs with considerable violence. There is a deep cleft which has not been fully surveyed in the middle of the N side of the bank which may extend S to divide the bank in two; this cleft has not been fully surveyed.

There are numerous shallow patches on the bank which break, however, the main part of the bank has not been surveyed nor has a probe been made for a reef reported on the bank. Attention is drawn to a dangerous rock 14 miles SW of North East Breaker.

Caution.—Vessels should keep well clear of the bank and not attempt to cross it.

North East Breaker is a dangerous rock that lies about 3 miles S of the end of the narrow tongue which forms the NE extremity of the bank, in a position 41 miles E of Sand Cay.

In general, Mouchoir Bank is further S than charted, with the North East Breaker slightly to the W of charted position.

3.30 Silver Bank (20°30'N., 69°45'W.), the middle of the three seamounts, has a portion of its NE side awash where coral reefs fall off abruptly, giving little warning of their presence.

Elsewhere, the bank has not been closely examined and, as with the Mouchoir Bank, it is not advisable to cross it. A radar-conspicuous stranded wreck lies on the reef as charted.

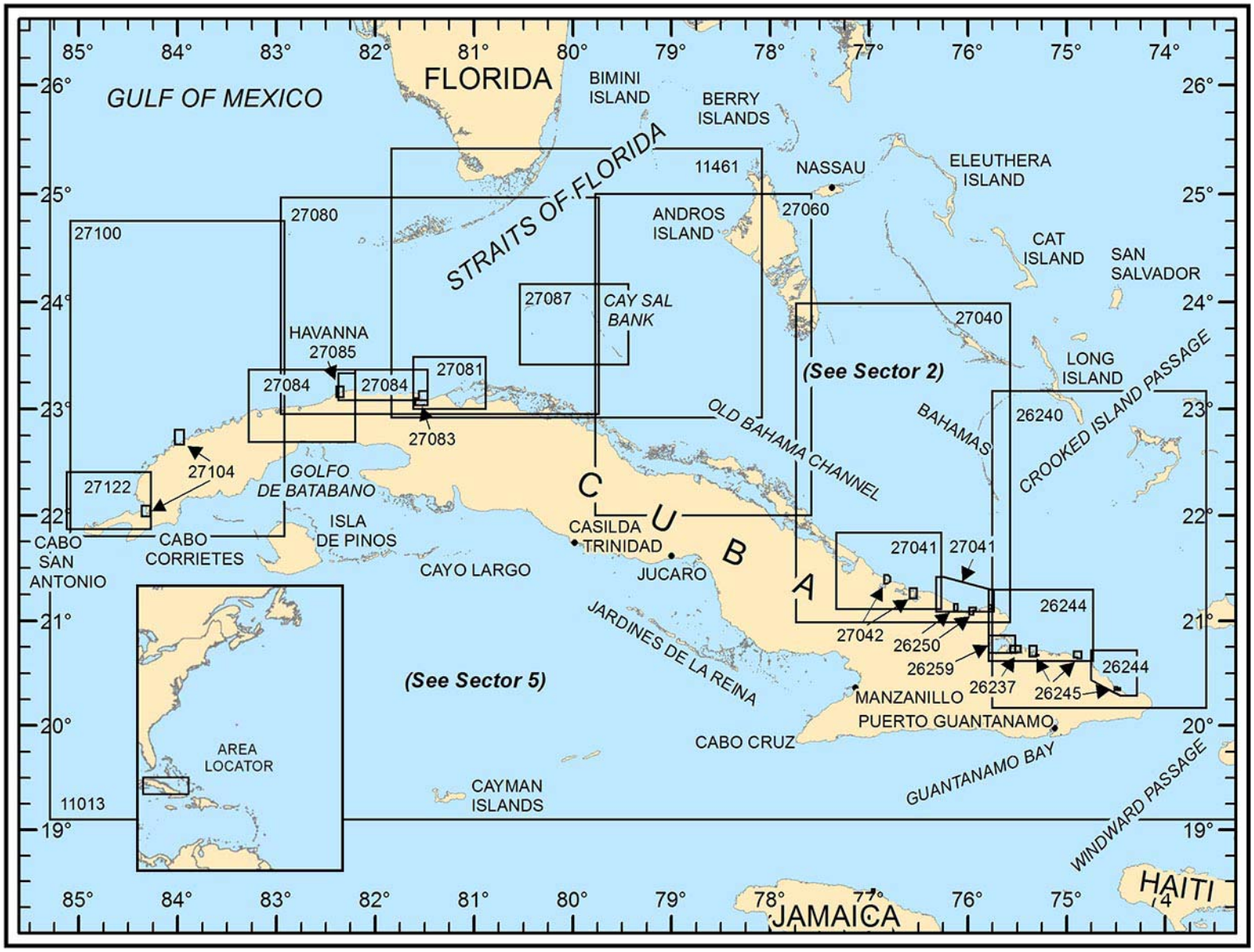
As the water on the bank is not discolored except over the shoals where it takes on a whitish appearance, soundings should be taken repeatedly, irrespective of the direction from with the bank is approached.

Silver Bank Passage, the seaway between Silver Bank and Mouchoir Bank, is a wide deep-water trench clear of all known dangers.

3.31 Navidad Bank (20°00'N., 68°50'W.), the E of the three seamounts, is composed of coral and sand, with general depths of less than 36.6m; there is a least known depth of 12.8m located on the E side of the N end of the bank.

Navidad Bank rises with characteristic abruptness from the sea floor, but in contrast to Silver Bank and Mouchoir Bank, nowhere breaks the ocean surface. The change of color over the bank is not sufficient to indicate the sunken dangers.

The broad expanse between Silver Bank and Navidad Bank has several charted mid-lying sunken dangers; caution is advised when navigating in this area.


GULF OF MEXICO
FLORIDA
BIMINI ISLAND
BERRY ISLANDS
STRAITS OF FLORIDA
11461
NASSAU
ELEUTHERA ISLAND
27080
27100
ANDROS ISLAND
27060
CAT ISLAND
SAN SALVADOR
27087
CAY SAL BANK
27040
HAVANNA
27085
27084
27084
27081
(See Sector 2)
LONG ISLAND
CROOKED ISLAND PASSAGE
OLD BAHAMA CHANNEL
BAHAMAS
26240
27083
27104
27122
GOLFO DE BATABANO
ISLA DE PINOS
CASILDA
TRINIDAD
JUCARO
CAYO LARGO
CABO SAN ANTONIO
CABO CORRIETES
27041
27041
26244
27042
26250
26259
26237
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26244
JARDINES DE LA REINA
(See Sector 5)
MANZANILLO
PUERTO GUANTANAMO
CABO CRUZ
AREA LOCATOR
CAYMAN ISLANDS
GUANTANAMO BAY
11013
WINDWARD PASSAGE
HAITI
JAMAICA
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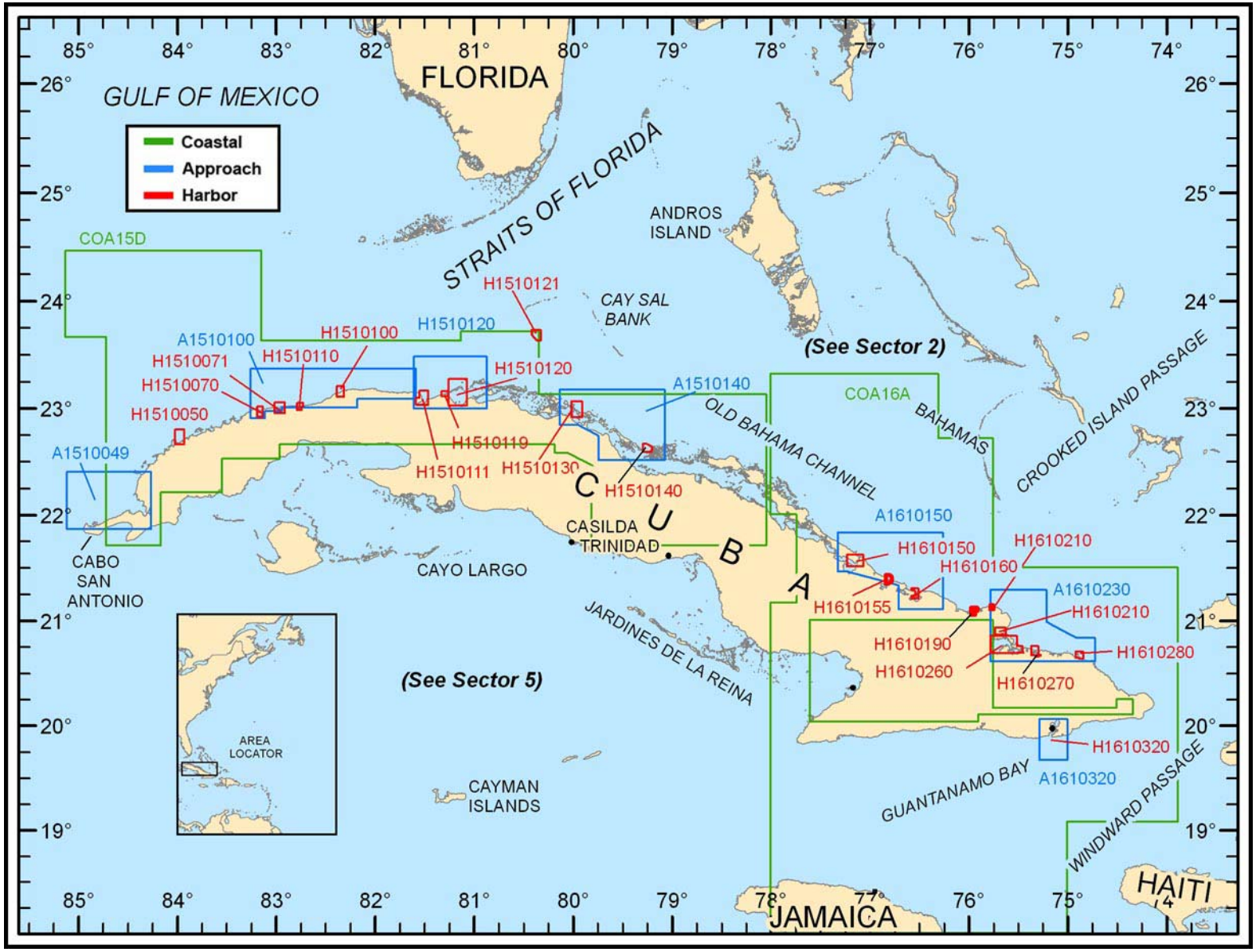

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SECTOR 4 — DNC LIBRARY INFORMATION

SECTOR 4

CUBA—NORTH COAST

Plan.—This sector describes the N coast of Cuba from Cabo San Antonio, the W extremity of the island to Punta Maisi, the E end.

General Remarks

4.1 Cuba, with 44,206 square miles, is the largest island of the West Indies and the principal land area of the Greater Antilles. Between the E and W extremities of the island, there is a distance of approximately 600 miles.

Cuba's coastline of approximately 2,200 miles has an extraordinarily large number of good harbors, chief of which are the pouch-shaped or bottlenecked harbors, which have narrow entrances but commodious anchorage.

The main bays of this type are Honda, Cabanas, Mariel, La Habana, Nuevitas, Puerto Padre, Nipe, and Tanamo on the N coast, and Guantanamo, Santiago de Cuba, and Cienfuegos on the S coast. The principal open bays are Matanzas and Cardenas.

Cuba is fronted by 1,300 to 1,600 islands and islets, of which Isla de la Juventud is the largest. The terrain consists of gentle slopes and rolling land.

Mountains cover approximately a quarter of the total area and are widely spread from one end of the country to the other, with large areas of plains between the mountain concentrations.

More than 200 rivers drain the surface of Cuba. Most of these run toward the N or toward the S, dividing approximately along the axis of the island. Many of the rivers empty into wide, deep estuaries that allow navigation for a short distance from the coastline. Because of the narrow width of the island, almost all of the rivers are short. The largest is the Cauto, 155 miles in length, which runs parallel to the Sierra Maestra through the wide plain of W Oriente. Oriente presents the most rugged relief of Cuba, particularly as represented in the Sierra Maestra.

Cuba's N coast forms a gentle arc divided by natural features into three approximately equal distances. The Archipelago de Los Colorados dominates half of the first or W length, while the Archipelago de Sabana and Archipelago de Camaguey completely mark the second or middle length, which length fronts on Nicholas Channel and Old Bahama Channel. The third or E length fronts directly on the open sea and is almost completely without off-lying islands. Pocket bays are a distinctive feature of the entire coast.

Several of the major shipping routes for the Caribbean Sea, and routes for traffic bound to or from the Panama Canal pass Cuba. Santaren Channel and Nicholas Channel lead respectively from the Straits of Florida and the Gulf of Mexico, through Old Bahama Channel to Windward Passage.

Several IMO-adopted Traffic Separation Schemes have been established along the N coast of Cuba, and may best be seen on the chart.

Navigation in the remaining Traffic Separation Schemes will be observed from control posts and from vessels. Such control posts or vessels shall not call for any information, except in cases involving infringements by shipping within the Traffic Separation Scheme, or other types of infringements of national law.

Winds—Weather.—The principal source of climate and current conditions affecting Cuba are the more or less constant trade winds as these partake of the general North Atlantic clockwise movement circulating around the semi-permanent area of high barometric pressure alternating between the Azores and Bermuda.

The prevailing winds are NE and E from November to April, becoming mostly E with the latter month, and E and SE from May to October, becoming a little N of E with the latter.

Local variation is considerable with winds somewhat stronger in winter and with land and sea breezes commonly a function of prevailing winds.

The wind in the summer is often enough out of the S on the S coast where also it can develop into a "bayamo," a particularly violent thundersquall frequent off Golfo de Guacanayabo.

The West Indian hurricane, the principal aberration within the general forces governing the production of climate conditions within the area, develops more often than not well to the E and in latitudes of the Doldrums. It travels slowly W within the belt of the NE trade winds and with an increase in speed, generally recurves NE in about 30°N.

The season of its occurrence is in late May to early December and the directions of its track is such that it generally parallels the axis of Cuba and passes either N or S.

Hurricanes that develop in the W Caribbean proceed N and commonly pass over the W part of the island.

"Los notes" (northers) are a lesser aberration within the general climate producing forces. They originate as an escape from the continental United States of large cold air masses which, in their movement S and SE, can reach gusts of more than 60 knots. They become progressively less distinct with their passage over the higher elevations of Cuba.

The W part of Cuba has one rainy season (May to October) and one comparatively dry one (November to April). The E part has two rainy seasons (April to June and September to November or December) and comparatively dry ones (February or March and July).

Tides—Currents.—The predominant direction of the current is NW between Punta Maisi to Cayo Cruz de la Padre. In Old Bahama Channel, currents are generally weak and wind influenced. A SE set of 2.7 knots has been experienced with a force 4 NW wind.

A strong inshore set towards the Cuban coast may be experienced between Punta Maisi and Old Bahama Channel.

The current in Nicolas Channel is usually weak and has a W set.

Currents normally set E along the NW coast of Cuba, while a set towards the reefs may be experienced off the Archipelago de los Colorados.

The tidal currents normally set on and off the banks at rates of about 0.5 knot, though in the narrow channels between the

cays, they sometimes attain rates of 2 to 3 knots. Within the cays, tidal currents are weak.

Pilotage.—Pilotage is compulsory for all foreign vessels. The vessel should send its ETA to Mambisas Habana. An ETA message addressed to Mambisas (name of port) should also be sent, if the vessel's first port of call is not Habana. Pilots are available day and night and should be requested 72 hours in advance with an updated ETA being reported 24 hours in advance.

Regulations.—Anchoring or stopping is prohibited within Cuban territorial waters between position 23°14.2'N, 80°21.8'W and position 23°05.6'N, 82°29.4'W.

The dumping of all types of rubbish from ships in Cuban waters is prohibited.

Mariners are advised to use extreme caution in transiting the waters surrounding Cuba. Within distances extending in some cases more than 20 miles from the Cuban coast, vessels have been stopped and boarded by Cuban authorities. Cuba vigorously enforces a 12 mile territorial sea extending from straight baselines drawn from Cuban coastal points. The effect is that Cuba's claimed territorial sea extends in many cases beyond 12 miles from Cuba's physical coastline. This notice is soley for the purpose of advising United States mariners of information relevant to navigational safety and in no way constitutes a legal recognition by the Unites States of the validity of any foreign rule, regulation. or proclamation so published.

Signals.—Vessels must establish communications with the port signal station either on VHF channel 16, or visual signals to announce their presence, nationality, and characteristics.

Caution.—An area in which navigation has been prohibited has been established between an area bounded by the coastline to the SE and between a position 5 miles NW of **Cayo Piedras del Norte Light** (23°15'N., 81°07'W.), to a position 2.5 miles NNW of **Punta Maya Light** (23°06'N., 81°29'W.).

A superbuoy lies in the Straits of Florida about 8 miles S of Woman Key.

Numerous reports indicate that many of the lights and other navigational aids along the coast of Cuba are unreliable or operational.

Punta Maya Light

Offshore Passages

4.2 Yucatan Channel (21°30'N., 86°00'W.), about 108 miles wide between Cabo San Antonio and Isla Contoy, serves as a main route between the Gulf of Mexico and the Panama Canal. The E side of the channel is deep, shoaling gradually to the Mexican coast.

Depths of less than 30m and named dangers extend up to 25 miles off the coast, while depths of 15m and 17m have been reported to lie 34 miles NNE and NE, respectively, of **Isla Contoy** (21°29'N., 86°48'W.).

Tides—Currents.—The greater part of the flow from the Caribbean Sea flows through Yucatan Channel towards the Gulf of Mexico. The western boundary of the current is Banco de Campeche, the bank extending 120 to 145 miles N and W of the Yucatan Peninsula. The E boundary lies about 20 miles off Cabo San Antonio, Cuba.

The current axis is located about 35 miles off the Yucatan coast, about 6 miles beyond the 300m curve, in depths of 366 to 731m. The mean rate during April, May, and June along the axis is about 4 knots.

From 20 to 35 miles off Cabo San Antonio, the mean rate is 1 knot at 50 miles, 2 knots at 65 miles, 3 knots at 78 miles, and at 90 miles, or about 25 miles from Yucatan, 1 knot.

The current set across the width of the channel is northerly. In summer, mean rates increase, while in winter the rates decrease little. The current boundaries contract when the rates decrease, and expand with a rate increase.

Apart from the seasonal variation, there is a noticeable daily variation which is more apparent on the W side. The mean rates given above occur about 9 hours before the moon's upper transit, but rapid rate changes may occur.

On one occasion the rate increased by 3 knots in 5 hours, and decreased to the original value in 9 hours. On another occasion it increased by 3.2 knots in 5 hours.

Some N sets slightly in excess of 5 knots have been experienced in the channel, and in a N to NW direction within the Gulf of Mexico as far N as 23°N.

Within 20 miles of Cabo San Antonio, the sets are either NE toward the Straits of Florida, or SE then E along the S coast of Cuba. At times the E current running from Cabo San Antonio towards Cabo Corrientes may attain rates of 4 knots during S winds, and is dangerous to navigation. On the W side of the channel, inshore of the current's W limit, currents are variable and wind-dependent.

Directions.—During S winds, it is advisable to avoid the coast of Cuba from Cabo San Antonio to Cabo Corrientes, due to dangerous currents.

Vessels not intending to use the Traffic Separation Scheme off Cabo San Antonio should avoid it by as wide a margin as is practicable.

A description of the E coast of Mexico may be found in Pub. 148, Sailing Directions (Enroute) Caribbean Sea, Volume II.

Cabo San Antonio to Mariel

4.3 Cabo San Antonio (21°52'N., 84°57'W.), the W extremity of Cuba, is low and covered with trees from 21 to 24m high, which become visible before the land, frequently having the appearance of vessels under sail.

The curve of the coast is so gradual that the position of the cape can only be identified by the lighthouse. The general area is reported radar conspicuous at 15 miles.

The shore is fronted by a shoal water coastal limit that, rising steep-to seaward, opens up as it progresses N from the less than 1 mile stretch abreast Cabo San Antonio.

Currents near the outer edge of the bank are confused, while tidal currents closer inshore set N on a rising tide and S on a falling tide at a velocity of about 0.5 knot. Tide rips are also present.

Temporary anchorage is available S of the lighthouse, with the SE extremity of the land bearing 135° and the W extremity bearing 023°.

Traffic Separation Scheme.—An IMO-adopted Traffic Separation Scheme has been established off Cabo San Antonio. Additionally, the area between the E separation lane and the coast has been designated an Inshore Traffic Zone. Vessels not utilizing the scheme are advised to avoid it by as wide a margin as is possible.

The coastline between Cabo San Antonio and Punta Hicacos, about 229 miles ENE, could be described as a gentle curve where the first half of its length forms many inlets, the entrances of which are quite wide.

The second half of this coastline forms a regular series of somewhat larger pocket inlets or bays of which the entrance is characteristically the narrowest part.

Bahia Honda, midway along the coastline, is the farthest W of these pocket bays, while Bahia de La Habana is well known.

The Archipelago los Colorados fronts about 100 miles of coastline from Golfo de Guanahacabibes to Bahia Honda and consists of a largely uninterrupted series of sunken dangers which, gradually closing the coast from SW to NE, rise steep-to seaward while enclosing landward a shoal water coastal margin scattered with more sunken dangers and numerous low-lying islets.

Several channels, available to small vessels with local knowledge, lead in through these dangers to a number of minor communities. The outer sunken dangers are seldom marked by breakers except during heavy weather and they are difficult to distinguish.

The shore beyond these dangers is so low and at such a distance from deep water, that vessels should use extreme caution in making their approach. In contrast to this particular coastline, the coast generally is clear and steep-to beyond the Archipelago los Colorados and as far as Punta Hicacos.

From Golfo de Guanahacabibes to Puerto de Cabanas, there is an uninterrupted range of hills and isolated peaks whose shapes are distinctive and that stretch out for 80 miles. Farther along the coast, particularly between Bahia Honda and Bahia de Matanzas, a number of natural landmarks point up the various inlets that may be of interest to ocean shipping.

4.4 Golfo de Guanahacabibes (22°08'N., 84°35'W.), close NE of Cabo San Antonio, a spacious open bay extends E through Ensenada de Guadiana to the Rio Guadiana, and N some 40 miles to the low-lying but quite swampy islet of Cayo Buenavista. It has general depths of over 7.3m aside from the fringing reef to seaward.

Golfo de Guanahacabibes is much encumbered with shoals and cays. The intricate nature of the channels through the reef makes local knowledge or pilotage essential.

The aspect of the surrounding shore is low, largely forested or scrub-covered flat land.

Banco de Sancho Pardo, the SW extremity of Archipelago de los Colorados, is a narrow ridge of above and below-water rocks and other sunken dangers. It confines the greater part of Golfo de Guanahacabibes to the NW and restricts the principal entrance into the bight to a 15 mile wide expanse of comparatively-unencumbered water between Las Calabazas, the charted SW extremity of the ridge, and Punta Cajon.

There is a wharf at La Fe (22°03'N., 84°16'W.) in poor condition. La Fe is a small fishing village on the E bank of the Rio Guadiana having limited facilities for the berthing alongside of shallow-draft small craft. The port is approached via Bahia Guadiana and a channel marked by a safe water buoy in Ensenada Juan Lopez. Local knowledge or a pilot is essential. A aero radiobeacon is located 5 miles NE of the port of La Fe.

Banco de San Antonio (San Antonio Knoll), close seaward of the entrance to the bight, is about 8 miles NW of Punta Cajon. It is a small steep-to coral bank with least depths of 18m, occasionally marked by short, choppy sea, resembling rip tides. In clear weather, it can be distinguished by a discoloration of the water above it. Patches, with depths of 3.6 to 5.8m, lie about 5 miles ESE and about 7 miles E of Banco de San Antonio.

Vessels with local knowledge and drawing no more than 6.1m can enter Golfo de Guanahacabibes so as to pass about midway between Punta Cajon and Bajos Las Calabazas, taking precautions to avoid Banco de Pizarro. This bank, located about 8 miles NE of Punta Cajon, has depths of 3.4 to 4.8m.

4.5 Fondeadero Los Arroyos (Arroyos Anchorage) (22°22'N., 84°26'W.), in Golfo de Guanahacabibes extreme NE part, has anchorage as charted with good holding ground and shelter from predominant winds. It is near a fishing port.

Elsewhere within Golfo de Guanahacabibes, the holding ground continues good, but hard patches of coral lie scattered about a bottom of widespread mud, coral sand. Currents are weak and dependent on the wind.

From Golfo de Guanahacabibes to Bahia Santa Lucia, the reef is marked by many lighted towers.

Traffic Separation Scheme.—An IMO-adopted Traffic Scheme has been established off the Archipelagode los Colorados in the vicinity of La Tabla Light and Banco Sancho Pardo, and may best be seen on the chart. An Inshore Traffic Zone has also been established shoreward of the inshore Traffic Separation Lane. Vessels not using a Traffic Separation Scheme should avoid it by as wide a margin as is practicable.

4.6 Bahia Santa Lucia (22°42'N., 83°58'W.) is a largely shoal water bay lying between the small island of Punta Jutias and the mainland point of Punta Tingo, about 5 miles to the E. The bay is located about 73 miles NE of Cabo San Antonio.

It is fronted by fields of mangroves and a low-lying terrain that rises gradually to hills in the interior. Seaward of the bay, there is a barrier of above and below-water dangers that lie approximately ENE of Punta Jutias, within a distance of 2.2 miles.

In the midst of these seaward dangers, there is a conspicuous thickly vegetated islet, Cayo Restinga del Palo. Pasa Honda is the passage into the bay, via a buoyed channel, through the reefs 2.5 miles NE of the light on Punta Jutias.

Bahia Santa Lucia is a jurisdictional adjunct to the harbor administration for Bahia de Mariel, the bay about 72 miles to the ENE. Vessels call here to load ore via lighter by daylight.

Depths—Limitations.—Patricio Lumumba Pier, reported to be in bad condition, has a length of 85m, with a depth alongside of 4.7m. One tug is available.

Punta Jutius Light

Pilotage.—Pilotage is compulsory. Pilots are arranged through Mariel with advance notice and will board off Pasa Honda. The channel is navigated during daylight hours only.

Directions.—Entrance to the onshore port facilities and the smaller anchorages is through Pasa Honda Channel, which has a width of 200m and a least depth over the bar of 5.2m.

The channel is marked by lighted buoys and contains two bends with dangerous narrows. The channel to the light wharf is 50m wide with a least depth of 4.9m.

Anchorage.—There are three designated anchorage berths for loading copper mineral and for the discharge of sulfur in bulk, as follows:

1. Anchorage No. 1 (Fondadero Poza Santa Lucia) has a length of 140m, for a maximum draft of 4.7m.
2. Anchorage No. 2 (Fondadero El Quebrado) has a length of 140m, for a maximum draft of 5.5m.
3. Anchorage No. 3 (Fondadero Exterior) has an unlimited length for a maximum draft of 10.9m.

4.7 Santa Lucia (22°40'N., 83°58'W.) at the head of Bahia de Santa Lucia, is a sub-port of Puerto del Mariel. Santa Lucia is a small community with lightering facilities occasionally used for transshipment of copper ore to vessels at anchor offshore. There are 2 alongside berths which include a sulfuric acid factory berth, and a transshipment dock; both of which are reported to be in poor condition.

The channel to Santa Lucia, marked by lighted beacons, was dredged to 4.5m in 1997. Pilotage is compulsory and can be ordered from Mariel 48 hours in advance. The pilot embarks one mile N of the Pasa Honda.

La Esperanza (22°47'N., 83°44'W.) is a port for small craft. It is approached through a channel, marked by stakes, passing along a break in the reef 5 miles N of the port. Local knowledge is required.

Aspect.—The coastline between Bahia de Santa Lucia and Bahia Honda, which is about 46 miles ENE, is rather irregular and to a considerable extent is confused by a narrow uninterrupted tangle of mangroves that form a perimeter along a low-lying coastal plain.

Offshore, a shoal water coastal rim having numerous low-lying islets and many sunken dangers impedes all but small vessels with local knowledge from making their destination to several communities lying along the shore.

One of the communities is Niagara, about midway along this 46 mile stretch, identified by a tall white conspicuous chimney standing at a nearby sugar mill.

Bahia Honda, about 120 miles NE of Cabo San Antonio, is a significant pocket bay, entered by way of a narrow comparatively-deep channel which, leading through a coastal edge of coral reefs, proceeds almost directly to several well-sheltered anchorages and alongside berthing facilities lying at a distance of not more than 2 miles from the open sea.

The surrounding terrain is largely flat and has a scattering of low-lying to rolling hills that gradually slope upward and meet the higher hills and more rugged land of the interior.

El Pan de Guajaibon (22°47'N., 83°22'W.) is one of these higher interior hills lying 13 miles SW of the town of Bahia Honda. It has a conspicuous 692m saddle-shaped summit, and is a landmark in identifying the bay from the open sea. Punta Gobernadora Light, 3 miles W of the bay, is also conspicuous.

4.8 Bahia Honda (22°58'N., 83°10'W.) (World Port Index No. 10070) is a jurisdictional adjunct to the harbor administration for Bahia del Mariel, the bay about 23 miles to the E. Vessels assigned to load at Bahia Honda do not have to enter

Mariel for clearance, but must pick up the pilot at the Mariel port entrance. Pilotage is compulsory. Tidal currents are negligible and do not impede navigation through the entrance channel.

The entrance channel has a rather sandy type bottom by the E side and a rocky bottom by the W side. The channel is approximately 150m wide. The maximum draft at LW at the entrance or on the bar is 8.5m, with a maximum length of 147m.

Vessels enter or leave during daylight only. Tugs are not needed for entry operations. The Ciro Redondo Berth (Darsena de Buenavista) situated near Punta Caiman on the W side of the entrance channel, has a length of 155m with a draft, of 8.6m. This berth is used as a base for the dismantling of vessels and loading of scrap iron.

The Central Harlem Dock located at Punta Gerardo on the SW side of the bay, will accept vessels with a maximum length of 137m, and a maximum draft of 5.7m. It has been reported in 2013 that this berth is in disrepair and no longer in use.

The Central Harlem Dock is presently out of service. Bunkers are not available.

Fondeadero Corojal (22°57'N., 83°11'W.) is the principal deep-water anchorage within Bahia Honda, lying midway between Punta Caiman and Punta Gerardo. Vessels anchor, in 10.7m, soft sticky mud, in a charted position with Punta Difuntos Range Beacon on Cayo del Muerto bearing 073°, distant about 0.7 mile.

Vessels loading at the Punta Gerardo transshipment terminal for the Central Harlem sugar mill may shift to the anchorage in order to load to deep draft.

Aspect.—Punta Caiman, on the W side of Bahia Honda entrance channel, is the site of an artificial basin dredged inland through soft coral and limestone and intended for the loading of pyrites.

The sides of the basin rise steep-to without any bulkhead facing so that vessels are usually backed in on an anchor and moored midway between off-lying pilings and dolphins.

Vessels enter and are moored generally just before sunset, when light winds are out of the NE thru E to SE.

Directions.—From a position about 2 miles NNW of the channel, proceed on the entrance range on a heading of 183° through the narrow entrance channel.

At times when the rear beacon is not visible from the sea, vessels steer for the front beacon and mark the limits of the channel by means of a distinct color difference between the deep water of the fairway and the shallow water of its lateral confines.

When about 0.8 mile from Punta Difuntos Beacon, they ease to starboard and, steering a SSW course, proceed either to the Corojal Anchorage or the Punta Gerardo berthing facility.

If proceeding to the latter berth, steer so as to pass close E of Bajo Tres Patas, a steep-to, hard and rocky shoal water patch lying about midway between Fondeadero Corojal and the entrance to the dredged channel leading to Punta Gerardo.

4.9 Puerto de Cabanas, situated about 10 miles E of Bahia Honda, is an excellent harbor divided into two landlocked bays having a common entrance from the sea. The surrounding terrain is quite hilly and rises to a ridge of higher hills.

It is reported (1995) that it is a prohibited zone and special permission is needed to enter.

Loma del Rubi (Pan de Cabanas) (22°53'N., 82°57'W.) serves as conspicuous landmark, particularly its E side, in identifying Puerto de Cabanas from sea.

The W side of the hill, rising to 428m, is not as easy to identify because of the clutter of the hills behind it, but from a closer view, a remarkable notch stands out and becomes a valuable landmark in the transit of Puerto de Cabanas entrance channel.

The Peninsula Juan Tomas, which divides Puerto de Cabanas into W and E parts, is a low-lying peninsula that extends well into the common seaward entrance and thereby creates the bifurcation channels Canal Orozco, leading into the W part, and Canal Cabanas, leading into the E.

Fuerte Reina Amalia stands in ruins on the N extremity of the peninsula and serves as a conspicuous landmark when approaching these channels from sea.

4.10 Cabanas (23°00'N., 82°58'W.) (World Port Index No. 10080) is the local administrative center for harbor and shipping activities carried on within Bahia Orozco and Bahia Cabanas.

This port, as with Santa Lucia and Bahia Honda, is a subport of Mariel, the bay 12 miles to the E. Pilotage is compulsory, with the pilot boarding off the entrance to Bahia del Mariel. Transiting to Puerto de Cabanas is during daylight hours only. Entering Mariel for clearance is not required before proceeding to Cabanas.

Tidal currents in the entrance have a flow of about 1.5 knots during the ebb, with a somewhat stronger out flow during the rainy season, but generally currents present no difficulty and vessels need not await slack water to enter.

Alongside berthing consists of the Pablo de la Torriente Brau Jetty which is located at the head of the W part of the bay and is 200m in length with an alongside depth of 6.6 to 7m.

4.11 Bahia del Mariel (23°01'N., 82°45'W.), about 12 miles E of Puerto de Cabanas, is well-sheltered and another typical pocket bay along this part of the coast.

The bay, accessible by means of a narrowed entrance channel leading into an unencumbered deep-water basin, provides a straightway approach to several alongside berthing facilities for ocean vessels.

The terrain embracing this area is generally low-lying on all sides except on the E side of the bay, where hills slope steeply upward, directly from the water's edge.

The W face of these hills has been quarried into a conspicuous white cliff.

Mesa del Mariel is an outstanding landmark about 8 miles ENE of the entrance to Bahia del Mariel. This is a high elongated plateau possessing a distinctive terrace at its E extremity and a remarkable steep slope at its W extremity. It was reported to be radar conspicuous.

The E side of the bay is marked by several tall chimneys of a cement works. With good visibility, these chimneys are visible some 12 miles at sea and the light-colored smoke forming a dense distinctive cloud from the cement works can be sighted for a distance of 25 miles.

The Cuban Naval Academy, a large group of white buildings, is located on the SE side of the bay standing on slopes behind the Mariel community. The Naval Academy serves as a very good landmark for the seaward approach to Bahia del

Mariel entrance channel. A signal station is located at Punta del Torreon on the E side of the entrance channel.

Mariel (22°59'N., 82°45'W.)

World Port Index No. 10090

4.12 Mariel is a port with considerable commercial importance, particularly with cement and sugar cargo.

Winds—Weather.—For information on winds and weather in Mariel, see paragraph 4.1.

Tides—Currents.—Mean High Water Springs rise 0.5m, while MHWN rise 0.3m. A W set, at a rate of 1 knot has been reported in the channel entrance extending up to 4 miles offshore.

Depths—Limitations.—The entrance channel is approximately 60m wide at its narrowest point and allows for a maximum draft of 9.4m for vessels up to 178m in length. Vessels between 178m and 202m in length can have a maximum draft of 7m. Vessels can enter and depart day and night. Berthing limitations can be found in the table titled **Mariel—Berthing Limitations**.

The operations at Mariel are all located on the E coast of the bay. The Mariel Container Terminal, formerly known as the Airport Terminal, will handle all cargo for Havana, allowing the port of Havana to focus on cruise ship traffic.

Pilotage.—Pilotage is compulsory. The pilot boards the vessel 1 mile N of Buoy No. 1 which marks the port entrance, 48 hours notice is required. Pilots for Cabanas, Santa Lucia, and Bahia Honda may be boarded off the port of Mariel. Notice of ETA should be sent on departure from the last port 10 days, 7 days, 5 days, 72 hours, and 24 hours prior to arrival.

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

1. Call sign: Mariel Practicos
2. VHF: VHF channels 13 and 16
3. Telephone: 53-47-398-152
4. E-mail: epmhr@cenial.inf.cu

Regulations.—See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for details on regulations pertaining to vessels in Cuban waters.

Mariel is a quarantine port for Habana. A large quarantine station is located on the same point, Punta Regla, as the harbor channel front range light.

Navigation by civilian vessels is prohibited in Ensenada de Lazo and along the S side of the Peninsula Agosta.

Anchorage.—There are three available anchorages. The first, Mujica, is charted 0.2 miles NNW of the pier at Punta Mujica. This location offers good holding ground, in 11m, mud bottom. The second area is found 0.4 mile SE of Punta Gorda, in 9m, mud, with good holding ground. The final area is located 0.5 mile SSW of Punta Gorda. This anchorage offers good holding ground, in 8.5m, mud bottom.

Directions.—By day, the center of the Naval Academy, in alignment with a large white tower on the bay's entrance point, leads from seaward. Range beacons, which may be seen on the chart, mark the entrance channel.

Caution—Navigation of civilian vessels is prohibited in Ensenada de Laza and along the S side of Peninsula Angosta on the west side of the harbor.

Mariel to La Habana

4.13 Between Bahia del Mariel and the entrance to Bahia de La Habana, about 25 miles ENE, the coastline is interrupted at regular intervals by a series of small inlets serving for the most part, as estuaries to a number of small coastal streams.

Mariel—Berthing Limitations

Berth	Berth Length	Depths Alongside	Maximum Draft	Remarks
Sugar Bulk Terminal	178m	10m	7.3m (bow) 9.4m (stern)	Maximum vessel loa of 202m
Andes Gonzales Lines Dock No. 2	200m	—	8.5m	Maximum vessel loa of 170m
Rene Arcay Cement Factory Pier (North Side)	140m	—	7.9m	—
Rene Arcay Cement Factory Pier (South Side)	—	—	—	Out of service
Osvaldo Padron Pier (West Side)	170m	—	8.5m	—
Osvaldo Padron Pier (East Side)	140 to 170m	—	8.5m	—
General Cargo Pier (two berths at Osvaldo Padron Pier)	170m	—	8.5m	—
Mariel Container Terminal				
Upper Berth	700m	—	15m	Berths are continuous
Lower Berth	700m	—	15m	Berths are continuous

Boca Del Rio Banes (23°02'N., 82°38'W.), 6.5 miles E of Bahia del Mariel, is a short somewhat confined unencumbered inlet where on its E shore, there is a small facility where sugar is loaded into lighters alongside a finger pier.

Bahia de La Chorrera (23°08'N., 82°25'W.) opens about 3 miles W of the entrance to Bahia de La Habana. The Rio Almendares flows into this inlet. The coast in the vicinity is low and ragged; the blackened coral of which it is composed is honeycombed by the sea. A light marks the river mouth.

The bay affords anchorage for small vessels with local knowledge, in depths of from 6.1 to 9.1m, coral sand, in a position having limited swinging room just within the entrance to the inlet. With winds from the NE and NW through N, the anchorage will be affected by a strong sea.

It is reported (1995) that it is a prohibited zone.

La Habana (Havana) (23°08'N., 82°20'W.)

World Port Index No. 10100

4.14 Bahia de La Habana, about 164 miles ENE of Cabo San Antonio, is one of the largest sugar shipping ports in the world. Sugar remains the mainstay of the economy in Cuba. Habana is the railroad center of the island and is acknowledged as the principal shipping center for the island.

Bahia de La Habana, a natural landlocked harbor, is sheltered, quite deep, and entered through a narrow channel straightway from the open sea.

Depths—Limitations.—The entrance channel has a mud bottom. A tunnel traverses the entrance channel as best seen on the chart. Several submarine cables emanate from the W side of the entrance below Castillo de la Punta. Four additional submarine cables are charted between the entrance and Castillo de la Fuerza.

A strong NE/SW current of as much as 2 knots has been observed across the harbor entrance.

The maximum draft throughout the bay (except the refinery quay) is 12.8m at LW. Tankers may enter drawing up to 11.4m as they take a special range line course once they are in the bay.

The port can be entered or sailed from, day or night. It is not necessary to wait for slack or a favorable tide, except tankers with an 11.2m draft which can enter only at HW. A 16.4m submerged wreck lies about 0.15 mile WSW of Castillo del Morro, just outside the mouth of the entrance channel. An 8.9m rock lies on the E side of the channel, about 0.2 mile inside the entrance; two rocks, 10.6m and 10.8m, lie on the W side of the channel about 0.3 mile inside the entrance.

The harbor offers berths for a variety of cargo. Vessels are urged to contact the local authorities for the latest information on harbor and berth depths before planning a voyage here. For berthing details refer to the table titled **Havana—Berth Infomation**.

Aspect.—The port is entered with Castillo del Morro to the E and Castillo de la Punta to the W. From seaward, the difference between the topographical features E and W of the harbor assist in identifying the entrance. The land E of Castillo del Morro is about 60m and flat, but 19 miles E is the prominent ridge, named Sierras de Jaruco.

At about the same distance W is an unmistakable notch or gradation in the E end of Mesa de Mariel, a long flat ridge of moderate elevation.

Havana—Berth Infomation

Berth	Berth Length	Depth Alongside	Maximum Draft	Remarks
Terminal Sierra Maestra				
No. 1 (N side)	202m	9.7m	9.0m	Cruise/passenger vessels.
No. 1 (S side)	202m	9.7m	9.0m	Cruise/passenger vessels.
No. 2 (N side)	202m	9.7m	—	Cruise/passenger vessels.
No. 2 (S side)	184m	9.7m	—	Cruise/passenger vessels.
No. 3 (N side)	191m	9.7m	—	Cruise/passenger vessels.
No. 3 (S side)	172m	9.7m	—	Cruise/passenger vessels.
Terminal Margarito Iglesias				
No. 4N	135m	6.1m	4.9-6.0m	General cargo. Maximum loa of 100m.
No. 4S	137m	6.1m	4.3-7.4m	General cargo. Maximum loa of 145m.
Terminal Arcelio Iglesias				
North	158m	10.5m	7.4-9.4m	General cargo. Maximum loa of 147m.
South	158m	10.3m	6.0-9.4m	General cargo.
Dock	185m	8.5m	—	—
Terminal Juan Manuel Diaz				
No. 1S	162m	10.2m	8.6-10.0m	General cargo.

Havana—Berth Infomation				
Berth	**Berth Length**	**Depth Alongside**	**Maximum Draft**	**Remarks**
No.1 N	153m	7.0m	—	General cargo.
Dock	147m	7.3m	—	General cargo.
Astilleros del Caribe (Asticar)				
No. 1 and 2	222m	8.2-8.4m	—	Refrigerated cargo.
No. 3	90m	8.2-8.4m	—	Repair berth.
E side of pier	126m	8.2-8.4m	—	Repair berth.
W side of pier	126m	8.2-8.4m	—	Repair berth.
No. 4	222m	8.2-8.4m	—	Repair berth.
No. 5	128m	8.2-8.4m	—	Repair berth.
Terminal Haiphong				
Quay 1	532m	—	—	Container.
Quay 2	211m	—	9.3m	Container.
Terminal Porto Pena				
No. 16	147.5m	—	9.4m	General cargo. Continues quay length of 493m.
No. 17	147.5m	—	9.0m	General cargo. Continues quay length of 493m.
Other Piers				
Muelle Turcios Limas	200m	—	9.7m	Grain.
Andres Gonzalez Lines Dock	382m	—	9.7m	Bulk fertilizer and coal. Reported (2014) to be no longer in use.
Mulle de la Terminal de Contenedor-es de la Habana	457m	—	11.2m	Containers.
Mulle Jose A Echevarria	198m	—	9.7m	Grain.
Regia	190m	—	10.0m	General cargo.
Caribbean Drydock Company				
Pier 3.1	290m	—	6.3m	Repair and maintenance of vessels. Maximum loa of 292m.
Pier 3.2	74m	—	6.3m	Repair and maintenance of vessels.
Pier 3.3	223m	—	6.3m	Repair and maintenance of vessels.
Pier 3.4	218m	—	6.3m	Repair and maintenance of vessels.
Pier 3.5	99m	—	6.3m	Repair and maintenance of vessels.
Pier 3.6	210m	—	6.3m	Repair and maintenance of vessels.
Pier 3.8	97m	—	6.3m	Repair and maintenance of vessels.
Terminal Nico Lopez				
Pier No. 1 (N)	245m	—	—	Oil products. Vessels up to 40,000 dwt, with a maximum loa of186m and a maximum beam of 36.0m can be accommodated.
Pier No. 1 (S)	245m	—	—	Oil products. Maximum loa of 230m. Maximum beam of 36.0m.

Havana—Berth Infomation				
Berth	Berth Length	Depth Alongside	Maximum Draft	Remarks
Pier No. 2 (N)	270m	11.4m	—	Oil products. Maximum loa of 30m,. Maximum beam of 36.0m.
Pier No. 1 (S)	270m	11.4m	—	Oil products. Maximum loa of 230m. Maximum beam of 36.0m.

There are a multitude of imposing structures constituting the metropolis of La Habana. Hill of the Jesuits, rising in La Habana, is flanked on its N side by a conspicuous 67m high monument visible seaward during clear weather at a distance of better than 20 miles.

Castillo del Morro, an old fortification on the N side of the seaward end of the entrance to the bay, is the site of the Castillo del Morro Light, the principal lighted navigation aid for Bahia de La Habana. The loom of the lights of the metropolis itself is reported visible on a clear night at 25 miles.

Pilotage.—Pilotage is compulsory for all foreign vessels. See also the General Remarks topic in paragraph 4.1. The pilot boards about 1 mile NW of the harbor.

The pilots can be contacted, as follows:

1. Call sign: Habana Practicos
2. VHF: VHF channels 13 and 16
3. Telephone: 537-866-9731
   537-862-9944
4. E-mail: prhabana@cenia.inf.cu

Regulations.—Vessels should contact the signal station at Castillo del Morro prior to entry into port, by calling “Morro Havana”.

Speed in the harbor is restricted to as slow as consistent with safety, but in no case may exceed 6 knots.

Terminal Sierra Maestra should be given as wide a berth as practicable to avoid wash damage to the terminal.

Anchoring or trailing anchor in the entrance channel is prohibited.

Vessels in quarantine should proceed to Mariel, about 23 miles W of Habana.

Signals.—For general information on signals, see paragraph 4.1.

Visual signals are exhibited from the signal station at Castillo del Morro.

Special storm signals are displayed from Castillo de Morro during the hurricane season. A red flag with a black center is the appropriate signal indicating the approach of inclement weather. At this signal, vessels should double up with extra mooring lines.

Contact Information.—The port signal station, located at Castillo del Morro (call sign: Morro Habana) may be contacted on VHF channels 13, 16, and 68.

The port authorities (call sign: Habana Capitania) may be reached on VHF channels 16 and 68.

The container terminal (call sign: Terminales Contenedores) operates on VHF channels 16 and 74.

Anchorage.—Anchorage outside the harbor, charted at Fondadero del Morro, is not recommended, due to the presence of submarine cables and poor holding ground. Anchorage is available at Fondadero La Trasajera in the central part of the harbor as shown on the chart. The anchorage offers hard mud, good holding ground, in 11 to 12m. Additional anchorage is available in the E part of the harbor at Fondadero Gallinero as charted.

Three mooring buoys lie S of the pier areas in Ensenada de Marimelena, S of the town of Casablanca.

Caution.—Occasionally, powerful lights are displayed from the dome of the capitol in La Habana. When visible well seaward, these lights with their intensity may confuse the mariner with Castillo del Morro Light.

Silting has caused less than charted depths in the bay, more specifically in the N part and on the W side in the vicinity of the finger piers.

An occasional heavy swell, induced by a strong NW wind, and a dangerous surge caused by large vessels using excessive speed entering the bay, have damaged vessels berthed at facilities near the inner end of the entrance channel.

The water within Bahia de La Habana is full of marine growth and is badly polluted; consequently ship condensers can be seriously damaged.

La Habana to Matanzas

4.15 Between Bahia de La Habana and Bahia de Matanzas, another of Cuba’s more important ports, the 48-mile coastline closely approximates the parallel of 23°10'N. The coast is broken by regularly spaced inlets which, being quite small and shoal, serve as estuaries to a number of minor coastal streams.

The terrain close inland is largely low-lying as far as Santa Cruz del Norte and then rises relatively high with a scattering of conspicuous headlands rising abruptly from the shore.

Santa Cruz del Norte (23°09'N., 81°55'W.) is situated about 24 miles E of Bahia de La Habana. It is only a small community of no particular interest to shipping, but in helping to identify the area, there is a distillery having a tall chimney, and two storage tanks seen clearly from sea.

Central Hershey sugar mill, 2 miles to the SW of Santa Cruz del Norte, has three tall chimneys that stand on an elevation 118m high and provide an excellent landmark from sea.

This is most evident between January and June when the sugar mill is usually brightly lighted for its nighttime operation. Lights are located along this stretch of coast 0.7 mile W of the mouth of the Rio Canasi and at Punta Seboruco 4 miles W of the approach to Bahia de Matanzas.

4.16 Bahia de Matanzas (Puerto de Matanzas) (23°04'N., 81°31'W.) ranks among the largest on the N coast of Cuba. Unlike other inlets or typical pocket bays, the entrance, between

the low-lying point of Punta de la Maya and the low steep-to cliffs of the shore 2.7 miles to the W near Punta Sabanilla, is its widest part, while the greater portion of this area is characterized by depths of over 200m.

The shore is largely steep-to, clear of off-lying sunken dangers; there is also a remarkable uninterrupted formation of a low-lying facing of rock.

The terrain surrounding the area just described is rather flat except for its W part which then falls away abruptly into the landlocked Valle de Yumuri, a valley renowned as one of the most picturesque in Cuba.

Loma El Pan de Matanzas (23°02'N., 81°42'W.) lies 7 miles W of the head of Bahia de Mantanzas and represents a prominent landmark.

It is a ridge, 390m high, which from the NE, appears as an isolated rounded mountain and from the NW, as three hummocks of which the middle one rises above the others.

Tetas de Camarioca (23°00'N., 81°19'W.) is prominent, consisting of several high and conspicuous summits rising above the flat terrain around it.

Two aeronautical lights, shown from the high ground on the W side of Bahia de Matanzas, are visible for a distance of 35 miles.

Matanzas (23°03'N., 81°35'W.)

World Port Index No. 10110

4.17 Matanzas is a tourist center and significant sugar exporting community which, together with its suburbs Versalles and Pueblo Nuevo, lies at the head of Bahia de Matanzas. The harbor area adjacent has a free trade zone at San Severino Castle.

Winds—Weather.—Winds are commonly out of the NE except on occasion when for a brief period (1 or 2 days), they initially blow as a fresh land breeze from the SW and then veer slowly with a diminishing force to the NW before reappearing out of the NE.

A fresh NE breeze drives a rather heavy swell into the inlet while N winds, common between September and January, tend largely to interrupt the appearance of any land breeze.

Tides—Currents.—The currents within the inlet are very slight, and caused only by the fresh water discharge from the several small rivers.

Depths—Limitations.—Bajo Nuevo, a shoal with a depth of 3.2m, and Bajo La Laja, with a depth of 2m, are two sunken dangers of rock and small stones which, lying offshore near the head of Bahia de Matanzas, partly define the seaward side of a small basin or anchorage area having its shoreward side encumbered by the shoal water coastal bank filling the head of the inlet. La Laja is a buoyed shoal, 137m by 320m. Bajo Nuevo is also buoyed.

Several deep-water passages lead in from the sea around and between these rocky dangers.

The port, situated at the mouths of the Rio Yumuri and the Rio San Juan, is formed by the inlet 5 miles long and 3.5 miles wide. There is deep water up to 122m from the shore; depth in the fairway is over 200m.

For berthing information, see the table titled **Matanzas—Berth Infomation**.

Pilotage.—Pilotage is compulsory and should be ordered at least 24 hours in advance. Pilots embark 1M SE of Punta Sabanilla. See the General Remarks section in paragraph 4.1.

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

1. Call sign: Matanzas Practicos
2. VHF: VHF channels 13 and 16
3. Telephone: 534-5245-524

The boarding ground is located 1.5 miles W of Punta de la Maya. Pilots for Cardenas are obtained here. During bad weather, the charted pilot station near Terminal Reynolds Garcia may be used.

Regulations.—Vessels with a cargo capacity of 150 tons or more are prohibited from an area along the coast from a point 3 miles NW of Punta Maya extending NE to a point 4 miles NW of Cayo Piedras del Norte, as seen on the chart.

Matanzas—Berth Infomation

Berth	Length	Depth	Vessel Size	Remarks
Supertanker Base				
No. 1	241m	13.6m	85,000 dwt	Crude oil and petroleum products.
No. 2	295m	17.0m	150,000 dwt	Crude oil and petroleum products.
No. 3	207m	12.0m	—	Petroleum products.
Dubrocq Wharf				
No. 1	160m	9.0m	—	General cargo. A maximum loa of 210m is permitted by encroaching onto the second berth.
No. 2	160m	9.0m	—	General cargo.
Other Piers				
Jesus Menendez	240m	8.5m	80,000 dwt	Petroleum products.
Morales Bayona	230m	11.5m	—	Molasses and pressurized LPG.
Frank Pais Pier	162m	6.4m	—	Petroleum products and dry cargo.

Matanzas—Berth Infomation				
Berth	**Length**	**Depth**	**Vessel Size**	**Remarks**
Reynold Garcia Pier				
Northeast side	162m	9.7m	—	Chemicals, ammonia, and dry cargo.
Southwest side	210m	11.6m	—	Bulk sugar. Can accommodate vessels with a draft of 10.8m and an loa of 252m.

All vessels loading or discharging cargo, including coastal trade, must follow local regulations. Vessels in regular trade between Matanzas and Cardenas must keep in constant contact with the coast radio station while in transit.

Anchorage.— Four separate anchorage areas are charted. Fondadero del Norte has good holding ground, in 11m, mud. Fondadero del Medio, W of Bajo La Laja, has depths of 8 to 12m. Fondadero del Sur provides good holding ground in 7 to 12m. Fondadero del Indio provides close in anchorage to small vessels, in 4.9m. All of these anchorages can utilize Castillo San Severino (23°03.6'N., 81°33.5'W.) as a reference.

Directions.—Vessels destined for the anchorages just mentioned and the berthing facilities within this bay usually proceed through the middle of the outer part of the inlet and then steer according to destination.

Matanzas to Caibarien

4.18 An IMO-adopted Traffic Separation Scheme has been established off this coast and may best be seen on the chart. See also the General Remarks section in paragraph 4.1.

Punta Frances (Punta Icacos) (23°12'N., 81°09'W.), the N extremity of the Peninsula de Hicacos, is low and sandy but can be identified by the buildings of a salt works near it. Punta de Molas, its E extremity, is low-lying.

The whole length of the seaward side of the peninsula has a fine beach and is broken only in a few places by low cliffs; the highest and most prominent of these, situated 4.5 miles SW of Punta Frances, is named Bernardino.

Varadero (23°08'N., 81°19'W.), Cuba's biggest tourist development, is situated on a low part of the peninsula near its junction with the coast, 7.5 miles SW of Punta Frances. An aero radiobeacon is located 4 miles SW of Vardero.

From seaward, this community is identified with numerous hotels. At night, the lights of this resort area are conspicuous.

Caution.—A restricted area, best seen on the chart, which is prohibited to all tankers, dry cargo vessels and vessels with a carrying capacity of more than 150 tons except tour ships, extends as much as 7.5 miles offshore between **Punta de la Maya** (23°06'N., 81°29'W.) and **Cayo Piedras del Norte** (21°58'N., 81°07'W.).

4.19 **Bahia de Cardenas** (23°05'N., 81°10'W.), lying under the excellent NW shelter of the low rather heavily-populated Peninsula de Hicacos, described above in paragraph 4.18, is a spacious but predominately shoal water bay. Its seaward entry is scattered with small low-lying islands.

There are several deep water passages leading in through these islands from the NW and join a narrow dredged channel as depicted on the chart, to the community of Cardenas at the head of the bay.

The shallow bay opens to 9 miles in width, NW to SW and from 6 to 10 miles long W to E.

Depths—Limitations.—The entrance channel between Cayo Mono and the coral shore SW has an initial depth of 9.1m and then decreases to 6.4 to 6.7m. The channel is well-buoyed.

The maximum draft permissible is 5.2m; the maximum permissible length is approximately 171m.

Canal de Buba, which is about 2 miles long, will not accommodate larger vessels except at slack water. This channel, dredged to a reported depth of 7.3m through rock and sand, is also dredged in its continuation to a similar depth but through a mud bottom. The last section is paralleled to the E by a largely sunken ridge of dredged material and portions of the section are reported to have less than charted depths.

The most generally-used passage leads between Cayo Mono and a 5.8m shoal area about 1 mile to the SW of Cayo Mono. This shoal area is marked by a buoy moored about 0.2 mile WSW of the shoal, and during heavy weather by breakers.

A second passage leads between Cayo Piedras del Norte and Cayo Monito, an above-water rock about 1.5 miles to the SW. A marine reserve, best seen on the chart, has been established to the NW of Cayo Piedras del Norte. Vessels must remain clear of this area as well as the designated restricted area.

Aspect.—In the approach to Bahia de Cardenas from the W, the tall buildings of the beach resort come into view first and then the 27m high summit of the peninsula.

The light on the low reef-fringed rocky islet Cayo Piedras del Norte is then defined.

Cayo Piedras del Norte Light

In the approach from the N, Tetas de Camarioca appears first during clear weather, followed by the summit on the Peninsula

de Hicacos, the two neighboring islets Cayo Piedras del Norte and Cayo Mono and then the islands farther in toward the entrance to the bay.

In the seaward approach from the E and N of Cayo Cruz del Padre, the high land of the Peninsula de Hicacos usually appears first followed by Cayo Mono, which more often than not becomes visible before the light on Cayo Piedras del Norte.

Pilotage.—Pilotage is compulsory in Bahia de Cardenas and for its immediate seaward approaches.

Pilots board off Matanzas; if bound for the facilities at Cardenas, they must arrive at least 3 hours before sunset so as to navigate the approximately 14 miles to destination during daylight only. From the pilot's boarding point to the facilities, there is about 4 hours sailing time, including maneuvers to the Jose A. Echavarria Pier in Cardenas.

Anchorage.—There is anchorage outside of the bay for vessels awaiting a pilot, in depths of from 8.2 to 13.4m, sand over coral, in a position anywhere within a triangle formed between Cayo Mono and Cayo Piedras del Norte and extending SE to Lighted Buoy No. 1, which marks a charted 5.2m isolated patch.

An approximately 1 square mile area in the SE portion of the anchorage is to be avoided because of the question of depth and "bottom shift." There are deep anchorages at Cayo Diana, 9 miles from the pier, in depth of 5.6m.

Vessels can anchor in the bay about 3 miles from the pier, in a depth of 4.5m.

Directions.—Vessels intending to enter Bahia de Cardenas by way of the generally-used passage between Cayo Mono and Cayo Piedras del Norte, approach from the NW clear of the Restricted Area, steering a course such that the higher appearing islet Cayo Chalupa, about 5.5 miles distant, bearing 173°, lies a little open to port.

Proceed to pass Cayo Mono abeam to port at 0.5 mile. Continue on to pass E of the 5.8m coral head and W of the sunken danger marked by Lighted Buoy No. 1.

Thereafter, alter course when lined up to enter Canal Buba, and continue to proceed to enter the canal. Two obstructions in the approach to Canal Buba, each marked by a single post, are located about 2.5 miles N and NE of Punta de Molas.

Sometimes, when loaded vessels are outbound in the channel, inbound vessels with a draft no greater than 4.6m, swing wide and enter Canal Buba from the E. Inbound vessels with a similar draft are commonly kept to the W of the inner dredged channel after having passed a position about 3.5 miles SW of Cayo Diana.

4.20 Cardenas (23°02'N., 81°12'W.) (World Port Index No. 10120) is an active transshipment center in Cuba for the export of sugar. It has been reported (2011) that commercial shipping activity in the port has decreased. Pilotage is now provided by the port of Matanzas.

Depths—Limitations.—The dredged channel leading to the pier has a draft limitation of 6.1m.

Jose A. Echavarria Pier (Cardenas Pier) is 750m long, with the following draft restrictions:

Berth	Maximum Draft
Southeast No. 1	4.3m
Southeast No. 2	4.0m
Northwest No. 1	5.3m
Northwest No. 2	4.3m

4.21 Between Bahia de Cardenas and Puerto Sagua la Grande, 60 miles E, the coast is mostly low-lying, quite swampy, and largely fringed by fields of mangroves.

Fronting this shoreline is a shoal water coastal edge extending some 6 to 20 miles offshore, and rising everywhere steep-to along its seaward limit.

Although the area is considered adequately surveyed, there are few landmarks to identify with and consequently ocean-going vessels are advised to stay well off this part of the coast, particularly between Cayo Cruz del Padre and Cayo Bahia de Cadiz.

Cayo Cruz del Padre (23°16'N., 80°55'W.) lies about 13 miles ENE of Punta Frances. It is a low-lying mangrove-fringed islet off Cuba's N coast. From seaward there is dangerous partially-drying reef which can be distinguished in calm weather by discoloration in the surrounding water and identified in heavy weather by the waves breaking over it. Cayo Cruz del Padre Light, a white concrete tower on a square base, is located off its NE point.

Courtesy of QMC Jonathan Royster

Cayo Cruz del Padre Light

Cayo Bahia de Cadiz (23°12'N., 80°29'W.), marked by a light, is a flat islet about 24 miles ESE of Cayo Cruz del Padre; it is rocky along its N side and somewhat higher than other islets in the near vicinity. Bahia de Cadiz, a shoal water bay close

SW of the islet, has anchorage as charted for small vessels with local knowledge in a position somewhat sheltered from predominating NE winds but open to N winds.

4.22 Puerto Sagua la Grande (22°58'N., 80°03'W.), approximately 133 miles E of Bahia de La Habana, fronts the Rio Sagua la Grande and includes all the waters within a much encumbered portion of the coastal edge extending some 13 miles between the small craft entrances, Boca de Sagua la Grande and Boca del Seron.

Cayo del Cristo Light, about 6 miles N of the Rio Sagua la Grande, is the only readily identifiable landmark in the area.

Other than the light, numerous small mangrove-covered islands, confuse the area and are taken as the coastline when in fact the coastline lies some 5 to 6 miles farther away.

There is one principal entrance to Puerto Sagua la Grande, that being Canal Boca de Maravillas, an improved channel to accommodate ocean-going shipping.

The canal has been dredged through sand, clay, mud, coral, and rock and leads in from the sea and then between Cayo de la Cruz and Cayo Maravillas. The well-buoyed channel is approximately 6 miles long and 91m wide, with a minimum depth of 7m.

Being open NE, there is frequently a very heavy sea in Boca de Maravillas and, at such times, vessels of more than 3.7m draft may not be able to enter.

Caution.—Dredged material has been deposited on each side of the channel where it lies uncharted and is built up in the form of partially-drying banks.

4.23 La Isabella (Isabela La Sagua) (22°57'N., 80°00'W.) (World Port Index No. 10130), a small community at the entrance to the Rio Sagua la Grande, is the port and sugar transshipment center for Sagua la Grande, a community located about 12 miles farther upstream.

The approach to La Isabella is through Canal Boca de Maravillas. The bottom is sandy and of coral reef, hard rock, mud, and clay. The turns are not dangerous except in the narrow portions where both the current and type of bottom make them dangerous. The canal is well buoyed.

Depths—Limitations.—The Espignon Amezaga Pier, on the SW side, has a length of 100m, with a depth alongside of 6.9m. Cargo handled includes general cargo and sugar.

The Espigon Alfert Pier on the E side has a length of 170m and a width of 9m, with alongside depths of 5.4m at its base and 6.1m elsewhere. Cargo handled includes general cargo and molasses.

The Begueristain Pier is no longer in service.

Pilotage.—Pilotage is compulsory but are available only during daylight hours. Pilots board vessels about 1.5 miles NE of Punta Practicos then proceed into Puerto Sagua la Grande. Pilots may be contacted on VHF channel 16 and require a 72 hour notice.

Anchorage.—Inner Anchorage No. 1 is situated about 300m NW from the berths. The maximum draft allowed is 7.3 to 7.6m, depending on the vessel's length. Vessels load or discharge at this anchorage by means of barges.

Anchorage No. 2 is situated close S of Cayo Paloma. The maximum draft allowed is 4.5m. Vessels load and discharge at this anchorage by means of barges, but it is chiefly used for vessels awaiting a berth.

The outer anchorage is situated E of Cayo Del Christo and about 8 miles from Isabela. Vessels with a length of 190m can safely load up to drafts of 10m.

Puerto de Caibarien (22°37'N., 79°15'W.), about 46 miles ESE of Puerto Sagua la Grande, is a shoal water area, somewhat elongated, that extends from its seaward entrance near Cayo Frances to Caibarien, a well-populated community on the isolated mainland about 15 miles WSW.

The principal deep-water activities lie centered within the main anchorage, 16 miles from Caibarien, for vessels up to 6.1m draft.

4.24 Caibarien (22°32'N., 79°28'W.) is a major sugar transshipment center having numerous facilities for the accommodation of lighters shuttling to and from the comparatively deep-water anchorage just mentioned.

Depths—Limitations.—Operations are carried out at Cayo Frances anchorage by lighters, but operations are suspended in bad weather.

There are nine piers at Caibarien. These piers are used for the shipment of raw sugar in barges which are then towed to the Cayo Frances anchorages where the vessels are loaded. All the piers, with the exception of Maritima Pier, which has a depth of 2.6m, have 2.1m alongside.

Aspect.—A light is displayed from Cayo Frances on Punta del Asta. It is reported (2009) that the light is extinguished.

Pilotage.—Pilotage is compulsory. Pilots board the vessel 0.5 mile from Catalina Lighted Buoy at the entrance to Cayo Frances anchorage, and generally bring vessels into the anchorage during daylight only. Communications with the pilot are on VHF channel 13 or 16.

Anchorage.—The main anchorage at Cayo Frances is easily accessible. The bottom is of mud and sand and the Port Buoy anchorage is of stone but free of reefs. Vessels may enter or sail from the anchorage with any draft up to 10.6m.

When vessels have a draft of less than 6.1m, they must proceed to the inner anchorage (La Caldera). If more than 6.1m but less than 7.9m, they proceed to the outer anchorage (La Poza). Those with a draft over 7.9m and up to a maximum of 10m proceed to the third anchorage (Port Buoy). Vessels may enter at any time and tugs are not necessary for entering/sailing maneuvers.

Note.—Caibarien is reported inactive (1995) and the depths were less than 2m.

Old Bahama Channel

4.25 Old Bahama Channel, separating Great Bahama Bank from the N coast of Cuba, allows passage from the Atlantic via Crooked Island Passage to the Straits of Florida or the Gulf of Mexico via Nicolas Channel or Santaren Channel.

See paragraph 4.1 for information on weather and currents in the channel.

An IMO-adopted Traffic Separation Scheme has been established within Old Bahama Channel, and may best be seen on the chart. Additionally, the area between the S traffic separation line and the coast has been designated an Inshore Traffic Zone.

Between Puerto de Caibarien and Puerto de Nuevtias, about

140 miles ESE, the coast continues, largely fringed by fields of mangroves, very swampy, and low-lying in its profile.

It is fronted by a shoal water coastal margin, which for the greater part of its length, extends some 20 miles off an isolated mainland and forms the steep-to Cuban side of Old Bahama Channel, before narrowing considerably and almost disappearing off the entrance to Bahia de Nuevitas.

There are a number of lagoons formed by small islands lying off this coast, but for other than small craft that may want to venture into these lagoons, there is no interest to ocean shipping.

The SW side of Old Bahama Channel is considered quite dangerous for a distance of about 34 miles between Cayo Paredon Grande Light and Cayo Confites Light.

Vessels are advised to make good a mid-channel course and proceed with caution.

Cayo Paredon Grande Light

Cayo Confites is low and lies close within the outer edge of the bank, with depths of less than 200m, 4 miles N of Cayo Verde.

A reef that dries, extends 1 mile SSE from Cayo Confites and a channel 0.1 mile wide, separates the cay from a fringing reef that dries.

There are beacons on either side of the break, a red one on the N end and a green beacon on the S end. A light is shown from a tower, 20m high, standing on the N side of Cayo Confites.

It was reported that two stranded wrecks lay on the reef. A third beacon, "Confites," lies close SW of Cayo Confites in position 22°08.7'N, 77°41.7'W. This beacon marks the W (inner) side of an anchorage.

The anchorage at **Cayo Confites** (22°10'N., 77°40'W.) is the only anchorage on the S side of Old Bahama Channel between Puerto de Isabela de Sagua and Bahia Nuevitas in which a larger vessel, over 3.7m draft, can seek shelter.

Vessels intending to enter Cayo Confites anchorage proceed to a position on the coastal edge where Cayo Verde bears 191° and Cayo Confites extremity bears 314°.

From this point, a vessel steers 270° until the S extremity of Cayo Confites bears 344°. The vessel then hauls to starboard and takes heading of about 323°, and when Cayo Confites extremity bears 050°, distant 0.5 mile, they anchor in a charted depth of 6.7m.

The Cuban coast from Cayo Confites to Cayo Sabinal is marked, generally, by sandy beaches, numerous lagoons, and swamps and skirted by broken reefs. Punta Matermillos Light, about 4 miles NW of the entrance to Puerto de Nuevitas, is the principal landmark in the identification of the area.

Bahia de Nuevitas (21°32'N., 77°14'W.), about 190 miles WNW of the E extremity of the island, is an extensive landlocked bay and one of the two largest pocket bays on the entire Cuban coast (the other is Bahia de Nipe). It is entered through a narrow deep-water channel 7 miles long.

The bay is divided by a somewhat hilly and heavily scrub-covered peninsula (Peninsula del Guincho) extending 3 miles E from the SW side of the bay. Bahia Nuevitas lies SE of the Peninsula del Guincho and Bahia de Mayanabo lies NW of the peninsula.

The towns of Pastelillo and Puerto Tarafa, sub-ports of Nuevitas, lie on the SE and NW sides of the peninsula respectively. The terminal of Bufadero lies on the NE side.

The surrounding coastal terrain is low-lying, flat, and without distinguishing features except for the hills on the dividing peninsula and the nearby conical islets Cayo Ballenato Grande and Cayo Ballenato del Medio which, rising above the lowland, are visible from the sea.

An IMO-adopted Traffic Separation Scheme has been established in the waters off Bahia de Nuevitas, as may best be seen on the chart.

An Inshore Traffic Separation Zone has also been established between the S Traffic Separation Lane and the coast.

Nuevitas to Punta Maisi

4.26 **Nuevitas** (21°33'N., 77°16'W.) (World Port Index No. 10150), together with the nearby deep-water alongside berthing facilities at Punta Bufadero, Pastelillo, and Puerto Tarafa, form the port, and constitute the principal sugar transshipment center for Cuba.

Tides—Currents.—A strong tidal current reaches a velocity of 3 to 4.5 knots. It nevertheless, falls slack for a period of about 2 to 3 hours after HW or LW on the coast.

Depths—Limitations.—The entrance between Punta Sotavento and Punta Practicos is through a series of four sharp turns. The channel is reported to be over 9.1m deep.

In 1994, it was reported that the maximum vessel dimensions to enter and sail were a maximum draft of 10.3m and a maximum length of 195m. It is recommended that vessels enter or depart during daylight only.

Tankers up to 14,000 dwt can use the channel without difficulty, but care is advised because of the sharp turns and speed of currents. The inner part of the entrance is obstructed by the shoal Bajo del Medio, 3 miles from the entrance.

For berthing information, see the table titled **Nuevitas—**

Berth Information.

Pilotage.—Pilotage is compulsory. Pilots will board vessels at Punta Practicos, about 1 mile N of No. 1 Buoy, the area which marks the port entrance.

If there is inclement weather, the pilot will board between Punta Sotavento and Punta Saleadores. Not less than 24 hours notice should be given when ordering a pilot.

See paragraph 4.1 for further information.

The pilots can be contacted, as follows:

1. Call sign: Nuevitas Practicos
2. VHF: VHF channels 13 and 16
3. Telephone: 53-32-412827
4. E-mail: pilotn@enet.cu

Anchorage.—There are ample anchorage zones close to the place of operations where vessels have a good swing area. Anchorages are used as waiting places when piers are occupied, although loading or discharging operations are occasionally carried out.

Botijuela Anchorage, 0.6 mile SE of Cayo Ballenato Grande, is the largest, with depths of 11 to 14m, hard mud. The anchorage can accomodate as many as 15 vessels up to 170m long.

The anchorage at Tarafa is found 0.4 mile N of the Tarafa Pier complex, in 6m. It is limited to one vessel at a time.

Caution.—Many dangers are found in the entrance channel. Vessels entering or leaving port must remain within the marked channel. Only small craft may venture outside the channel limits.

4.27 The coast between Puerto de Nuevitas and Punta Maisi fronts directly on the open sea without any other significant obstruction than a narrow shoal water coastal margin on either side of Puerto Cayo Moa.

In identifying this part of the coast for a distance of about 189 miles, there are a number of natural landmarks, but in particular, Silla de Gibara, in the W, and Loma El Yunque, in the E, are excellent references.

The coastline is indented by numerous inlets and pocket bays where vessels find anchorage well-sheltered from prevailing winds, but SE of Punta Guarico these conditions do not exist, as the anchorages are not well-sheltered.

Bahia de Manati (21°24'N., 76°48'W.), about 21 miles SE of Puerto de Nuevitas and 165 miles WNW of Punta Maisi, is a typical pocket bay having a deep-water straight and quite lengthy entrance channel that leads into a largely shoal water basin fringed, almost without exception, by fields of mangroves.

The entrance channel, with facilities at Puerto Manati, is of interest to ocean shipping; the inner bay is not.

4.28 **Puerto Manati**(Manati) (21°22'N., 76°50'W.) (World Port Index No. 10158), a small community on the W side of Bahia de Manati entrance channel, is a sub-port of Puerto Padre. Sugar is the principal commodity handled at Puerto Manati. It is reported (1995) to be inactive.

Depths—Limitations.—The entrance channel is narrow and deep and averages depths from 15.2 to 18.2m, with the exception of a pass near Carenero Shoal, where the depth is 11.5m at low tide. Its bottom is irregular, being partly sandy.

Manati Wharf (La Gloria Wharf) is an L-shaped pier, 141m long. The pier has an E and W side, but only the E side is used; a maximum draft of 9.6m can be accommodated. It was reported (2003) to be in a state of disrepair. The port is used to export sugar from the Argelia Libre sugar mill.

Nuevitas—Berth Information

Pier	Length	Depth alongside	Remarks
Bufandero Pier			
North side	142m	7.8m	Not in use
South side	142m	7.8m	—
Main Cement Pier	110m	6.1m	Cement
Pastelillo Pier			
North side	195m	9.4m	General, bagged and bulk sugar, molasses, and petroleum products
South side	150m	9.0m	Bulk sugar
Guincho	106m	6.0m	—
Tarafa Terminal			
Pier B—Northeast side	180m	7.3-7.9m	General cargo
Pier B—Southeast side	180m	7.0-7.7m	General cargo
Pier C—Northeast side	180m	7.9-8.2m	General cargo
Pier C—Southeast side	180m	7.6-7.9m	General cargo
Pier D—Northeast side	180m	8.2m	Bulk sugar
Pier D—Southeast side	180m	7.9-8.2m	General cargo

Vessels sailing to this port are limited in draft, as follows:

Length	Maximum Draft
Up to 152m	7.9m
152 to 160m	6.1m
Over 160m	5.1m

Aspect.—The surrounding terrain is low and there are no distinguishing features. The best landmarks are considered to be Bahia de Manati Light,reported visible by day at a distance of 8 miles, and a gray brick chimney standing in the port.

Easily distinguishable are the heavily forested hill Loma Tabaco, 2 miles W of Puerto Manati, and Cerro Dumanuecos, a 129m high conspicuous sugarloaf hill which is about 11 miles SW of Bahia de Manati entrance.

Pilotage.—Pilotage is compulsory. Pilot boards about 1 mile outside the seaward entrance to Bahia de Manati and usually proceeds to the destination during daylight hours only. Vessels should provide ETA a minimum of 24 hours in advance.

It is not necessary to await slack water for entry or sailing, but considering the large tonnage of vessels presently entering the port for topping off, if there is a strong current pilots must wait until the current loses some of its velocity in order to avoid accidents.

See the General Remarks section in paragraph 4.1 for additional pilotage information.

Anchorage.—Anchorage for vessels awaiting berthing is available 0.1 mile SE of the pier near Punta Apostoles. The bottom is mud and sand, with good holding ground.

4.29 Bahia de Puerto Padre (21°14'N., 76°32'W.), about 17 miles ESE of Bahia de Manati and 149 miles WNW of Punta Maisi, Cuba's E extremity, is divided into two well-sheltered landlocked bays having a common entrance from the sea.

Punta Mastelero Light, standing at the seaward entrance to Puerto Padre, is reported to be visible at a distance of 6 miles, and is the principal landmark in identifying the area.

The entrance itself is reported to be radar conspicuous at 5 miles. Other than these marks, the surrounding terrain is lowlying and largely without distinguishing natural features.

4.30 Puerto Padre (21°12'N., 76°36'W.) (World Port Index No. 10160), at the head of Bahia de Puerto Padre, with its principal maritime activities centered at Cayo Juan Claro, is situated in one of the richest and most important sugar cane zones in Cuba.

Depths—Limitations.—The entry is funnel-shaped at its mouth. It has three turns, but the one to take into consideration when maneuvering vessels over 160m long is the "Carenero" turn, although vessels with a length of 172m have entered this port.

The entrance is marked by Buoy No. 1 and Buoy No. 2 E of Punta Mastelero; the length of the channel is about 2 miles. The maximum width of the channel is 219m with a minimum width of 137m. The depth on the bar is 8.2m. The bottom is rocky in the entrance channel and muddy in the bay.

Puerto Carupano—Berth Information		
Pier	**Length**	**Depth**
Sugar wharf	300m	8.5-9.1m
Molasses wharf	129.5m	9.1m

Owing to the current in the channel, vessels must await slack water for entering and departing. The largest vessel handled had a maximum length of 170m. Vessels up to 168m long can enter or leave at all times and have a maximum draft of 7.6m. Vessels over 168m long can have a maximum draft of 7.3m and must enter or leave in daylight.

Current set and velocity outside the entrance is largely dependent on local conditions, while in the bay area of the entrance they are negligible.

A dangerous wreck has been reported W of Puerto Carupano about 0.5 mile NE of Punta La Morena.

Loading and or discharging operations are carried out at Puerto Carupano (Cayo Juan Claro), approximately 3 miles from Puerto Padre.

Pilotage.—Pilotage is compulsory. Vessels making their approach, steer for Punta Mastelero Light on a heading of 190° and board pilots during calm weather not less than 1 mile seaward of Punta Mastelero. Vessels should send their ETA at least 24 hours prior to arrival and include a request for a vessel movement permit.

Regulations.—Vessels must arrive and depart at slack water. Vessels over 168m LOA are restricted to daylight movements. Tugs are compulsory for tankers and all vessels over 130m in length. For vessels of 170 to 186m LOA, a minimum of 2 tugs is required.

Anchorage.—Anchorage is available W of Cayo Juan Claro about 0.6 mile SW of Punta La Morena, in 7m, mud and shell bottom.

The quarantine anchorage is E of Cayo Juan Claro. Up to three vessels 170m in length can anchor, in depths of 5 to 7m.

A stranded wreck is located in the NW part of the quarantine anchorage as seen on the chart.

An anchorage has been reported about 0.2 mile W of Cayo Juan Carlo. This anchorage is close NE to a dangerous wreck, as seen on the chart.

4.31 Puerto Gibara (21°06'N., 76°07'W.), about 25 miles ESE of Puerto Padre, and 124 miles WNW of Punta Maisi, is a small and mostly shoal water bay.

Silla de Gibara (21°02'N., 76°05'W.), an outstanding feature mentioned earlier in the text, lies about 6 miles SSE of the Puerto Gibara entrance. It appears as a saddle-shaped hill having a rocky gray summit rising to 307m.

Cerro Colorado and Cerro Yabazon, 254m and 246m high, respectively, are two conspicuous hills lying within miles WSW of Silla de Gibara.

Lomas de Cupeicillo are a series of forested hills and conspicuous ridges, rising from 150 to 245m, and extend 10 miles to the W of Puerto Gibara.

4.32 Gibara (21°07'N., 76°08'W.) is a small community on a gentle slope on the W side of Puerto Gibara.

Tides—Currents.—Tides and currents are negligible, but the discharge from the Rio Cacoyuquin and the Rio Gibara after heavy rains can sometimes cause a current to set N along the side of the entrance at about 0.2 knot.

Depths—Limitations.—The pier has alongside depths of 4.3m.

Aspect.—A light is exhibited at Punta Rasa, about 3 miles N of Gibara.

Pilotage.—Pilotage is compulsory. Pilots board about 3 miles seaward of Puerto Gibara entrance during calm weather, and usually enter by day only.

Anchorage.—Anchorage can be taken either on the E side of the entrance, where they will lie almost broadside to a swell that sets in when the predominating NE wind is blowing, or on the W side, in 5.5 to 7.3m, which lies with the bow heading by the wind and swell.

Vessels are unable to berth alongside the pier with winds from the S and are troubled in either anchorage with winds from the N.

4.33 Bahia de Bariay (21°05'N., 76°01'W.) is entered between Punta La Mula (Desiree) and Cayo Bariay 0.7 mile SW. It is a small shoal water bay providing temporary anchorage for vessels with local knowledge, in about 7m, white sand and coral, in a position close inshore off the second sandy beach S of Punta La Mula. It is fully open to the N and during the winter months it is unsafe.

Bahia de Jururu, close W of Bahia de Bariay, is completely sheltered, entered through a narrow channel blocked by a bar, and only suitable for small craft.

Bahia Vita (21°05'N., 75°57'W.) is another bay of the pocket bay series along the N Cuban coast. It is located about 9 miles E of Puerto Gibara and 115 miles WNW of the E extremity of the island of Cuba.

A narrow, intricate, and quite deep channel leads to deep water alongside a berthing facility at Puerto Vita. Because of the largely flat terrain surrounding this area, vessels at Puerto Vita are discernible from sea.

4.34 Puerto Vita (21°05'N., 75°57'W.) (World Port Index No. 10190) is a sub-port of Gibara in Oriente Province. Vita operates as a small sugar trans-shipment center at the head of Bahia Vita.

Depths—Limitations.—Vita Pier, on its N side, has a length of 125m, with a depth of 9m. Facilities exist at the wharf for coastal tankers.

Aspect.—Central Rafael Friere (Santa Lucia) sugar mill, about 4 miles SSW of Bahia Vita entrance, is an excellent landmark. It is a tall white chimney that is considered to be the best mark, but an isolated hill rising to 121m, with its summit having a conspicuous outcropping of white rock and appearing as a white washed vertical stripe, is also an excellent aid to the mariner.

It is reported that the summit is visible 10 to 12 miles seaward. At night, the light at Punta Barlovento, on the E side of the port entrance, can be seen from as far as 10 miles.

Pilotage.—Pilotage is compulsory. The pilot boards 3 miles from the entrance channel. Entry and departure are during daylight hours only. Tugs are compulsory.

Anchorage.—Vita anchorage is located about 190m NE of the pier. It is recommended only for medium-sized vessels because of the insufficient swinging area.

Directions.—Strong N winds can make entry difficult. Entry through the bay is through a narrow channel.

Vessels, in making their approach to Bahia Vita from the W, steer for the 121m high hill close E of the bay and proceed to the clear cut seaward end of the entrance channel.

An alternate, somewhat easier, approach is to steer for the conspicuous Central Rafael Freire sugar mill chimney on a heading of 180° and, upon closing the coast, haul to port and proceed to the destination.

4.35 Bahia de Naranjo (21°06'N., 75°53'W.), about 5 miles E of Bahia Vita, is another small pocket bay, but there are no facilities and no pilots. The bay provides well-sheltered anchorage from all winds for the medium-sized vessel. A well-buoyed deep-water fairway leads to the small boat facilities in the SE corner of the bay. Deep water anchorages can be found in the W half of the bay.

The W side of Bahia de Naranjo is marked by a high, flattened wooded hill rising to 105m and on the E side there is an isolated sugarloaf hill. At about 3 miles SE of the entrance, a high flat-topped ridge having a white precipitous W slope, will come into view.

Bahia de Naranjo entrance itself can be distinguished by the conspicuous red scarp at Punta Barlovento, the entrance, and a large hotel immediately to the E.

The drying coastal reef NNE of Punta Barlovento extends almost 0.7 mile offshore.

Vessels making their approach, steer for Bahia de Naranjo entrance on a heading no greater than 175°, so as to pass W of the sunken dangers extending N from Punta Barlovento, and then proceed in mid-channel to the destination.

An underwater park, marked by numerous orange mooring buoys has been established in the bay. Boats and other objects were submerged within the park boundaries for use in recreational diving. They are marked by mooring buoys.

Anchorage.—Vessels can anchor in depths of 16.5m, coral, close S of Punta Barlovento or, proceeding farther into the bay and to the SW, in 11 to 14.6m, with Maesta de Naranjo's center area bearing 236°. On this latter bearing, Maesta de Naranjo has a conical appearance.

Bahia Sama (21°07'N., 75°46'W.), about 11 miles to the E of Bahia Vita, is a shoal water inlet, limited by an obstructed entrance, allowing vessels drawing no more than 4.4m to enter. The mean tidal range is about 0.6m.

Pan de Sama, a rounded hill about 4 miles SSW of the Bahia Sama, stands out well against a wooded flat to undulating terrain and is a good landmark.

4.36 Sama (21°07'N., 75°46'W.) is located on the W side of the bay. Sama is the site of a small community engaged in tourist-related activities. The entire bay has been reported (1995) shoaled in. Sama no longer has any commercial (non-tourist) activities.

Aspect.—From Bahia Sama to Bahia de Banes, which is about 15 miles distant, the coastline protrudes considerably to the E. Sandy beaches, fronted generally by a margin of sunken

reefs, are the prevalent features along this coast. The interior is heavily wooded.

Anchorage.—The anchorage off the boating dock has a depth of 3m. Further S, the bay shoals to 1m. The anchorage is open to winds from the N.

4.37 Cabo Lucrecia (Punta Lucrecia) (21°04'N., 75°37'W.) is one of the principal landfalls for vessels proceeding along the N coast of Cuba. For a mile or two on each side of Cabo Lucrecia, the coast has a low profile and consists of a white low scarp partially interrupted by sandy beaches. Close inland, trees and mangrove cover the terrain.

A light is shown from a prominent stone tower, 37m high, standing on the point. A stone dwelling stands at the rear of the light tower.

Cabo Lucrecia Light

An IMO-adopted Traffic Separation Scheme has been established in the waters off Cabo Lucrecia and may best be seen on the chart.

Additionally, an Inshore Traffic Zone has been established between the S Traffic Separation Lane and the coast.

Bahia de Banes (20°54'N., 75°43'W.) is a deep-water, almost totally landlocked, and quite well-sheltered pocket bay. The entrance channel is both narrow and tortuous. The entrance itself is very hard to identify until quite close.

Bahia de Banes is difficult to recognize from the sea. From a position about 12 miles to the W, there are three grouped hills, useful in identification in that they are equal in elevation, serrated in appearance, steep-to on the NE side, and sloping on the SW. Close NE of these hills is a conspicuous rounded or somewhat saddle-shaped hill. It has been reported (2011) that commercial shipping had ceased in this bay.

4.38 Puerto Banes (20°55'N., 75°42'W.), a community on Bahia de Banes N side, is the port for Banes, a community 3 miles to the N.

Depths—Limitations.—Boca de la Bahia de Banes (Canal El Canon), the narrow entrance channel for Bahia de Banes, is comprised of a corkscrew-shaped gorge with depths of 18.4m. The minimum depth in the channel is 9.1m over a bottom of rock and coral about 0.7 mile from Fuerte Point. Vessels should enter on daytime slack water only. Vessels over 500 dwt should engage a tug for the gorge transit.

Maximum length of a vessel that can transit the gorge is 106m. Shoals that exist in the channel are plainly distinguished and also marked.

In the approach, Bahia de Banes Light is useful. The light is situated about 0.2 mile S of Fuerte Point, but it should not be confused by day with the light at the nearby entrance to Bahia de Nipe. At the extremity of Punta Penasco the N side of the entrance, there is a masonry house which is visible up to 2 or 3 miles away.

Not only are the sharp hairpin turns of the canal crucial, but its seaward end is open to the prevailing NE winds while its interior length is subject to tidal current which can attain a velocity of 6 knots. Slack water occurs 40 to 45 minutes after HW and LW along this side of the coast.

At Puerto Banes, Nicaragua Pier (formerly Banes Pier) has a maximum length allowed of 106m, draft of 5.1m at the base and 5.7m at the head. The pier is in very bad condition and is reported out of service.

At Macabi, 2.5 miles across the bay, there is a wooden L-shaped pier, 76m long, with a least depth of 5.8m alongside. Vessels always dock port side-to. The pier is in ruins and is unusable.

Pilotage.—Pilotage is compulsory. Vessels should embark the pilot at position 20°53'N, 75°39'W, 1 mile NE of Bahia de Banes Light. The pilot station is located at Embarcadero de Banes (Puerto Banes). The vessel's ETA should be passed in advance.

Signals.—Traffic signals for vessels entering the bay are displayed on Boca de la Bahia de Banes seaward entrance S side.

Anchorage.—Macabi Anchorage is located 0.2 mile SSW of Nicaragua Pier. The maximum allowable draft is 9.4m, with a maximum length of 109m. The bottom is soft mud, but anchors hold well.

Another anchorage is found 0.2 mile NW of Cayo Iguana, in 9 to 10m, mud.

Additional anchorage is located 0.3 mile N of Cayo La Raya, in 6 to 7m, mud and sand, good holding ground.

4.39 Bahia de Nipe (20°47'N., 75°42'W.) is entered about 8 miles SE of Bahia de Banes. It is one of the largest pocket bays on the entire Cuban coast. Another is Puerto de Nuevitas.

The bay is extensive, well-sheltered, quite deep, almost land-

locked, and entered by means of a very deep and easy to transit channel. It is influenced by strong tidal currents. Slack water occurs some 40 to 45 minutes after HW and LW along the coast.

Nipe Bay is suitable for large vessels with a maximum draft up to 22.8m and a length of up to 400m. The principal destinations within the bay consist of the ports of Saetia, Felton, Preston, and Antilla. Bahia de Nipe entrance, from the E, appears as a steep-sided notch, while from the N, it cannot be distinguished at any great distance. Remarkable is the Rio Mayari which, emptying into Bahia de Nipe, cuts a notch into Sierra de Cristal and is visible well to sea. Closer into the entrance, breakers can be distinguished first and then the structures for the lighted range at Ensenada del Cristo.

Anchorage.—Anchorage is available at several locations around the bay, for which the local authorities and the pilot should be consulted.

About nine vessels, with maximum drafts of 9.1 to 17m and lengths up to 170m, can be accommodated at the Point Salinas Anchorage.

Corojal Anchorage, 0.4 mile W of the pier, can accommodate two vessels, with a draft of 6m and a length of 170m.

Antilla Anchorage No. 2, 0.4 mile SE of the pier, can accommodate two vessels with a draft of 7.1m and a length of 170m.

4.40 **Antilla** (20°50'N., 75°44'W.) (World Port Index No. 10230) is the principal shipping center for Bahia de Nipe and is situated on the NW shore of the bay. Sugar is the main cargo handled and vessels berth alongside anytime.

Depths—Limitations.—There is safe approach and no turns other than steering so as to avoid the spit extending from Punta Ramon, and compensating for a possible S set onto sunken dangers about 2 miles inside the bay. The width of the approach is 0.7 mile via a buoyed channel with mud bottom.

Antilla will accept cargo vessels up to 169m in length and tank vessels up to 139m in length. The maximum draft for vessels calling at the port is 6.1-6.7m.

There are three berths available at Antilla. The Coast Wharf is used for discharging oil and cereal and loading molasses. It has a length of 133m with a depth of 6.4m. Arrival and departure is undertaken in daylight hours only at No. 3 Pier.

Berth No. 4 is for loading bagged raw sugar and molasses and unloading general cargo. The N side can accommodate a draft of 4.0m at its base and 5.8m at the head over a length of 170m. Silting is an ongoing problem. The S side has a depth of 6.1m at the base and 6.7m at the head over a length of 170m. Several other wharves are in disrepair and are not used.

Pilotage.—The pilot station is located in Antilla. Upon receipt of a vessel's ETA, Mambisas Antilla Agency immediately informs the pilots who depart to Saetia to await to board the vessel at the embarkation point in position 20°47'46"N, 75°32'15"W, which is located 1 mile NW of Punta Mayari. A wreck lies close SE of Punta Mayari on the reefs.

4.41 **Guatemala** (Preston) (20°46'N., 75°39'W.), about 7.5 miles WSW of Punta Mayari, is a sugar transshipment center and sub-port of Antilla. The Rio Mayari, which discharges near the berthing facility, causes a great deal of silting and therefore dredging is necessary to maintain the required depths. The pier has three berths and a length of 199m. Vessels may load to a draft of 3.3m forward and 6.0m aft. The pier was reported (1992) to be in ruins.

Felton (20°45'N., 75°36'W.) (World Port Index No. 10250) is a small community on Bahia de Cajimaya's W side, which is located about 1 mile E of the mouth of the Rio Mayari. Felton is a sub-port of Antilla and is an iron ore transshipment center.

Vessels are urged to contact the local authorities for current information on the berths before docking.

The berth here is reported to be able to accept vessels up to 169m in length with a maximum draft of 8.2m. One vessel at a time can be handled.

Saetia (20°47'N., 75°34'W.), about 3 miles WSW of Punta Mayari, is the site of a small banana plantation. It is fronted by a berthing facility having an alongside depth of 10.4m.

Bahia de Levisa (20°43'N., 75°31'W.), entered about 5 miles SW of Bahia de Nipe, is a small well-sheltered but obstructed and almost totally landlocked pocket bay.

It has been reported that it is a prohibited zone. Special permission is needed to enter.

Accessible by a very narrow, intricate, and quite deep entrance channel, Nicaro, on Lengua de Pajaro, is the center of maritime activity in Bahia de Levisa.

4.42 **Nicaro** (20°43'N., 75°33'W.) (World Port Index No. 10260), a sub-port to Antilla in Bahia de Nipe, is a trans-shipment center for sugar and nickel ore in bulk.

Depths—Limitations.—Nicaro Pier has two berths. The N side, with a length of 156m and a depth alongside of 9.1m; can accommodate vessels up to 145m long, with a maximum draft of 8.5m. Cargo handled includes general cargo, fuel oil, diesel oil, and liquid ammonia. The S side, with a length of 156m, and alongside depths of 6.7m to9.1m at its head, can accommodate vessels up to 104m long. Cargo handled includes anthracite coal, nickel, and general cargo.

Bunkers are generally available, but arrangements should be made 48 hours in advance.

The entrance to Nicaro is risky for vessels over 107m long due to the narrowness and sharp turns, some of which are nearly 90°. Vessels of this length, up to a maximum allowed length of 156m, require tug assistance and all vessels should enter or sail during daylight hours.

Pilotage.—Pilotage is compulsory. The pilot station is located at Saetia in Nipe Bay. Vessels enter only at slack water and during daylight and wait at the pilot station.

Anchorage.—Anchorage No. 1 is located about 0.6 mile SW of Point Gorda, in depths of 11 to 13m, mud. Anchorage No. 2 is located about 0.5 mile NE of the pier head, in depths of 10 to 11m, mud and sand.

4.43 Bahia de Sagua de Tanamo (Puerto Tanamo) is located about 9.5 miles ESE of Bahia de Levisa and is entered directly from the sea through a deep, but intricate channel.

It has been reported (1995) that a prohibited zone exists. Special permission is needed to enter.

The surrounding terrain is hilly and rises inland in a succession of uneven hills to Sierra del Cristal, a conspicuous mountain range some 13 miles to the S.

Bahia de Sagua de Tanamo is concealed from the sea and is difficult to identify from well offshore. The entrance is similarly difficult to identify and the light structure situated on the

low-lying E entrance point cannot be easily seen by day at a distance greater than 3 miles.

Boca de Tanamo, the entrance channel to Bahia de Sagua de Tanamo, is a short, quite deep, but intricate passage. Transit is complex because of a difficult near right angle turn, a fairway that narrows to a navigable width of less than 0.1 mile opposite Punta Gitano (West Point), and a tidal current setting fair through the channel, but at a velocity of 3 knots or better.

If proceeding to the anchorage, the limiting dimensions are considered to be a length of 152m, with a draft of 8.5m.

4.44 Puerto de Sagua de Tanamo (Tanamo) (20°42'N., 75°19'W.) (World Port Index No. 10270) is suitable for deep-draft vessels. Sugar and molasses are transshipped from Puerto Tanamo.

Depths—Limitations.—The entrance channel is shaped like an "S," with rocky and muddy bottoms in many parts. There are near 90° turns, narrow and dangerous parts. Use caution in the approaches.

The principal berthing facility in Bahia de Sagua is Punta Gorda Pier (Tanamo Wharf). The N side has a length of 105m, with depths alongside of 6.4 to 6.7m. The S side also has a length of 105m, with depths alongside of 6.4 to 7.3m. Cargo handled includes the export of raw sugar, refined sugar, and molasses.

The largest vessel to enter the port had a maximum length of 180m, with a maximum draft of 10.6m. Vessels over 120m in length require the assistance of a tug.

Pilotage.—Pilotage is compulsory. Pilots board about 1 mile seaward of Boca de Tanamo and enter by day during near slack water only. The time of entry is critical because of the strong tidal currents mentioned earlier.

Tugs are normally not available, but arrangements for their service can be made through authorities at Cayo Mambi

Anchorage. —Anchorage is available as charted about 0.8 mile ENE of Punta Gorda, in 12 to 14m, mud. The holding ground is good and as many as six vessels may be accommodated.

4.45 Bahia Cebollas (Puerto Cebollas), located about 10 miles E of Bahia de Sagua de Tanama, is a smaller multi-branched inlet composed of intricate deep-water passages in the interior with access from a narrow unmarked deep-water channel from the sea. Though quite deep, Bahia Cebollas is suitable only for small craft.

Bahia de Cananova (Puerto de Cananova), about 3 miles E of Bahia Cebollas, is an inlet which, although quite shoal throughout its inner reaches, is fronted by an unmarked openended deep-water pool allowing vessels the opportunity to occasionally load bananas, lightered out from several plantations in the area. It is reported that a local pilot is available.

Bahia de Yaguaneque Puerto de Yaguaneque), close E of Bahia de Cananova, is a small, largely shoal water pocket bay which is entered from the sea by a narrow unmarked deep-water cut.

It will accommodate only small craft with local knowledge. The approaches to all three bays are dangerous with an onshore N wind.

The coast on either side of Puerto Cayo Moa, for a distance of about 20 miles between Bahia de Yaguaneque and the low-lying point **Punta Guarico** (20°37'N., 74°44'W.), is fronted throughout by a coastal shelf that extends about 2 miles offshore to an unbroken barrier of drying reefs and sand flats indicated by breakers.

There is a shoal water lagoon which occupies a good deal of the area between the outer dangers and the mainland. From the shoreline of the mainland, the terrain rises rapidly to lofty interior mountains Cuchillas de Toa (Cuchillas de Toar).

4.46 Puerto Cayo Moa (20°41'N., 74°52'W.) (World Port Index No. 10280) and its environs is a deep-water area which, located S of Cayo Moa Grande, lies inshore of and somewhat sheltered by the outer barrier of the coastal margin.

It is accessible through an extremely deep cut that, passes E of the low-lying mangrove-covered islet Cayo Moa Grande, and leads to deep-water facilities at Ensenada Yaguasey.

Depths—Limitations.—The entrance channel, Quebrado de Moa, is 0.8 mile long, 0.1 to 0.3 mile wide, and quite deep. It is almost straight, with two very slight turns. Entry or departure is during daylight only. A lighted range marks the entrance.

The channel leads to a basin containing mineral loading facilities. Both Moa Piers 1 and 2 can accommodate vessels with a maximum draft of 11.9m.

Cargo handled include bulk sulfur, general cargo, and nickel and cobalt concentrates.

Three wharves are in the vicinity of Punta Parajaros. Wharf No. 1 has two berths which can accommodate a maximum loa of 163m and a maximum draft of 8.5m over a total berthing length of 360m. Wharf No. 2 can accommodate a maximum loa of 110m and a maximum draft of 8.5m. Wharf No. 3 can accommodate a maximum loa of 110m and a maximum draft of 8.5m.

Vessels are urged to consult the local authorities for the latest information before planning a voyage here.

An offshore mooring berth, with three mooring buoys, is located 1.2 miles E of Punta Yaguasey, from which a submarine pipeline extends SW to the shore at Punta la Fabrica.

Pilotage.—Pilotage is compulsory. See also the General Remarks section in paragraph 4.1. Pilots embark 2 miles NNE of the entrance.

Anchorage.—Available is available about 1 mile ENE of Punta Yaguasey, in 14 to 16m, mud and sand.

4.47 Bahia de Yamaniquey (20°34'N., 74°43'W.) is a subport of Baracoa located 3 miles S of Punta Guarico. The bay is approached through breaks in the reef. The bay is suitable for small craft only and the entrance is dangerous, except in very calm weather. Vessels proceeding to Yamaniquey must first proceed to Barocoa where a pilot will be boarded.

Bahia de Taco (20°31'N., 74°40'W.) is a miniature pocket bay and anchorage for small vessels with local knowledge. A short unmarked dog-legged channel, with the shore banks on either side steep-to, has a fairway with depths of 9m.

The sea breaks with considerable force against the rocky coast on the W side of the entrance and tends to obscure it, thus making it all the more difficult to enter Bahia de Taco. In making an approach, vessels steer for the conspicuous S extremity of **Punta Sotavento** (20°32'N., 74°40'W.), on a heading of 240° and thereafter, proceed in mid-channel to the anchorage.

El Yunque (background) in Bahia de Baracoa

Bahia Navas (Puerto Navas), 10.5 miles SE of Punta Guarico, is a very small, easily entered pocket bay, having a straight deep-water entrance leading to a good shelter against prevailing winds. The bay is open to the N. The entrance has depths of more than 18.3m and is 61m in width.

Bahia de Maravi (Puerto de Maravi), 15 miles SE of Punta Guarico, is a deep-water inlet having anchorage available, but is only secure during favorable weather conditions since the inlet is open to prevailing winds.

A power line, with an approximate vertical clearance of 20m, spans the entrance.

Bahia de Baracoa (20°21'N., 74°30'W.), located about 21 miles WNW of Punta Maisi, is a very small but relatively deep-water bay open to the E and accessible directly from the open sea.

The surrounding terrain is hilly and heavily scrub covered. Bahia Miel, a deep-water cove, is backed inland by a somewhat flat, broad river valley leading to high interior hills.

4.48 **Baracoa** (20°21'N., 74°30'W.) one of the oldest communities in Cuba, lies on the E side of Bahia de Baracoa where it is a sub-port of Moa and Punta Gorda and serves as a transshipment center for bananas, coffee, and coconuts. It is principally used by coastal traffic.

Depths—Limitations.—The pier is in the SE corner of the bay with depths alongside of 3m.

Aspect.—Loma El Yunque, about 4 miles to the W, is considered the best landmark in the identification of Bahia de Baracoa in that it is a conspicuous steep-sided flat-topped high hill, rising to 589m, which, with clear visibility, can be seen for 40 miles, particularly from the NE.

Tetas de Santa Teresa, two hills about 4 miles SSE of Bahia de Baracoa, and Loma Majayara, close SE of Bahia Miel, are three conspicuous hills, remarkable at a distance of 24 miles with clear visibility.

Pilotage.—Pilotage is compulsory. The pilot boards 2 miles in front of the port of Moa. The entrance channel is straight. Vessels up to 120m long with an 8m draft may enter the channel, but only in daylight hours.

Anchorage.—Bahia de Baracoa has anchorage, in 7.3 to 9m, mud and sand, close to the town, W of the beached hulk.

Bahia Miel has anchorage somewhat sheltered from E winds, in 9.2m, sand, about 0.2 mile SW of Punta Playuela. Vessels frequently lie here so they may communicate with Baracoa without entering the bay.

Caution.—Caution is advised when using this anchorage as it is open to a heavy swell sent in by prevailing winds, particularly during winter when N and NE winds can become strong.

4.49 The coast for a distance of about 22 miles between Bahia de Baracoa and Punta Maisi alternates with flat or sloping grasslands and high heavily-forested hills.

The Rio Yumuri, a river with its entrance about midway along the coast, reaches the sea through a spectacular steep-sided gorge cut into marine terraces that encompass much of the E extremity of Cuba.

Bahia de Mata (Puerto Mata) (20°18'N., 74°23'W.), entered between Punta de Mata and Punta Sotavento, 0.3 mile NW, will accommodate only small vessels not exceeding 91m in length or a draft not exceeding 4.6m.

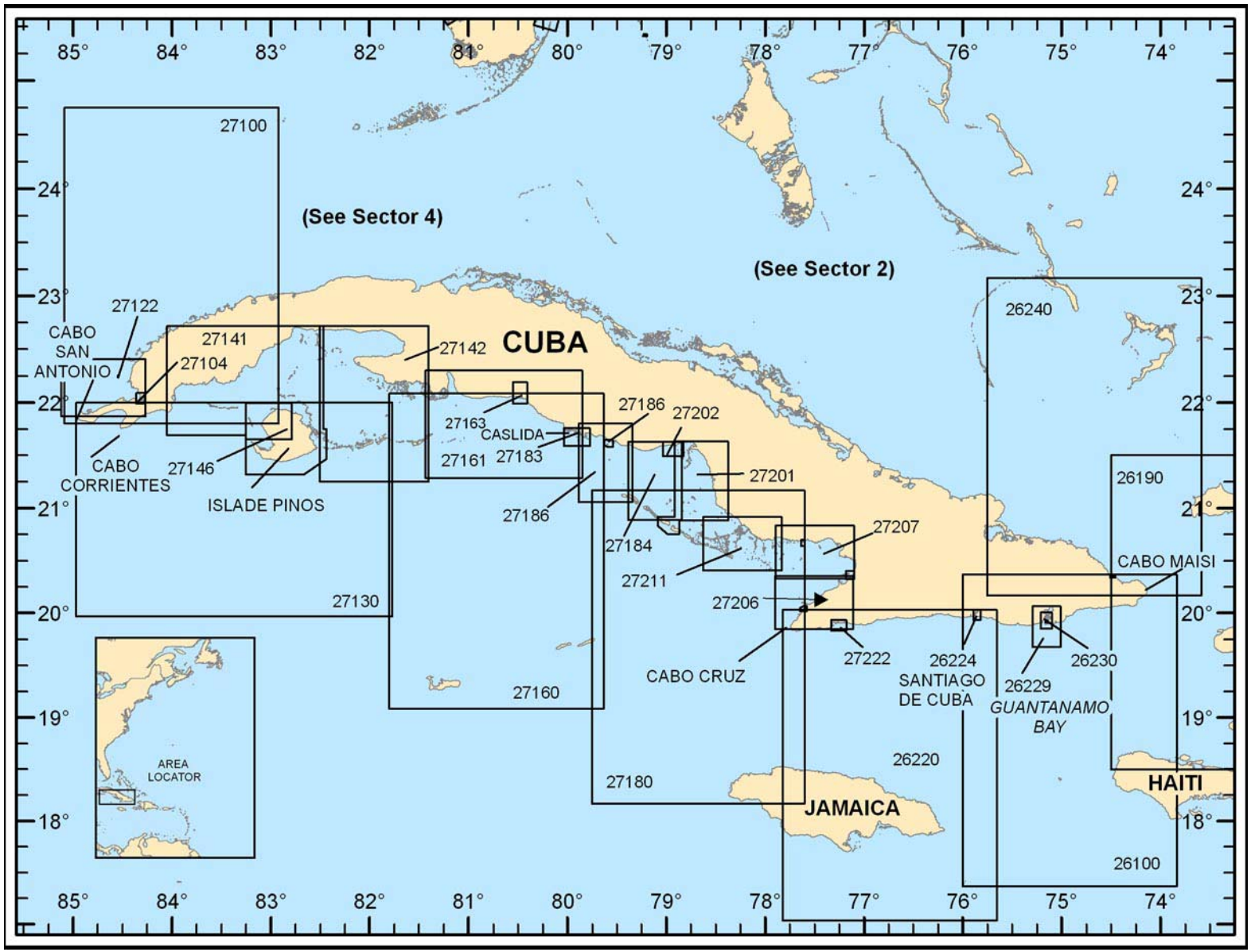
It has been reported (1995) that there are no longer mooring buoys and there is no commercial activity.

It is the only anchorage of any importance with a straight deep-water entrance between Baracoa and Punta Maisi.

Small vessels with knowledge of the area enter and commonly anchor when abeam Punta Cuartel then, swinging counterclockwise through W, moor with the bow heading seaward.

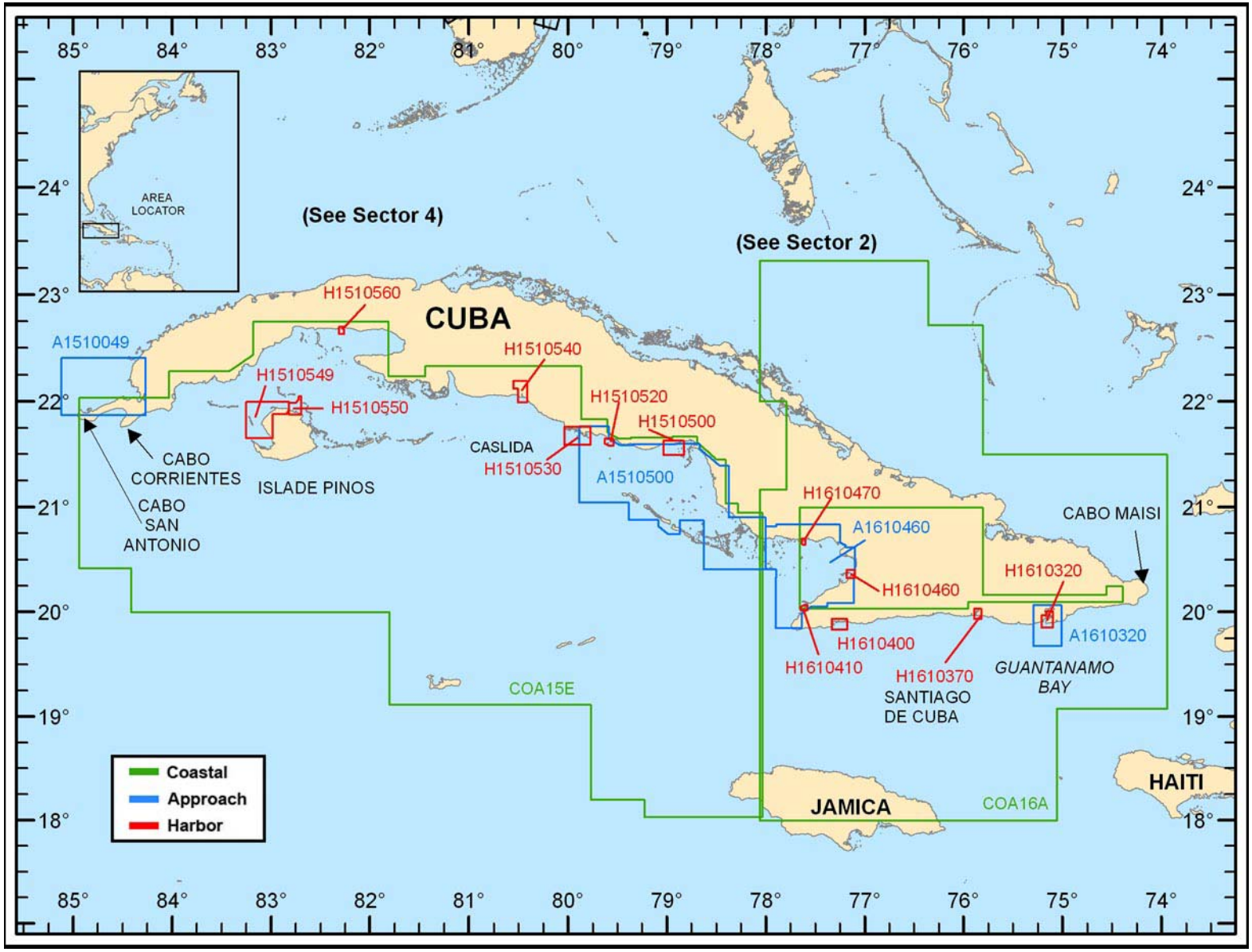
The anchorage is not well-sheltered, particularly during the winter, when a heavy sea can set in.

Punta Maisi (20°13'N., 74°08'W.), the E extremity of Cuba, is described in paragraph 5.3.



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

CUBA—SOUTH COAST

Plan.—This sector describes the S coast of Cuba from Punta Maisi, the E extremity of the island to Cabo San Antonio, the W end of Cuba.

General Remarks

5.1 The S coast of Cuba extends in a more or less W direction for about 650 miles from Punta Maisi to Cabo San Antonio. Between Punta Maisi and Cabo Cruz, the coastline is a straight line section which is steep-to and backed by a mountainous ridge running parallel to and rising precipitously from the coast.

Generally, the S coast of Cuba is indented by numerous harbors, bays, and a large gulf. A greater portion of the coast of the island is fronted by a chain of islands, islets, and cays. Between the island chain and the mainland, numerous shoals and reefs are penetrated by passages.

Bahia de Guantanamo, Bahia de Santiago de Cuba, and Bahia de Cienfuegos are the major centers of maritime activity on the S coast of Cuba. Santiago de Cuba is the largest city and the most important port; it is located about 100 miles W of Punta Maisi.

Sierra de Purial, to the E, and Sierra Maestra, to the W, form the group of mountain ranges that dominate the coast on either side of the low-lying, rather large, and exceptional plain that surrounds Bahia de Guantanamo.

There is a remarkable series of terraces at the extremities of Punta Maisi and Cabo Cruz.

Some of the more distinctive natural features along this part of the coast are the entrance to Bahia de Guantanamo, El Cobre (W of Bahia de Santiago de Cuba), Pico Turquino (the highest elevation in Cuba), Loma Aquada, and Loma Ojo de Toro (the westernmost peak of the Sierra Maestra).

Several IMO-adopted Traffic Separation Schemes have been established off the coast of Cuba, and may best be seen on the appropriate chart. Navigation within the Traffic Separation Schemes, except the scheme in Old Bahama Channel, will be observed from control posts and vessels. Such posts or vessels shall not call for any information, except in cases involving infringements by shipping within the Traffic Separation Scheme or other types of infringements of national law.

Winds—Weather.—For further information, see paragraph 4.1.

Tides—Currents.—The current along the E portion of the coast sets W, but an E counter current may be encountered close inshore.

Current rates are said to be strong at times, therefore, caution is advised near Isla de la Juventud, Banco Jardines, and Jardinillos. Currents in the vicinity of these dangers frequently set strongly toward them, especially during SE winds.

Between Cayo Largo and Cayo Breton there is usually no current, but a W set with a rate of 1.5 knots has been experienced.

For further information, see paragraph 4.1.

Pilotage.—Pilotage is compulsory for all foreign vessels. The vessel should send it ETA to "Mombisas Habana." An ETA message addressed to Mombisas (name of port) should also be sent if the vessels first port of call is not Havana.

Regulations.—Navigation in Bahia de Cochinos is prohibited in the area bounded by lines joining the following positions:

a. 22°20'N, 81°15'W
b. 22°10'N, 80°50'W
c. 22°10'N, 81°35'W
d. 22°05'N, 81°28'W
e. 21°50'N, 81°35'W
f. 22°40'N, 81°03'W
g. 21°45'N, 81°20'W

Signals.—Vessels must establish communications with the port signal station, either by VHF channel 16 or visual signals.

Caution.—Within 20 miles of Cabo San Antonio, the flow of water is either NE towards the Straits of Florida, or SE, then E along the S coast of Cuba, sometimes reaching 4 knots from Cabo San Antonio to Cabo Corrientes. The set is very dangerous to navigation, and it is advisable to give this section of the coast a wide berth.

Windward Passage

5.2 Windward Passage, the NE approach to the Caribbean Sea, lies between Hispaniola and Cuba, 45 miles to the NW. The channel is free from obstructions and no special directions are necessary if both coasts are given a wide berth.

Tides—Currents.—The set through the Windward Passage is SW in mid-channel at a rate which is usually less than 0.7 of a knot, but may attain rates of 2 knots.

Near the coasts on either side of the passage, tidal currents are strong and irregular.

On the E side of the passage, a current sets N at a rate of 0.7 knot around **Pearl Point** (19°40'N., 73°25'W.), but 6 miles offshore the current will set W or WSW.

Close N of Cap du Mole St. Nicolas, the N current meets a constant set flowing along the N coast of Hispaniola and causing ripples.

The W flow from Cap Haitien through Chenal de Tortuga, at a rate of about 1 knot, sets between Rabal and Cap du Mole St. Nicolas. The current gradually increases in strength and inclines towards the land, although at times there is a NE set.

On the W side of the passage a N current sets around Punta Maisi, which is considerably affected by the tides, and whose rate is greatly affected by the wind. During the summer months and with S winds, an E set is experienced, while with N winds, the currents set S.

Frequently, especially during the winter, a W current of considerable strength will be experienced.

Traffic Separation Scheme.—An IMO-adopted Traffic Separation Scheme has been established off Cabo Maisi and may best be seen on the appropriate chart.

Additionally, an Inshore Traffic Zone has been established

between the Western Traffic Separation Lane and the coast.

Vessels not using a Traffic Separation Scheme should avoid it by as wide a margin as is practicable.

Punta Maisi to Bahia de Guantanamo

5.3 Punta Maisi (20°13'N., 74°08'W.), the E extremity of Cuba, has a low-lying shore of white sand and is rounded. The land within the cape begins to rise 0.7 mile from the coast, and when viewed from the N, appears to form three steps making useful landmarks.

Punta Maisi Light

The terrain SW of Punta Pintado becomes progressively steeper and more abrupt.

Punta Maisi is a lee shore open to the affects of the sea and the prevailing E wind. Vessels navigating in the vicinity are cautioned to stand well offshore, and are reminded that if proceeding at night from the S, Punta Maisi Light is obscured to the W of a line bearing 359°. A racon is located on Punta Maisi.

The coast between Punta Maisi and Bahia de Guantanamo, about 62 miles WSW, is rugged and consists of an uneven terrain in which the marine terraces with their steep-sided gorges to the E merge into a series of cliffs and bluffs that, alternating with scattered sandy beaches and continuing to the W, rise inland to the interior mountain range of Sierra de Purial.

Punta Negra (Punta Caleta), about 12 miles SW of Punta Maisi, is a low-lying rocky point which is backed by steeply rising terraces and is reported radar conspicuous at 26 miles.

Also conspicuous is a high, barren white-faced cliff at Salto de Jofo, 9.7 miles W of Punta Negra, that can be seen well offshore.

It was reported that Punta Negra was a very good radar target at 35 miles. Loma Pan de Azucar, a hill about 29 miles W of Punta Negra, is a good landmark that appears alternately as the roof of a house from the ESE and as a sugarloaf from the SW.

The coast between Punta Negra and the meridian of Loma Pan de Azucar lies largely sheltered from N and NE winds, and has a number of anchorages which, open to winds from the S and SE, are available to small vessels with local knowledge.

The principal anchorages are located at Jauco, Bahia Jojo, Bahia de Imias, and Bahia Sabana la Mar.

5.4 Puerto Baitiqueri (20°01'N., 74°51'W.) is located 42 miles W of Punta Maisi. It is a very small well-sheltered pocket bay and is clearly indicated by the opening between the hills on either side of the entrance.

The bay is only available to small vessels as the entrance channel has a least depth of 3m and is only 15m wide between the reefs on either side. These reefs, awash, cause the sea to break heavily over them and can be seen from 0.2 mile away.

Puerto Escondido (19°55'N., 75°03'W.), 6 miles E of the Bahia de Guantanamo entrance, is landlocked and quite deep, but narrow.

It has been reported (1995) that this is a prohibited zone. Special permission is needed to enter.

The coast on either side of the entrance appears as a continuous jagged bluff, and the entrance itself cannot be distinguished until very close to the coast.

A tower is situated on the summit of Mogate Peak, a hill that rises to 158m, 1.7 miles NW of the entrance to Puerto Escondido. A hill close E of the entrance has a well-defined saddle-shaped summit, serving as a useful landmark in identification. Inside, the bay branches into numerous mangrove-fringed deep water inlets that lead off into surrounding fields of drying tidal flats.

It would be very difficult for a vessel of more than 46m in length to turn around in the port.

Anchorage.—Vessels anchor, in 10.4 to 11.3m, mud, in a position with Inner Entrance Point bearing 193°, distant about 0.3 mile, and in this position commonly ride to a prevailing wind since the current is negligible.

Directions.—Vessels intending to enter Puerto Escondido, steer a course of 336° and head for the extremity of a rocky scarp that, lying inside the bay, appears about midway between the sides of the entrance channel. A vessel proceeds through the channel, being guided by the clear water over the sunken dangers and the darker colored water in the channel, and then

continues on into the bay.

Bahia de Guantanamo

5.5 Bahia de Guantanamo (19°56'N., 75°10'W.), 62 miles WSW of Punta Maisi, is a spacious, well-sheltered, easily entered, and largely landlocked inlet. The bay, about 11 miles long, is divided into outer and inner harbors and is reported to be deep.

Puerto Guantanamo (20°00'N., 75°08'W.) (World Port Index No. 10320) comprises Bahia de Guantanamo inner part and the several berthing facilities serving the community of Guantanamo, the coffee-growing center for Cuba, about 8 miles NW.

Depths—Limitations.—Regardless of the direction of approach, ships should stay seaward of the 2,000m curve and head for **Approach Point** (19°51'N., 75°12'W.).

This point is seaward of the 2,000m curve and the U.S. Naval Reservation Boundary and about midway between Windward Point and Leeward Point on the entrance range.

Then, steer on the entrance range in alignment, bearing 021.5°, for Entrance Point. It is reported (2010) that the forward range light has been removed until further notice. Entrance Point is located on the range line, about 1.1 miles from Windward Point.

Windward Point Light Guantanamo

The coast is bold and steep-to. The entrance has a muddy bottom and two slight turns. Vessels up to 170m in length, with a maximum draft of 5.7m, can enter the inner port of Boqueron. The outer harbor is accessible to vessels of draft 12.2m.

Tankers are not restricted by length of the pier, but dry cargo vessels which exceed a length of 152m experience difficulties in loading cargo because the stern hold will be out of the pier.

The S side of Boqueron Pier, is 176m long and can accommodate a vessel up to 15,000 dwt, with a maximum draft of 5.79m. The N side of the berth is only used by small craft.

Pantas Pier Boqueron has a length of 48m and can accommodate vessels up to 1,000 dwt and maximum draft of 1.6m.

Caimanera pier has a length of 40m and can accomodate vessels up to 1,300 dwt with maximum draft of 1.5m.

All cargo operations are performed during daylight hours only.

Commercial vessels, though permitted passage through the lower bay, are not permitted to put in there because the entire area constitutes the United States Naval Reservation.

Water is supplied at Boqueron Pier through a pipeline on both sides.

A pipe in a depth of 9.8m lies 0.7 mile NW of Corinaso Point.

Aspect.—Although there are few distinctive landmarks in the identification of Bahia de Guantanamo, a remarkable conical mountain lies about 15 miles to the W of the bay and is a useful mark to vessels making their approach from the S, since as they close the coast the mountain appears more in the shape of a saddle.

The terrain at the entrance to this landlocked inlet is rocky, bold, and heavily scrub-covered. The radar signal is reported to pick up the entrance at 27 miles. An aero radiobeacon which operates close SW of Crane Hill, Fisherman Point Light, and the Crane Hill radar dome are good visual aids. The tower near Saint Nicolas Point, a short square structure with a white radar dome, is also conspicuous. It is reported (2009) that flashing red lights on four wind turbines and a band of white lights generated by the naval station boundary fence are visible about 15 miles SE of the bay. The mountainous coastline and piers are reported to be excellent radar contacts.

Pilotage.—Pilotage is compulsory for ships engaged in foreign trade, but is not required for ships of the U.S. Navy. Permission to enter the U.S. Naval Reservation boundaries and request for pilotage should be secured in advance of arrival. See the General Remarks topic in paragraph 5.1 for information on Cuban pilotage.

Pilots board 1 mile off Lighted Buoy No1. (Near Fisherman Point). Vessels proceeding to the upper bay embark the pilot at Hospital Cay. The pilot boat is a small motorboat marked with the white letter “P” on the bows. Requests for pilots should be forwarded 96 hours before arrival.

The pilots can be contacted, as follows:

1. Call sign: Port Control
2. VHF: VHF channels 12 and 74
3. Telephone: 532-21-9345
4. E-mail: puertogt@enet.cu

Regulations.—A great portion of Bahia de Guantanamo (Guantanamo Bay within the charted limits of U.S. leased territory) is leased by the United States government. Concurrent with the limits of this territory, the Guantanamo Bay Naval Defensive Sea Area has been established and is closed to the public.

Full details concerning entry control and application requirements will be found in Title 32, U.S. Code of Federal Regulations, Part 761.

The U.S. Navy maintains a Harbor Entrance Control Post which challenges and identifies all ships approaching Guantanamo Bay, logging arrival times. Unidentified ships are reported to the Harbor Police for investigation.

The Harbor Entrance Control Post operates from the signal station atop a building on **McCalla Hill** (19°55'N., 75°09'W.).

Vessels proceeding to Boqueron should forward an ETA off Windward Point to the Commander Naval Station, Guantanamo Bay, and request permission to pass through the bay in order to proceed to Boqueron. Passage is permitted during daylight hours only.

There is a port radio station at Guantanamo Bay.

Anchorage.—Anchorage, for two vessels with lengths of 70 to 150m, can be obtained in Bahia Joa about 0.75 mile E of the railway pier at Caimanera. Assigned anchorage is available in the inner part of the bay for military vessels. Vessels at anchor should maintain a listening watch on VHF channel 12.

Caution.—Anchorage is prohibited within 0.2 mile of any cable areas. Anchorage is prohibited between Leeward Point and Windward Point. These areas can best be seen on the chart. For vessels intending to remain at anchor for any length of time it has been suggested to anchor with at least 2.5 shots of chain as violent squalls may arise at any time.

Bahia de Guantanamo to Santiago de Cuba

5.6 Between Bahia de Guantanamo and Bahia de Santiago, about 39 miles to the W, the coast is steep-to and clear of off-lying sunken dangers and can be approached in safety to a distance of 1 mile. This stretch of coast can be divided into three distinct profiles.

The first 9 miles has a line of abrupt seaside cliffs backed inland by a line of hills and the low-lying plain extending N and W from Bahia de Guantanamo. The second of the three areas extending W for about 14 miles consists of the E extremity of the Sierra Maestra mountain range, which extends to the sea at the conspicuous (particularly from E and W), sugarloaf hill Morrillo Chico.

The final 16 miles, between Punta Verracos and Bahia de Santiago de Cuba, consists of a series of marine terraces. Explosive dumping grounds lie 16 miles S and 20 miles SE of Punta Verracos as best seen on the chart.

Anchorage.—Small vessels will find anchorage in the small and somewhat sheltered coves at Surgidero de Hatibonico, Siboney, and Aguadores. A strong current has been observed to set to the shore in the general vicinity of Surgidero de Hatibonico.

5.7 **Bahia Daiquiri** (19°55'N., 75°38'W.) is a small cut in the coast into which the Rio Daiquiri flows, 3 miles NW of Punta Verracos.

Although there is no suitable anchorage here, there are a number of mooring buoys in the bay. Daiquiri is connected to the mines and to Santiago de Cuba by railway.

Depths—Limitations.—A wharf, with depths of from 3 to 4.6m alongside, is located 0.2 miles ENE of the mouth of the river and is connected to the railway.

Pilotage.—Pilotage is compulsory.

5.8 **Santiago de Cuba** (20°01'N., 75°50'W.) (World Port Index No. 10370) is entered between **El Morro** (Punta Morrillo) (19°58'N., 75°52'W.) and the S part of Punta Socapa, 0.1 mile WNW. The bay is quite spacious, well-sheltered, and landlocked. There are a number of coves and inlets indenting this natural harbor, which is entered through a narrow channel.

Winds—Weather.—An E to SE breeze usually blows until about 1000, its intensity increases from mid-day until late afternoon and disappears around sunset.

During the rainy season (May to October), SE winds occasionally make the seas in the approach and entrance heavy, and entering at times could be dangerous. In winter, NW to NE winds are predominant, sometimes alternating with strong S winds.

Santiago de Cuba

Depths—Limitations.—It has been reported that vessels up to 214m in length and 10.9m in draft can enter during the morning, vessels up to 183m at other times.

Santiago de Cuba, on a hillside at the head of Bahia de Santiago de Cuba, is the secondmost populated and important commercial port in Cuba. It is the center of a significant mining region. For Berthing information refer to the **Santiago de Cuba—Berth Information** table.

The port has the capacity to operate many vessels simultaneously, including tankers, bulk grain, dry cargo, and coastal trade vessels. Discharging operations are also frequently carried out at the inner anchorage.

Aspect.—The entrance is remarkable in that El Morro, the E entrance point is steep while Punta Socapa, the W entrance is a more gently rising slope. The entrance to the port and channel itself are narrow with some turns.

Closer in, the massive fortifications standing high on El Morro as well as the lower lying fortifications at Punta Estrella become clear to the mariner.

El Cobre, about 11 miles WNW of the entrance, is a culminating peak within the mountains rising to the W of Bahia de Santiago de Cuba. The entrance, for about 0.5 mile, consists of a rock bottom. From there for about 1 mile, the bottom is muddy, with the remaining 2.5 miles consisting of soft mud.

Pilotage.—Pilotage is compulsory. See the General Remarks topic in paragraph 5.1. Pilots should be ordered at least 12 hours in advance of arrival.

Pilots board vessels 1 mile S of the port which is about 4 miles from the piers; 3.5 miles to the anchorage and 1.5 miles to the Refinery Pier.

The pilots can be contacted, as follows:

1. Call sign: Santiago Practicos
2. VHF: VHF channels 16 and 13
3. Telephone: 532-2269-1412
4. E-mail: pilotscu@enet.cu

Signals.—See the General Remarks section in paragraph 5.1.

For the control of navigation through the narrow channel of

the bay, a signal mast stands at the El Morro fortifications. Vessels must establish contact with the signal station prior to entering the channel.

El Morro Light

Anchorage.—Five anchorage areas are charted. All are considered to have good holding ground. The first is located W of Punta Gorda in the outer harbor. It is used by tankers and can accommodate vessels up to 214m in length and 10.9m in draft.

The second area is located 0.2 mile NE of Cayo Ratones. This anchorage can accomodate two vessels with a maximum length of 153m and draft of 8.7m.

Anchorage area number three is centered 0.8 mile NE of Cayo Ratones. It is capable of accomodating a single vessel with maximum length of 180m and draft of 7m.

Anchorage area four is centered 0.2 mile SE of Punta Buenavista in the inner harbor. It can accomodate a single vessel with maximum length of 150m and draft of 6m.

Anchorage area five is centered 1.25 miles ENE of Epsigon Antonio Macio. It can accommodate two vessels with the largest having a maximum length of 140m and draft of 7.1m.

Anchorage area six is centered 1.5 miles SE of Punta Buena Vista. It can accomodate two vessels with the largest berth accommodating vessels with a maximum length of 140m and draft of 7.1m.

Vessels are additionally urged to consult the local authorities and the pilot for information concerning the anchorage berths within the port.

Directions.—Vessels with intentions of entering Bahia de Santiago de Cuba steer for the Punta Estrella fortifications on a course of 043°, and proceed in mid-channel through most of the entrance fairway. The channel passes E of Cayo Granma and W of Punta Gorda in the lower harbor. The inner harbor anchorages and berths are reached by continuing the transit NE through the channel. An overhead cable crosses the harbor E and W of Cayo Ratones. The height of the cable is 51m.

Caution.—It was reported that works were in progress in Santiago Harbor, N of Cayo Ratones. The coastline and depths may differ from those charted. Mariners should exercise caution in the area.

Santiago de Cuba—Berth Information

Pier	Berth Length	Depths Alongside	Remarks
Luis F. Mena Gil Wharf			
East Berth	145m	6.7m	Sugar and minerals
Center Berth	146m	8.7m	Sugar and minerals
West Berth	105m	7.0m	Sugar and minerals
Railway pier	160m	7.6m	Sugar and minerals
30 de Noviembre Dock			
Berth No. 3	163m	7.9m	
Berth No. 4	163m	8.2m	
Rolanda Roca Pacheco Pier			
North side	150m	7.6m	General cargo
South side	150m	7.6m	General cargo
Romero Pier and Docks			
East side	100m	4.5-7.0m	General and refrigerated cargo
West side	100m	4.5-7.0m	General and refrigerated cargo
Fabrica de Cemento Dock	130m	7.6m	Cement
Refinery Hermanos Diaz Pier	214m	10.9m	Accommodates oil tankers up to 214m in length
Antonoi Maceo	214m	8.2m	Refigerated cargo
Frank Pais Pier	214m	9.1m	Grain discharge

Santiago de Cuba to Cabo Cruz

5.9 The coast between Puerto de Santiago and Ensenada Cabanas 2 miles W is free of off-lying dangers.

From the offing, the narrow entrance is not easy to identify until close-in. The fairway indicates a depth of 2.7m, gradually increasing to depths of 3.7 to 5.5m, shoaling gradually to the shore.

The channel is obstructed with an overhead powerline which has a clearance of 10m.

Anchorage for small vessels is excellent in Ensenada Cabanas, but local knowledge is advised.

Punta Cabrera is located 3.5 miles WSW of the entrance. There is an off-lying bank, with a depth of 22m, reported to lie 7.5 miles S of Punta Cabrera.

5.10 Puerto Nima-Nima (19°57'N., 75°59'W.) is situated 1.2 miles WNW of Punta Cabrera. A cantilever loading bridge is in ruin in the SE part of the bay. At the head of Puerto Nima-Nima, there is a ruined pier which connects to the mines and continues out into 3.7m of water.

A good mark on this part of the coast is a red hill excavated in terraces, located to the W of Puerto Nima-Nima, 1.5 miles distant.

Bahia Aserradero indents the coast 9 miles WNW of Puerto Nima-Nima. The Rio Aserradero flows into this bay.

The wreck of the Spanish cruiser Vizcaya is located in Bahia Aserradero on the W side.

Rincon de Sevilla is situated 3.5 miles W of Aserradero, and Punta Tabacal is located 7.5 miles farther WSW.

Punta Tabacal is the site of a conical hill, comprised of dark wooded slopes and topped by a grassy summit, that rises to an elevation of 129m. This landmark is easily identified from an E direction.

The coast between Bahia de Santiago and Ensenada de Mora, 81 miles to the W, is dominated by the rugged mountainous Sierra Maestra which everywhere rise steeply. Numerous mountain spurs and foothills run down to the sea through a coastal plain that creates numerous pocket valleys, many small coves, and sandy beaches.

Pico Turquino (20°00'N., 76°50'W.) is the culminating summit of the Sierra Maestra and is the highest elevation in Cuba. Under favorable weather conditions, the summit can be seen as far away as the coast of Jamaica.

5.11 Puerto de Chivirico (19°58'N., 76°24'W.) is situated approximately 30 miles W of Bahia de Santiago de Cuba. It indents the coast between Cayo de Damas, located close inshore 1.7 miles W of Punta Tabacal, and a peninsula that extends 0.3 mile from the coast 1 mile W.

There was an ore loading facility at the head of the harbor, but it is in ruins. Extreme caution is advised when entering this encumbered coastal indentation because of the narrow entrance channel and dangerous reef on the W side of the entrance.

Anchorage.—Anchorage may be obtained, in depths of 12.8 to 16.5m, in the center of the port, but with no protection from the S.

Good protection for vessels up to 7m draft can be found to the N of Cayo Damas, but local knowledge is required.

Excellent protection for vessels up to 2.5m in draft can be found in the inner lagoon on the W side of the bay. Local knowledge is required.

5.12 Puerto Portillo (El Portillo) (19°55'N., 77°11'W.), about 45 miles W of Puerto Chivirico, is entered between Punta de Piedras and Punta de Los Farallones 0.5 mile WSW.

The bay is small, much encumbered, and indents a low-lying mountain-enclosed coastal plain. Puerto Portillo can be identified by low swampy mangrove-covered land on its E side and by the three perpendicular white cliffs on its W point.

Buoys mark the limits of the reef on the E and W sides of the entrance channel.

Vessels will find temporary anchorage, in 11 to 13m, in the entrance to the bay, where they lie open to winds from the ESE and S. Excellent protection for vessels up to 4m in draft will be found by rounding Punta Raza and entering the lagoon to the E.

Ensenada de Mora (Pilon Harbor) (19°54'N., 77°18'W.) is a break in the coast between Cayo Blanco, located close inshore 5 miles W of El Portillo, and Punta Hicacos 2 miles farther WSW.

The bight consists of deep water indenting a low-lying coastal plain that for the most part is backed closely inland by the W confines of the Sierra Maestra.

Close NE, Loma Aguada (Aquada Peak) stands at an elevation of 378m and provides an excellent landmark.

Prominent are the cane fields W of the peak. A sugar mill, on the NW shore of the bay, the white spire of a church close N of it, and a water tower with a red tank 1.5 miles NNW of it, are conspicuous.

A radio mast stands bearing about 053°, 1.3 miles from the sugar mill.

The bight is encumbered by numerous parallel ridges of above and below-water dangers that provide relatively well-sheltered anchorage in an inner and outer harbor, and restrict entry to a rather intricate passage having a sharp right-angle turn and a fairway partially blocked by a scattering of rocky heads.

5.13 Pilon (19°54'N., 77°19'W.) on the W side of Bahia de Pilon, is a small community and the site of a sugar mill. The maximum draft for vessels entering this subport of Manzanillo is 6.1m. It was reported (2004) that the pier at Pilon is in disrepair and no longer in use.

Pilotage.—Pilotage is compulsory. The pilot boards 1 mile S of Cabo Cruz. Entry into Bahia de Pilon during the daylight hours affords the mariner a clearer look at the many sunken dangers that can be recognized by a change in water color.

Entry at night proceeds only as far as the outer harbor anchorage.

Anchorage.—Deep-draft vessels can be accommodated, in a charted depth of 12 to 14m, clay, in the outer harbor 0.6 mile W of Cayo Pajaro. Vessels drawing less than 6.1m can anchor in depths of 8.2m, in the inner harbor close E of the alongside berthing facility at Pilon.

Directions.—Vessels intending to enter Bahia de Pilon should steer for a point to the S of the outer channel buoy, and then follow the lighted range in passing close W of the buoy.

Once past the buoy the heading is changed to 005°, to pass E of Cayo Pajaro, which is then rounded to the N, thereafter pro-

ceeding to the destination.

5.14 The coast, for a distance of about 24 miles between Bahia de Pilon and Cabo Cruz, meets the sea in a low scarp that is interrupted only here and there by scattered beaches of sand, gravel, or mangrove swamps. Inland, the Sierra Maestra mountains gradually diminish to the W.

Numerous superimposed bush-covered to heavily forested marine terraces rise between the scarped shore and the downslope of the Sierra Maestra.

The Rio Toro (Rio Ojo del Toro) cuts a remarkable gorge through these terraces before entering the sea about 7 miles W of Bahia de Pilon.

Ojo del Toro, close W of the Rio Toro, rises to an elevation of 533m. It is the W peak of the Sierra Maestra and is very prominent. When viewed from the SW, the summit of this mountain appears as two or three hummocks.

Cabo Cruz Light

5.15 **Cabo Cruz** (19°51'N., 77°44'W.) is a low sandy point backed by a forested plain which continues inland as flat tableland, rising farther E into the foothills of the Sierra Maestra.

There is a pilot station at the village located at Cabo Cruz, which consists of a few huts, a flagstaff, and a light situated to the rear of a large rectangular building.

East of Punta del Ingles, the light is obscured by high land when bearing less than 285°. It is reported the light is also beamed for use by aircraft.

A reef awash, on which the sea breaks heavily, extends 1.5 miles W of the lighthouse. A light marks the outer end of the reef.

Cabo Cruz to Golfo de Guacanayabo

5.16 The coast between Cabo Cruz and Punta Maria Aguilar, about 172 miles NW, is predominantly low-lying and fronted throughout by a shore of sand, mud, or mangrove swamps that merge inland with extensive level to undulating coastal and interior plains.

Offshore, a shoal water narrow shelf extends to seaward to a remarkably straight line between Cabo Cruz and Punta Maria Aguilar, where it then drops away abruptly to ocean depths.

A large uninterrupted barrier of above and below-water dangers, of which the islet chain Jardines de la Reina is the most predominant, lies on or somewhat shoreward of the line.

The area of water inshore of this barrier is divided into Golfo de Guacanayabo to the SE (described beginning in paragraph 5.17) and Golfo de Ana Maria to the NW (described beginning in paragraph 5.26) by a particularly dense concentration of islets forming Jardines de la Reina's SE extremity, and the narrow mainland to the NE.

Anchorage.—Anchorage is available, in a depth of 7.3m, sand, NW of Cabo Cruz.

Vessels drawing less than 4m can work in behind the reef to a point just S of the W limit of the mangrove shore.

Golfo de Guacanayabo

5.17 **Golfo de Guacanayabo** (20°28'N., 77°30'W.) is a large extensive gulf in the coast lying between Cabo Cruz and Punta de las Angosturas, about 66 miles NNW. The gulf contains many shoals, reefs, and cays, with Gran Banco de Buena Esperanza holding a large part of the center. The S end of Gran Banco de Buena Esperanza is almost linked to Punta Colorados by a series of reefs, and there are number of shoals and cays between the N side of the bank and the N shore of the gulf.

The outer edge of the bank, with depths of less than 200m, that extends SW from the entrance to the gulf, is located between Cabo Cruz and the SE end of Laberinto de las Doce Leguas, 53 miles NW. This is steep-to, with depths of less than 20.0m close within the charted 200m curve.

Numerous channels lead through the groupings of above and below-water dangers and to a lesser extent, the random scattering of islets in Golfo de Guacanayabo.

These channels are affected by silting, caused by the rivers flowing into them or from the effects of hurricanes, therefore, caution is advised at all times.

The level of the sea rises at the head of Golfo de Guacanayabo during the months of September and October from the effects of the S and SW winds.

Aspect.—Medano de la Ceiba (20°25'N., 77°59'W.), a very small, low-lying, and somewhat scrub-covered flat islet, is remarkable in identification of the seaward entrance to Canal de Cuatro Reales, because it is the S islet in the approach to the passage and the only islet in the area consisting of a dazzling white sand visible at about 5 miles.

Pilotage.—Pilotage is compulsory. See the General Remarks in paragraph 5.1. Pilots board off either Cabo Cruz or 2.5 miles SW of Cayo Blanco if using Canal de Cuatro Reales. They commonly proceed to the destination by day or night.

It is recommended that a pilot be arranged at least 24 hours before arrival during the day and at least 48 hours prior if arriving at night, otherwise, many hours may pass before the pilot boards.

The pilots may be contacted on VHF channels 13 and 16. For the boarding ground off Cayo Blanco, the pilots (call sign: Castilda Practicos) may be contacted on VHF channels 13 and

16.

Directions.—Four main entrance channels lead into Golfo de Guacanayabo, as follows:

1. Canal de Madrona.
2. Canal de Cuatro Reales.
3. Canal de Palomino.
4. Canal de Balandras.

5.18 Canal de Madrona (20°06'N., 77°48'W.), which leads to the E part of Golfo de Guacanayabo and the port of Manzanillo (paragraph 5.24), is entered in the vicinity of Madron Lighted Bouy (20°00'N., 77°53'W.), about 13 miles N of Cabo Cruz. The route leads generally NE for 8 miles and then E through the reefs lying between Punta Las Coloradas and the S part of Gran Banco de Buena Esperanza. This route has some sharp turns and narrow passages. The limiting draft is 10.2m. Vessels great than 190m long will be escorted by a tug. Transit is advised to be done during daylight hours only.

Canal de Cuatro Reales (20°26'N., 78°02'W.), the principal passage from the sea, leads to the W part of Golfo de Guacanayabo and the ports of Guayabal and Santa Cruz del Sur (paragraph 5.25). The approach to the channel begins from the vicinity of Madron Lighted Bouy, leading NNW for 27 miles for low-lying and wooded Cayo Carapacho near the channel entrance, and then NE through the shoals in the N part of Gran Banco de Buena Esperanza, passing between Banco Leviza's E extremity and the sunken danger Banco Ceiba. Then proceed so as to pass midway through the narrow fairway leading between the islets and sunken dangers adjacent to Cayo Blanco to starboard and those near Cayo Playa Blanca to port. It is comparatively deep and rather straight, but considerably narrowed so that a south-setting ebb tidal current can reach a velocity of 3 knots; farther within the gulf, the ebb sets E. Vessels are limited to a draft of 10.7m. Transit is advised to be done during daylight hours only.

Canal de Palomino (20°06'N., 77°40'W.) is an alternative inshore route for small vessels heading to the E part of Golfo de Guacanayabo. The limiting draft is 6.1m. The S entrance to the channel, in the vicinity of Banco Arreola (20°00'N., 77°41'W.), is reached through an unmarked route lying from 2 to 3 miles offshore extending N from Cabo Cruz. the channel eventually connects with the inshore end of Canal de Madrona in the vicinity of Cayo Palomino (20°09'N., 77°39'W.).

Canal de Balandras (20°05'N., 77°36'W.) is another alternative inshore route for small vessels heading to the E part of Golfo de Guacanayabo. The limiting draft is 4m. The channel has a least width of only about 90m and local knowledge is required.

Canal Pitajaya (20°21'N., 77°51'W.), entered about 29 miles NNW of Cabo Cruz, is deep, but intricate and narrow. Canal Cabeza del Este (20°30'N., 78°18'W.), entered about 51 miles NW of Cabo Cruz, is straight and comparatively deep. Neither is recommended.

Anchorage.—San Juan Anchorage (20°38'N., 77°57'W.), situated about 49 miles NNW of Cabo Cruz, is quite spacious and well-sheltered. This body of water is entered from the S by way of Canal de Cuatro Reales. Vessels anchor in, 7.3 to 12.2m, good holding ground, mud and shells.

5.19 Bahia de Niquero (20°04'N., 77°35'W.), located about 15 miles NE of Cabo Cruz, is a small, largely shoal water bay fronting on the community of Niquero. The bay is entered between Punta Niquero, about 1.5 miles NE of Bahia Guanito pier, and a point 1.8 miles farther N where only small vessels can be accommodated.

Niquero (20°03'N., 77°35'W.) is a sugar port. The tall chimney at the sugar mill is an outstanding landmark. Two miles S of the town, there is a sugar-loading pier 1560m in length, with a maximum depth of 7m alongside.

While two vessels may be docked at the same time, it is customary, due to the limited output of the sugar mill, to work one ship at a time. Vessels may enter or depart the port during daylight hours only.

There are several other minor ports that exist between Bahia de Niquero and Manzanillo. The pilotage area for Manzanillo and all of its sub-ports, including the port of Pilon, begins at Cabo Cruz.

5.20 Media Luna (20°09'N., 77°26'W.) (World Port Index No. 10420) lies about 25 miles NE of Cabo Cruz. It is the site of a large sugar mill where several chimneys are prominent.

This sugar loading establishment has a pier nearby with depths of 4.3 to 5.7m alongside, which in turn is connected by rail to the town 1.2 miles inland. Close NW of the pier, there is an anchorage, in 7.6m, poor holding ground, soft mud.

Vessels using the pier during winter, when occasional squalls present a danger, should berth alongside with an anchor lying well offshore.

All cargo operations are carried out in the anchorage between Punta Cocal and Punta Manacal, about 1.7 miles offshore. The bay is open to the NW, so operations may be interrupted by winds and swells. This happens more often from April to November during frequent rain squalls.

There are no size nor draft limitations for the anchorage, other than those for the passage of Canal de Madrona, that being a maximum draft of 10m.

5.21 San Ramon (20°13'N., 77°22'W.) is another former subport along this part of the coast, situated 31 miles NE of Cabo Cruz. It was the site of a large sugar mill, marked by a distinctive chimney. San Ramon is fronted by a wooden pier about 201m long, having a depth of about 6.4m at the pier head berth. It has been reported in 2013 that the sugar mill has closed and the pier is in disrepair.

Vessels call at Manzanillo first to embark a pilot. Vessels should leave Manzanillo about 0400 in order to arrive at San Ramon at 0700. The pilot will remain on board during the vessel's stay. They enter the berth with the port anchor down and swing so as to bring the bow N and the starboard side-to. The stern is made fast to a mooring buoy. With strong N winds, vessels cannot remain in the berth.

5.22 Cieba Hueca (20°13'N., 77°19'W.) (World Port Index No. 10430), about 33 miles NE of Cabo Cruz, is also a loading place for sugar.

A conspicuous chimney marks the site of a large sugar mill. Small tankers use a pier in bad condition at Ceiba Hueca.

For unloading fuel, a tanker can be no longer than 98m in length, and for vessels loading molasses, the maximum length is 151m. The maximum draft accepted at the pier is 5.8m.

The anchorage is used for the loading of sugar and is located about 1 mile NW of the pier. The only limitations at the anchorage is that a vessel should have a maximum draft of 10m, in order to transit Canal de Mandrona.

5.23 **Campechuela** (20°14'N., 77°17'W.), about 35 miles NE of Cabo Cruz, is a small community and sugar mill site with berthing facilities for small craft only.

Bahia de Caimanera (20°21'N., 77°07'W.), about 40 miles NE of Cabo Cruz, is a small coastal indentation and shoal water inlet fronted offshore by the low-lying reef-fringed mangrove-covered islets Cayos Manzanillo and backed inland by swamp and low hills. It serves as a harbor for a large fleet of fishing vessels.

The light-colored buildings in Manzanillo, 2 miles to the NE, are remarkable and under favorable conditions visible over Cayos Manzanillo at about 20 miles. The islets themselves become visible 5 miles away.

Vessels anchor, in about 7.6m, soft mud, in a position about 0.7 mile S of Cayita, the E islet of Cayos Manzanillo, where they handle cargo by lighters.

Vessels make their approach either N or S of Cayos Manzanillo. Pasa Honda, a passage through Cayos Manzanillo, is not recommended.

5.24 **Manzanillo** (20°21'N., 77°07'W.) (World Port Index No. 10460), on the hilly slopes at the head of Bahia de Manzanillo, is a small metropolis and transshipment center for sugar, tobacco, and hard wood. It is the port for Bayamo, one of the oldest cities in Cuba.

Madrona Channel has sharp and narrow turns with a soft mud bottom. The maximum draft for vessels entering the channel is 10m. Vessels must await a favorable tide; no tug boat is necessary.

Palomino Channel has turns less difficult than Madrona Channel. The bottom is soft mud with a maximum draft of 6.1m. No tug boat is necessary. Vessels should enter and sail only during hours of daylight.

Depths—Limitations.—All operations take place using barges at the anchorages.

Inner Anchorage No. 1, located in position 20°21'54"N, 77°08'24"W, provides a length of 180m, with a depth of 7.3m.

Outward Anchorage No. 2, located in position 20°22'36"N, 77°08'40"W, provides a length of 170m, with a depth of 10.0m.

Outward Anchorage No. 3, located in position 20°23'30"N, 77°09'18"W, provides a length of 170m, with a depth of 10m.

Cargo handled at the above anchorages include general cargo and bagged raw sugar.

A offshore mooring terminal is situated in position 20°21'12"N, 77°10'21"W. Vessels up to 8.5m draft are moored to three mooring buoys by Terminals Mambisas tugboats. Cargo handled include kerosene, gasoline, and diesel oil.

Pilotage.—Pilotage is compulsory. The pilot boards at **Cabo Cruz** (19°49'12"N., 77°45'12"W.).

The pilots can be contacted, as follows:

1. VHF: VHF channels 13 and 16
2. Telephone: 53-23-577-474
3. E-mail: enp@enet.cu

Anchorage.—The local authorities and the pilot should also be consulted for information on anchorage grounds for the port.

5.25 **Santa Cruz del Sur** (20°42'N., 77°59'W.) is a small port community on the NW shore of Golfo de Guacanayabo, with a substantial fishing fleet.

Depths—Limitations.—Entry is allowed in daylight only. Cuatra Reales Channel, the entrance channel, is 45m wide with a depth of 10.7m.

Accommodations consists of a pier at **Guayabal** (20°42'N., 77°37'W.) (World Port Index No. 10470), which can handle two large vessels at one time. A single pier, 300m in length, with depths alongside of 3.0m, is used for cargo. A pier at Santa Cruz is for small craft only. At Manopla, vessels load at anchor from lighters, in depths ranging from 7.9 to 12.1m.

Pilotage.—Pilotage is compulsory. The pilot boards at the entrance of Cuatra Reales Channel.

Anchorage.—The local authorities and the pilot should be consulted for information on anchorage.

Caution.—An obstruction has been reported to lie 0.6 mile E of the coastal point SW of Santa Cruz del Sur.

Muelle Manopla (20°43'N., 77°52'W.) is a subport of Santa Cruz del Sur and is situated about 6.5 miles E of Santa Cruz. This transshipment center is approached through Canal Media Luna and Bayameses Passages. Vessels anchor in a 1 mile wide area in the latter passage where the bottom is of soft mud.

Golfo de Ana Maria

5.26 **Golfo de Ana Maria** (21°25'N., 78°40'W.) is part of a broad coastal indentation or bight lying between Punta de las Angostura (Punta Palizon) and Punta Maria Aguilar, about 112 miles WNW. The coast is similar to that of Golfo de Guacanayabo in that it is low-lying and consists of a muddy shore, overgrown with mangroves.

Behind the shore is a plain, largely sown in sugar cane. In the far WNW, the coast gradually rises into the foothills of the mountainous Sierra de Saneti Spiricus and Sierra de Trinidad. Conspicuous along this coast is Loma de Banao, one of the highest peaks in the chain of the Sierra de Sancti Spiritus and Pico Porterillo, the summit peak of Sierra de Trinidad.

The offshore area of Golfo de Ana Maria is an extensive isolated shoal water shelf, limited seaward by the steep-to, reef-fringed, low-lying, and mangrove-covered islet chain Jardines de la Reina which, extending some 70 miles and including the islets Laberinto de las Doce Leguas, is continued by a line of sunken dangers to Punta Maria Aguilar and joined by a multitude of islets to Punta de las Angosturas.

Inside these barriers, the offshore area is somewhat obstructed by a considerable scattering of above and below-water dangers, particularly in the far ESE and WNW portions. Since the bottom consists of a very soft mud that readily discolors the water and obscures sunken dangers, mariners are advised to exercise particular caution when navigating the area.

Golfo de Ana Maria is entered from sea through access of a number of passages that lead through the offshore barriers and then continue on to the diversified ports on the mainland.

The principal passages are Canal de Breton (leading to Jucaro and its jurisdictional adjuncts Ensenada de Santa Maria, Ensenada Boca Grande, and Palo Alto), Canal Tunas (leading to Tunas de Zaza), and Canal del Jobabo (leading to Casilda).

Other passages exist but are not recommended. An inner passage leads from Golfo de Guacanayabo by way of Canal de Pingues.

Pilotage.—Pilots board at the seaward entrance to Canal de Breton, Canal Tunas, and Canal de Jobabo. It is compulsory to take a pilot and vessels must proceed to their destination during daylight hours only.

Vessels proceed directly to Tunas de Zaza and Casilda which are the sub-ports to the harbor administration for Bahia de Cienfuegos, but must call at Jucaro first before continuing on to Ensenada de Santa Maria, Ensenada Boca Grande, or Palo Alto.

5.27 Canal de Breton (21°10'N., 79°30'W.) is entered at about 127 miles NW of Cabo Cruz, and is the principal access to Golfo de Ana Maria for vessels of deep draft.

It is also the passage recommended for vessels coming from the E and heading to Jucaro. It leads in over a sand and coral bottom, and can accommodate vessels drawing up to 8.8m.

The E side of the Canal de Breton entrance is marked by Cayo Breton, low, mangrove-covered, and not particularly remarkable. Cayo Breton Light is at the W end of Cayo Breton. It is fronted seaward by a steep-to barely awash reef that breaks in a seaway, but is difficult to make out in calm weather. The conspicuous remains of a white concrete tower stand on the W end of the reef. A racon is operated here.

Vessels anchor, in 7.3m, good holding ground, in a position sheltered from E winds with Cayo Breton extremity bearing 076°, at a distance of about 2.2 miles.

Vessels bound for Jucaro and intending to transit Canal de Breton, steer for the summit of Sierra de Sancti Spiritus on a heading of 354°, and proceed so as to clear the dangerous reef fronting Cayo Breton.

When Cayo Breton Light bears 098°, distant 4 miles, they haul to starboard and proceed through Canal de Breton, exercising care to clear the 8.6m reported obstruction in the inner reaches of the fairway.

Thereafter, they continue through the extensive sound Pozo la Vela and transit Canal Manati, the passage W of the two reef-fringed islets Medanos de Manati.

Vessels drawing less than 7m proceed directly to Jucaro anchorage at Cayo Guinea.

Deep-draft vessels steer in deeper water along a dog-legged track that passes close N of the dangerous reef Bajo Charcas. Vessels proceeding to the inner passage from Canal de Pingues, pass S of Bajo Charcas and S of Cayos Ana Maria, a scattering of islets SE of the Jucaro anchorages.

5.28 Jucaro (21°37'N., 78°51'W.) (World Port Index No. 10500), about 123 miles NW of Cabo Cruz, is a small community and is reported (1995) an inactive transshipment center for the larger island community Ciego de Avila.

Entrance to Jucaro is through Breton Channel during the day or at night. The bottom is rocky sand and has no turns. The maximum draft is 8.8m with no length limitations.

Pilotage.—The pilot boards vessels at the entrance to Breton Channel in position 21°08'18"N, 79°30'24"W. Services should be requested in advance.

Anchorage.—Work takes place at three anchorages, between 5 and 7 miles S of the town, which handle the export of bagged refined sugar.

Anchorage No. 1, located 0.5 mile S of Obispito Cay, has a depth of 7.3m, with no length limitations.

Anchorage No. 2, located SE of Obispito Cay, has a depth of 8.2m, with no length limitations.

Anchorage No. 3, located 1 mile E of Obispito Cay has a depth of 9.1m, with no length limitations.

5.29 Ensenada de Santa Maria (21°16'N., 78°31'W.), a shoal water coastal indentation about 28 miles SE of Jucaro, has the facilities for the transshipment of sugar by lighters to vessels lying at anchor offshore, in 7.3 to 8.8m, mud. Loading operations can become impeded from a wind-driven swell at the anchorage.

Ensenada Boca Grande, which is located 11 miles ESE of Jucaro, is a small shoal water inlet with facilities for the lightering of sugar to vessels at anchor offshore to the S, in 7.3 to 8.8m, mud. The mouth of the port is marked by a lighted beacon.

5.30 Palo Alto (21°36'N., 78°58'W.) is a subport of Jucaro, but only a small community. Conspicuous at Palo Alto is a chimney that stands near a municipal lighterage pier.

The port can only accommodate vessels up to 500 gross tons

A buoyed dredged channel leads to the pier.

Arrecife Palo Alto, awash near its S end, lies 2.25 miles S of Palo Alto. In addition to the chimney at Palo Alto, there are four prominent gray molasses tanks.

Anchorage is secured, in 6.7m, 2 miles SSE of the municipal pier or, in 9m, 4 miles from the pier, SE of Arrecife Palo Alto.

5.31 Canal Tunas (21°31'N., 79°40'W.), entered about 148 miles NW of Cabo Cruz, is a secondary access to Golfo de Ana Maria and a straight passage from the open sea available to vessels drawing no more than 6.7m.

It lies in the entrance to the most direct approach to Tunas de Zaza and at the W extremity of the recommended passage to Jucaro for vessels of suitable draft coming from the W.

Cayo Zazo de Fuera, a low-lying heavily wooded sandy islet, is conspicuous and the first above-water land area SE of Canal de Tunas. Cayos Machos de Fuera, equally low and wooded, lie some 14 miles WNW and constitutes the first islet on the opposite side of the passage.

A sunken danger, with depth unknown but with boulders clearly visible, is reported to lie about 6.75 miles WSW of Cayo Zaza de Fuera.

Aspect.—In the order of their appearance, Lomas del Obispo, the detached NE peaks of Sierra de Sancti Spiritus, Cayo Zaza de Fuera, Cayo Blanco de Zaza Light, the tall chimney standing in Central Siete de Noviembre (Central Natividad), and a sugar mill about 4.5 miles ENE of Tunas de Zaza are useful in the approach and transit of Canal de Tunas.

Directions.—Vessels destined for Tunas de Zaza or Jucaro and intending to transit Canal Tunas proceed to a position about 9.5 miles WNW of Cayo Zaza de Fuera.

Then, steering an ENE course, they transit Canal Tunas and proceed until Cayo Blanco de Zaza Light bears 351°, distant about 3 miles, then they either haul to starboard, join the track N of Canal Manati and continue on to Jucaro, as described under Canal de Breton in paragraph 5.27, or they haul to port and

continue on to Tunas de Zaza.

If the latter, they steer for the Central Siete de Noviembre chimney and proceed until Cayo Blanco de Zaza Light bears 305°, wherein, they haul N and continue on to Tunas de Zaza anchorage.

5.32 Tunas de Zaza (21°38'N., 79°33'W.) (World Port Index No. 10520), about 149 miles NW of Cabo Cruz, is a small community for the transshipment of sugar by lighters to vessels lying anchored offshore.

Anchorage is obtained in position 21°37'N, 79°34'W, between Cayo Blanco de Zaza and Punta Ladrillo, a low swampy mainland point on the W side of the entrance to the Rio Zaza. Vessels anchor, in about 7.6m, mud and sand, 1 mile W of Punta Ladrillo.

Canal de Jobabo (Canal de Este) (21°38'N., 79°52'W.) is entered about 161 miles NW of Cabo Cruz, the principal passage to Casilda.

Canal des las Mulatas, about 7 miles farther NW, should not be used due to its shallow depths. Canal de Jobabo is quite deep and is entered straight from the open sea into an intricate and narrowed inner passage having a least depth of 7.5m, in the dredged channel through Ensenada de Casilda to the facilities at Casilda.

Cayo Blanco de Casilda, marked by a light, on the W side of the entrance to Canal del Jobabo, is a reef-fringed wooded islet of white rock and sand that rises to an elevation of about 7m on its SE side and has the appearance of a wedge when seen from the SW.

A largely uninterrupted line of awash and sunken dangers extends from the islet NW to Punta Maria Aguilar.

Banco Cascajal on the E side of the entrance, a shoal water sand bank, continues NE to the mainland. Vessels awaiting a pilot may anchor, in 7.3 to 8.8m, sand, ESE of Cayo Blanco de Casilda, distant 1.3 miles.

Anchorage.—Several anchorages are available within the area limited seaward by the sunken dangers extending NW and NE from Cayo Blanco de Casilda. Fondeadero Jobabo, 2.5 miles NNE of Cayo Blanco de Casilda, has good anchorage, in about 12 to 14m, mud, for vessels either loading cargo or not required to proceed on to port.

Anchorage is secured in the Casilda outer roadstead, about 5 miles NNW of Cayo Blanco de Casilda, between Cayo Guayo and Cayo Tobaco, in 9.5m, mud bottom. Casilda inner roadstead, just inside the entrance to Ensenada de Casilda, has good anchorage, in 7.3m, with swinging room sufficient for only one small vessel.

5.33 Casilda (21°45'N., 79°59'W.) (World Port Index No. 10530), situated close E of Punta Maria Aguilar, is the port for the small inland metropolis of Trinidad.

Principal imports are general cargo, wood pulp, caustic soda, wood, petroleum, and crude oil. Principal exports are bagged raw sugar, refined sugar, and alcohol.

The entrance channel to the port has a muddy bottom with a very dangerous S-shaped turn. Vessels may enter or depart with a maximum draft of 7.6m and a maximum length of 170m.

Depths—Limitations.—There is an L-shaped pier, the W side of which is 170m long and the S side (tanker pier) is 119m long. Both sides can handle vessels up to 170m, with a draft of 7.6m on the W side and drafts of 7m (bow) and 7.3m (stern) on the S side. Vessels may enter or leave during daylight hours only.

Pilotage.—The pilot boards vessels in position 21°38'30"N, 79°53'00"W, which is 0.7 mile SW of Blanco Cay Light.

Golfo de Ana Maria to Bahia de Cochinos

5.34 The coast between Punta Maria Aguilar, marked by a light and the W entrance point of Golfo de Ana Maria, and Bahia de Cochinos, about 67 miles WNW, contains the mountainous Sierra de Trinidad and Sierra de San Juan, which rise directly from the shore, and contrast markedly with the low-lying swampy plain backing the remainder of the coast.

The area offshore falls away abruptly to considerable depths from a largely uninterrupted low-lying coastal scarp, and thereby differs significantly from the broad shoal water isolated shelves that exist to the E and W.

Banco de Jagua (Banco Xagua) (21°35'N., 80°40'W.), lying well offshore and to the E of Banco de los Jardine's E extremity, is an isolated shoal water patch of coral that rises steep-to in the seaward approaches to destinations on the mainland.

It can be seen by day at a distance of about 1 mile and thereby presents minimum danger. At night, it must be considered very dangerous and negotiated with caution.

5.35 Bahia de Cienfuegos (22°07'N., 80°29'W.) is a spacious harbor midway along the arc that characterizes much of the Cuban S coast. The harbor is unique in that it is the only pocket bay on the entire Cuban coast that has an entrance with a maximum depth greater than 61m.

It is surrounded by a level to undulating terrain, particularly to the E where large tracts of land are sown to sugar cane, and fronted in its entrance and along its W side by low wooded hills that rise abruptly from the shoreline in a series of low scarps. In the immediate approaches to the offshore area, there are no dangers.

Tides—Currents.—Tidal currents average 1 to 2 knots during the dry season and can increase to 4 knots during the wet season, particularly on the ebb when rainwater run-off adds to tidal action. Transit during the ebb tide is recommended.

Aspect.—In the identification and approach to Bahia de Cienfuegos, Punta Colorados Light, on the E side of the entrance to the bay, is considered to be the best marker. Pico La Cuevita, 15.5 miles ESE, is an excellent landmark and has a sharp conspicuous crest which when seen from the W, appears as the highest peak of Sierra de San Juan, since it largely obscures the actual summit Pico San Juan.

Loma Guamo, about 6 miles NNW, is an irregular peak and useful mark for determining position offshore when plotted together with Pico la Cuevita and the light at Punta Colorados.

Bahia de Cienfuegos entrance is a comparatively short, exceptionally deep, and considerably narrowed dog-legged passage having an abrupt right-angle turn at Punta Pasa Caballos, about two-thirds the way along its length.

Range lights have been established in the entrance to Bahia de Cienfuegos.

Pilotage.—Pilotage is compulsory. Pilots board vessels 1

mile WSW of Los Colorados Light. Service is available 24 hours.

It was reported that a whirlpool is formed at Pasacaballos turn, during the rising tide, making navigation very difficult.

Transit during the ebb tide is recommended and a 24-hour watch is maintained.

If vessels must wait until the pilot comes out, they are advised to lie to in such manner as to compensate for a general W set in offshore currents.

Regulations.—Inbound vessels have the right of way in the entrance channel. At the signal tower of Castillo de Jagua, a red flag is hoisted to indicate an inbound vessel is heading for the entrance channel.

When an inbound vessel is midway between Punta del Diablo and Punta de Pasacaballos, a long blast should be sounded on the whistle or siren.

An outbound vessel should sound a long blast when 0.5 mile NNW of Cayo de Carenas. If there is an inbound vessel in the channel, the outbound vessel must wait for the inbound vessel to clear the channel.

Directions.—Vessels bound for Bahia de Cienfuegos and coming from the E are advised to proceed with caution when standing along Jardines de la Reina and associated dangers; if coming from the W they proceed with caution so as to clear the off-lying Banco de Jagua.

They transit Bahia de Cienfuegos entrance in mid-channel as far as Punta Pasacaballos, where the sharp turn NNE must be negotiated with care, particularly when currents set seaward and bear full on the starboard bow.

Vessels are advised to have the anchor ready to let go and, if need be, to run a line to a warping post standing on Punta Pasacaballos in order to heave the bow up into the current.

When clear of Punta Pasacaballos, they proceed so as to pass W of Cayo Carenas, then fair between the sunken danger Banco Gorda and the spit lying off the mainland point Punta Ladrillos, wherein, they continue on to their destination.

5.36 Cienfuegos (22°09'N., 80°27'W.) (World Port Index No. 10540), about midway along Bahia de Cienfuegos' E side, is the principal sugar transshipment center for the Cuban S coast. Cienfuegos is a port of entry.

Depths—Limitations.—Vessels drawing up to 11.9m and with a length of 225m may enter through the channel.

At the entrance there are two sharp turns, at Pasacaballos and the W part of Cayo Carenas. For vessels over 207m, it is recommended that they enter during daylight, slack water, and with the aid of two suitable tugboats.

The port can be entered by inbound vessels anytime day or night, but due to strong tidal currents at the Pasacaballos turn, larger vessels, greater than 4,000 dwt, should sail only during slack water.

The Tricontinental Pier is located SE of Ramirez Cove. It is 207m long and 43m wide. The E side has a depth of 10.5m and is specially conditioned for the loading of bulk raw sugar. The berthing length of the E side is 165m. The W side is 203m in length and has a depth alongside of 8.0m. It is used for the discharge of cereals and general cargo.

The Pablo E. Guzman Pier is located E of Punta Arenas. The W side (E side, out of service) is 95m long with a depth of 8.3m. Berthing operations can be performed only during daylight hours. This pier is used for the discharge of petroleum products and supplying diesel oil.

The Citric Dock, Berths No. 3 and 4, have lengths of 140m with a depth of 9.7m (Berth No. 3) and 9.4m (Berth No. 4). The dock is situated E of the Tricontinental Pier.

Berth No. 5 is still under construction.

The Molasses Terminal Berth is situated S of Point Arenas, with a length of 186m and alongside depths of 10.1 m.

The ICP Submarine pipeline is situated E of Point Majagua. Vessels berth to three mooring buoys aft to discharge fuel oil, draft of 11.5m.

The Olimpia Medina Pier is situated at Marsillan Cove. Berth No. 1 has a length of 170m with a depth of 7.9m. Berth No. 2 has a length of 170m with a depth at the E end of 7.6m and 7.9m at the W end. Berth No. 3 has a length of 170m with a depth of 5.7m.

The Fertilizers Plant Submarine Pipeline provides berthing operations only in daylight. Vessels berth to three mooring buoys aft and one buoy forward to discharge naphtha, depth of 9.4m.

The Thermoelectric Plant Submarine Pipeline provides berthing operations only in daylight. Vessels berth to three mooring buoys aft and one forward to discharge fuel oil, depth of 10.9m.

Pilotage.—Pilotage is compulsory. Pilots board vessels 1 mile WSW of Punta de Los Colerados. Pilotage is available 24 hours.

Anchorage.—Cienfuegos has excellent anchorage and will accommodate the largest vessels ever likely to use the port.

The North Anchorage has a soft mud bottom with a minimum depth of 12.1m. It is used for awaiting berths, bunkers, and water, and also can be used for the discharge or loading of cargo by means of barges.

The General Anchorage is situated in the middle of the entrance to Ensenada Marsillan and has a soft mud bottom. The maximum depth is 10.9m. It is used for awaiting berths, bunkers, water, and provisions. It can also be used for the discharge or loading of cargo by means of barges.

The Quarantine and Explosives Anchorage is situated 0.5 mile off Point Barril and has a minimum depth of 15.2m. The bottom is soft mud, which provides a good holding ground.

5.37 Bahia de Cochinos (22°07'N., 81°10'W.) is the deepest and most extensive of all the sleeve-like inlets indenting the Cuban coastline, having depths of over 200m throughout the greater part of its area.

It is reported (1995) that the area is a prohibited zone. Special permission is needed to enter.

Inland, the terrain is low-lying and flat and consists of a level and largely swampy plain with many areas scattered with dense brush, particularly at the shoreline.

Offshore, its W entrance point at Punta Palmillas is extended seaward to the low-lying islet Cayo Piedras by a shoal water spit that forms the only known danger in the immediate approaches.

Playa Buenaventura lies at the head of Bahia de Cochinos where it is the only community of any significance within the inlet.

There is anchorage near the inlet, but it is reported to be not safe.

Caution.—The buoyage system entering or leaving Playa Buenaventura cannot be relied upon because of the changing characteristics.

Bahia de Cochinos to Cabo San Antonio

5.38 The coastline between Bahia de Cochinos and Cabo San Antonio, about 210 miles to the W, is irregular and much indented. Inland, the terrain is low and consists of a level to rolling plain that is very swampy to the E, particularly on the Peninsula de Zapata, extensively fringed by mangrove and mud beaches in the middle areas, and densely forested to the W, particularly on the Peninsula de Guanahacabibes.

Offshore, Golfo de Batabano and its E extension to Banco de Jardinillos consist of a broad shoal water shelf that fronts much of the coast and has its limit seaward marked by Archipielago de los Canarreos and associated islands and islets. Isla de la Juventud is the largest of these off-lying islands.

Nueva Gerona, on the N side of Isla de Pinos, and Surgidero de Batabano, on the N side of Golfo de Batabano, are the only communities of interest to ocean shipping.

5.39 Isla de la Juventud (Isla de Pinos) (21°40'N., 82°50'W.), the largest of the islands lying off the Cuban coast, is generally quite flat. The S part is very low, swampy, densely wooded, largely uninhabited, and almost completely separated from the N part by the swamps and mangroves of Cienaga de Lanier. The N two-thirds has a wide, very flat coastal plain that merges with a scattering of high, often heavily forested interior hills.

Loma la Canada, the highest of these interior elevations, is the first sighted from the S; from the W, it appears as a domed summit flanked by two sharp peaks. Loma Daguilla (Aguila), the highest peak on the E side of the island, 186m high, appears from the SE as a steep-sided isolated hill.

Cayos Jardines are the numerous islets lying scattered E of Isla de la Juventud for a distance of about 67 miles to the tourist islet Cayo Largo. They are continued farther to Cayo Guano del Este, a group of high, closely spaced barren rocks, constituting the easternmost above-water danger fronting this section of the coast.

Cayo Avalos (21°33'N., 82°10'W.), a small sandy islet about 22 miles E of Isla de Pinos, has good anchorage, in 8m, sand and rock, in a position sheltered from all but W and SW winds, with Cayo Avalos Light bearing NE, distant about 1.7 miles. Vessels make their approach with the light bearing between 045° and 070°, so as to pass NW of the drying rock Sambo Head.

5.40 Ensenada de la Siguanea (21°38'N., 83°05'W.), on Isla de Pino's W side, is spacious, quite unencumbered, and comparatively deep-water inlet having its seaward entrance between Punta Frances, the low-lying mangrove-covered W extremity of Isla de Pinos, and Cayos los Indios, a group of low-lying heavily-wooded islets that give a measure of shelter from the W.

The inlet is a commodious anchorage with good holding ground wherein vessels lie according to draft.

Vessels with a draft too great to enter, anchor in the entrance W of the meridian of Punta Frances where unexpected rips may occur in consequence of a difference in tidal conditions existing at sea and inside the inlet.

Pilotage.—Pilotage is not compulsory, but advisable. Pilots board off Punta Frances.

Anchorage.—A quarantine anchorage is established about 3.5 miles NW of Punta Frances, for vessels drawing 6.5m or less, in good weather, when transporting animals to a quarantine center nearby.

Directions.—Vessels, intending to enter Ensenada de la Siguanea and making their approach from the S or SW, proceed so as to pass no less than 2.3 miles NW of Punta Frances before hauling into the entrance. If approaching from the W, they steer for Loma la Canada on a heading of 084°, transit the entrance, and continue on to anchorage according to draft.

Vessels, having entered Ensenada de la Siguanea and bound for destinations on Isla de Pinos N side, steer when the isolated **Loma Solado** (Solado Hill) (21°45'N., 83°02'W.) bears 052°, distant about 6.5 miles.

When the low-lying sandy point of Punta Buenavista comes abeam to starboard, they haul NNE and maintain a position in deep water by means of cross bearings on the several landmarks available.

5.41 Nueva Gerona (21°53'N., 82°48'W.) (World Port Index No. 10550) is a small community lying somewhat inland on the N side of Isla de la Juventud. It is the principal community on the island.

Pilotage.—Pilotage is compulsory. Pilots board at Punta Francis.

Anchorage.—There is anchorage, in 6.7m, sand, about 1.7 miles NE of the entrance to the river leading to Nueva Gerona, with Punta Columbo bearing 166° and Punta de Salimas bearing 115°. Ten vessels with a draft of 5.6m can anchor in this anchorage.

Golfo de Batabano (22°15'N., 82°30'W.) lies between the mangrove-fringed island Cabo Diego Perez and Cabo Frances, about 142 miles to the W, and includes the greater part of the extensive, largely shoal water shelf confined between the mainland and the numerous islands and islets ranging E and W from Isla de Pinos.

Banco de los Jardines and its E extension Banco de Jardinillos continue the shelf to the E and, together with Cayo Diego Perez, constitute the steep-to W limit of Golfo de Cazones, a large deep-water arm of the sea that interrupts the coast and its off-lying dangers some 10 to 15 miles W of Bahia de Cochinos, and which in its inner part becomes much encumbered by a remarkably circular scattering of sunken dangers.

Surgidero de Batabano, on the N side of Golfo de Batabano is the principal center of interest to shipping.

Tides—Currents.—Tidal action is negligible. Currents and water level are considerably influenced by the wind.

A NE wind lowers the level while the more common SE wind raises it. Extreme lows occur with a NW wind, while extreme highs occur with SW wind.

Currents outside Golfo de Batabano can become a concern since a strong NW set has been experienced toward the dangers between Banco de Jardinillos and Isla de Pinos. This is particularly the case with SE winds.

A number of passages lead into Golfo de Batabano from Golfo de Cazones and the open sea. All are shallow or very

nearly so, and all are quite intricate and require local knowledge for their transit. Pilots are available off Bahia de Cienfuegos, Isla de Pinos, and Cabo Frances.

The principal passage to Surgidero de Batabano, with a least depth of about 4m, leads through Ensenada de la Siguanea W side and wanders to its destination for a total distance of about 115 miles.

Caution.—Anchorage or the use of trawling equipment is prohibited within 4 miles of any cable areas. Anchorage or the use of trawling equipment is prohibited in the Golfo de Batabano between La Coloma and Rio las Casa and Ensenada de la Siguanea. These areas can best be seen on the chart.

5.42 Surgidero de Batabano (22°41'N., 82°18'W.) is a community fronted SE by a partially-sheltered roadstead. The anchorage is exposed to SE winds, common between July to October. Cargo is handled from lighters.

Anchorage.—Vessels anchor about two miles SE of Surgidero de Batabano in depths of 4 to 5m, mud and weed. There is no shelter and the holding ground is poor.

Ensenada de Cortes, in the far W reaches of Golfo de Batabano, is a sizable, largely unencumbered coastal bight greatly obstructed seaward by a scattering of sunken dangers formed by the islands and islets extending W from Isla de Pinos.

It is entered by means of a narrow passage leading close W of a partially submerged sunken wreck charted about 12.5 miles NNE of Cabo Frances. Vessels anchor, in 6.7 to 10m, good holding ground, within the bight or, in 6.4 to 14.6m, S and SE of the partially-visible entrance wreck.

Aspect.—The coast between Cabo Frances and Cabo San Antonio, about 51 miles to the W, is quite flat and either densely forested or heavily brush covered. Low-lying bluffs and sand cliffs, with few exceptions, rise steeply from a shoreline fronted throughout by a shoal water coastal margin which, commonly extending about 0.5 mile offshore, drops away abruptly to ocean depths.

Ensenada de Corrientes (Bahia de Corrientes), closer to Cabo San Antonio than Cabo Frances, is a large, exceptionally deep-water coastal indentation or bight fronted throughout by a narrow, shoal water coastal bank unencumbered by few known dangers.

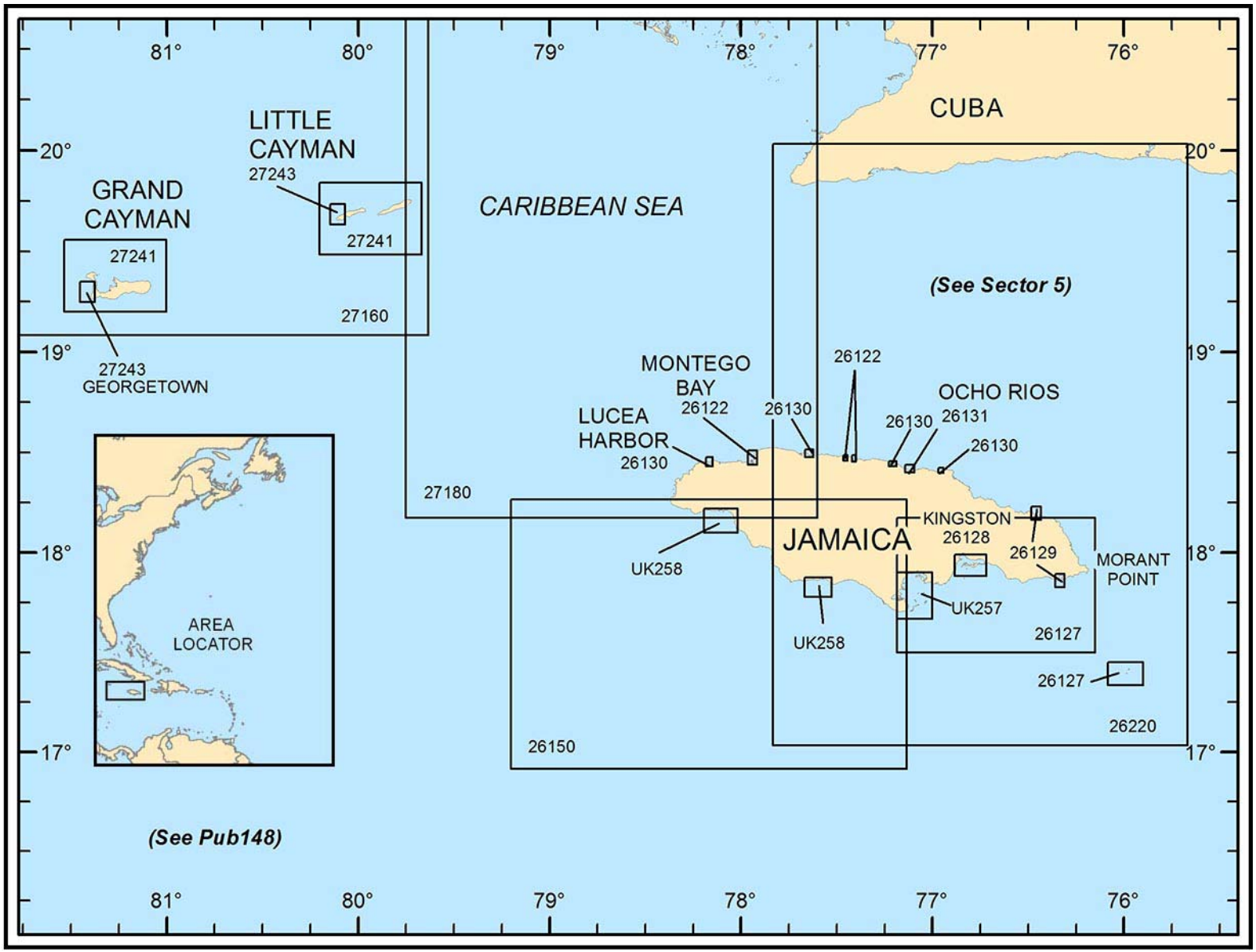
Cabo Corrientes, the E entrance point, is low and sandy and remarkable for the broken coral scattered inland as though a stone wall in ruins. The point is reported radar conspicuous at about 19 miles.

5.43 Surgidero de Corrientes (Corrientes Anchorage) (21°47'N., 84°31'W.) is an open roadstead lying close offshore between Cabo Corrientes and Punta Caiman, a point about 2.5 miles N consisting of conspicuous black rocky cliffs higher than the surrounding coast. Vessels anchor, in 12.8 to 16.5m, sand and coral, in a position well-sheltered from prevailing NE winds, with Cabo Corrientes bearing 155° and Punta Caiman bearing 013°. A light is shown from Cabo Corrientes.

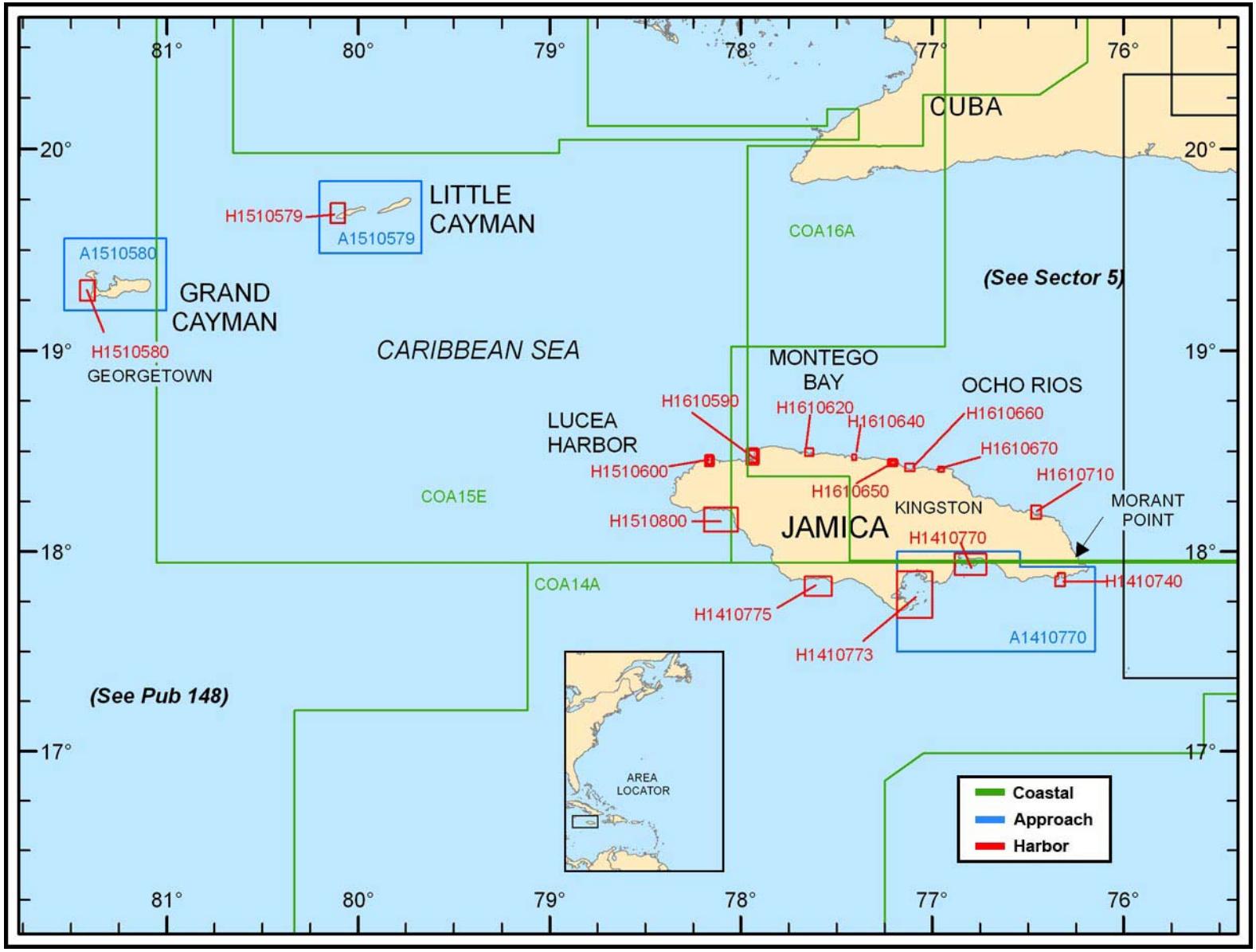
If making their approach from the W early in the day when the sun tends to obscure landmarks, they may be guided to their destination by noting the marked contrast in water color as they come onto the coastal bank.

The anchorage is exposed to S and SW winds. A strong current sets S through the anchorage.

Cabo San Antonio (21°52'N., 84°57'W.), the W extremity of Cuba, has been previously described in paragraph 4.3.



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



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SECTOR 6 — DNC LIBRARY INFORMATION

SECTOR 6

JAMAICA AND THE CAYMAN ISLANDS

Plan.—This sector describes the island of Jamaica and its surrounding area. The description begins with off-lying banks and dangers, then shifts to the Cayman Islands, and continues with a description of the coast of Jamaica.

General Remarks

6.1 Jamaica and its surrounding area is understood to include, in addition to the island and its immediate vicinity, the Cayman Islands to the NW and offshore dangers to the NE, SE, and SW as far as Pedro Bank.

Jamaica is a largely mountainous island of luxurious vegetation and healthy climate, particularly in its higher elevations. It is grouped among the Greater Antilles, where it is third largest in size, and located in a position well to the W of the usual track between the Windward Passage and the Panama Canal and close aboard the track between Yucatan Channel and the Trinidad area. This latter track commonly passes N of the island and N of the Cayman Islands.

Jamaica is the world's foremost producer of bauxite, with several ports specifically maintained for its transshipment, and a significant exporter of bananas and sugar cane.

The Cayman Islands lie well to the WNW of Jamaica, where they were discovered in 1503 by Columbus who named them Las Tortugas after the many turtles in the area. The islands are generally low-lying, rather well forested or brush-covered, and outside the usual traffic lanes of ocean vessels.

The water area about Jamaica contains numerous sunken dangers which, lying well offshore and with little advance warning of their existence, constitute a significant hazard to navigation. These dangers, particularly the Morant Cays, have been the site of many ship wrecks. Mariners are urged to exercise prudence when navigating within their proximity.

Particular caution should be exercised with regard to current which has a general set to the W at a velocity of about 1 knot.

Winds—Weather.—The main source of climate and current conditions affecting Jamaica is the trade winds as these partake of the general North Atlantic clockwise movement circulating around the semi-permanent area of high barometric pressure alternating between the Azores and Bermuda.

South of 25°N and over the islands of the Greater Antilles generally, the prevailing winds are NE to E, with NE wind common in the winter. In the summer winds are usually SE. Local variation occurs principally in consequence of an interplay with land and sea breezes.

Land and sea breezes depend for their development on the solar heating of land particularly strong from (June to August) and for their effect on local topography and coastal trend. Jamaica is so situated geographically with regard to prevailing winds that the daytime sea breeze is commonly augmented on the windward coast and largely diminished on the leeward coasts. Thus, Jamaica NE coast is a lee shore as much of the year with sea breeze augmented during summer while the SE coast, particularly in the area of Kingston Harbour and Portland Bight, is somewhat sheltered shore where trade winds are light early in the year and often calm in the summer.

The Kingston Harbour and Portland Bight area has a nighttime land breeze, a lull at sunrise, an E sea breeze beginning in the early forenoon reaching a maximum by mid-afternoon followed by a decline at sunset and the renewal of the cycle with the return of the nighttime land breeze.

The West Indian hurricane, the main aberration within the general forces governing the production of climate conditions within the area under discussion develops more often than not well to the E and in the latitudes of the low barometric pressure doldrums. It travels slowly W within the belt of the NE trade winds and, with an increase in speed, generally recurves NE in about 30°N.

Jamaica lies rather on the edge of hurricane tracks such that the frequency of occurrence is about once every 2 or 3 years, though the interval has fluctuated greatly.

Similarly, Jamaica lies in an area where hurricane strength is often times less than maximum with the consequence of heavy rains but wind velocity more on the order of lesser storms or gales.

Northers are a lesser aberration within the general climate producing forces. They originate as an escape from the continental United States of large cold air masses which, in their movement S and SE can reach gusts of 60 knots or more but which, after traveling over Cuba, reach Jamaica N coast with a velocity seldom greater than 47 knots.

They bring widespread cloudiness, poor visibility and steady or gusty winds (depending on the drop in barometric pressure) and indicate their coming with a heavy cloud cover at the N or NW horizon. They tend to burst out of the N or W and then settle down for a day or two out of the NW and N.

Weather conditions are a function of geography and the trade winds with the result that tropical temperatures are high and the air moisture laden.

Rainfall is prevalent in May and June and again from August to November. It is less prevalent at other times.

The amount of rainfall is light on the lee side of the mountains as compared to the windward side.

Tides—Currents.—Ocean currents affecting the Jamaica coastal area are largely the result of the wind driven clockwise flow circulating around the North Atlantic basin. This flow, the North Equatorial Current, sets generally W. Upon reaching the Caribbean it branches such that one branch veers NW while the other continues on through the Lesser Antilles and along the S side of the Greater Antilles.

The N edge of the W setting branch passes along Jamaica's S side with a velocity of about 1 knot, the strength being greater the farther the distance offshore.

An offshoot of the NW setting branch sets WSW through Windward Passage, passes along Jamaica's N side and thereafter joins the current passing S of the island such that the combined flow continues S of Little Cayman and then WNW into Yucatan Channel.

The velocity of these currents and the general W set can be considerably influenced by prolonged W and SW winds.

Tidal rise and fall is about 0.3m with the result that tidal currents are weak and influenced by local conditions. It has been reported (2008) that the tidal range exceeded 1.2m, with little or no current.

Pilotage.—Pilots for all ports in Jamaica are provided from Kingston. Vessels should pass their ETA and request for pilotage through their agent well in advance of arrival.

Caution.—Several acts of piracy have taken place at Kingston and Port Esquivel in the past. Vessels should take the appropriate precautions to guard against this, especially at open anchorages.

Off-lying Banks and Dangers

6.2 Off-lying banks and dangers lie with their greatest concentration to the NE and SE of the E extremity of Jamaica, and on Pedro Bank to the S and SW of Jamaica.

No known dangers lie in the ocean depths of Cayman Trench, which is considered the deepest part of the Caribbean and separates Jamaica from Cuba to the N and the Cayman Islands to the NW.

Formigas Bank (18°31'N., 75°46'W.), a rocky bank with depths of less than 20.0m over the greater part and with a least depth of 5m near its NE end, lies about 43 miles NE of Morant Point. There are depths of 9 to 15m along its NW edge and of 24 to 73m along its SE edge.

The bank is steep-to on all sides and consists of rock and coral patches over sand. During strong breezes, the position of the N end of the bank is indicated by breakers and a heavy swell running over it.

An old stranded wreck, partly visible above water, is situated in position 18°31'45"N, 75°45'47"W. During HW (calm water), the wreck is visible at 0.3m above water.

Three cylinders of the old main engine are visible and seem to lie in a ENE to WSW direction. The water depth in the immediate vicinity around the main body of the old wreck is 5 to 6m.

Grappler Seamount (18°24'N., 75°58'W.) lies 31 miles NNE of Morant Point. The bank consists of coral and has a least charted depth of 27m. It has been reported that the bottom is clearly visible in calm weather when over the bank. The sea is reported to break over the bank during fresh E winds.

Henry Holmes Bank (18°09'N., 76°06'W.) consists of two small detached banks that lie about 15 miles NNE of Morant Point. The banks lie about 2 miles apart in an E to W direction. The banks have a least depth of 36.6m.

A shoal, with a depth of 14.5m, lies about 1 mile SSW of the W bank. A detached bank, with depths of from 45 to 62m, lies 3 miles SE of Henry Holmes Bank.

6.3 **Albatross Bank** (17°40'N., 75°42'W.) lies about 30 miles ESE of Morant Point. The bank has a least charted depth of 18.5m. A smaller detached bank, with a least depth of 22m, lies off the NE extremity of Albatross Bank. A bank, with a depth of 27m, lies 6 miles SW of Albatross Bank with deep water in between.

A bank, with a depth of 29m, was reported to lie approximately 5 miles NW of Albatross Bank.

Morant Cays (17°24'N., 75°59'W.), about 32 miles SSE of Morant Point, consists of several small islets grouped closely together on the summit of a comparatively extensive crescent-shaped bank of coral.

A bank, with depths of less than 37m, extends 6.5 miles NE and 12.5 miles WSW from the group. A 17.5m patch lies on the edge of the bank, 4 miles WSW of South-West Cay. A depth of 17.5m was reported off the NE end of the bank, 7.5 miles NE of North-East Cay.

Morant Cays are low-lying, mostly uninhabited, and fronted by reefs over which the sea constantly breaks. They are reported radar conspicuous at 10 miles. Morant Cays are to be approached with caution. Currents in their vicinity are quite irregular both with regard to set and velocity (the latter having reached 3 knots), such that vessels navigating within their proximity at night are advised to pass well to the N.

North-East Cay is sometimes divided into three parts, the sea washing over the connecting sand spits. Several huts and a water tank stand on the S side of the cay. A coral head, with a depth of 3.2m, lies 0.5 mile W of the cay. A light is shown from Breezy Point on North-East Cay. A depth of 26.5m was reported 20 miles W of North-East Cay.

South-East Cay lies 1.2 miles SSW of North-East Cay. Sand spits, which extend from its ends, alter in shape with the seasons of the year; in summer the SW spit is washed away and deposited on the W side of the cay. South-West Cay lies 1 mile SW of South-East Cay. A rocky ledge extending from the cay is used as a pier. A dangerous wreck, with a depth of 1.4m, lies 0.7 mile NW of South-East Cay.

Caution.—The cays have been the scene of many wrecks, therefore, the greatest caution must be exercised when navigating in their vicinity.

Pedro Bank

6.4 **Pedro Bank** (17°05'N., 78°20'W.), lying to the S and SW of Jamaica, is an extensive steep-sided and only partially examined plateau of sand and coral. The surface of the bank slopes gently from the elevated area of Pedro Cays to the W and N with depths from 13 to 30m. Fish traps or fish pots are often found on the bank, especially near the cays.

Caution.—Uncharted coral pinnacles may exist within the area of Pedro Bank, therefore, the greatest caution must be exercised when navigating in the vicinity.

6.5 **Portland Rock** (17°06'N., 77°27'W.) lies about 39 miles SSW of Portland Point, the S extremity of Jamaica.

The rock consists of two summits, and from the E or W, appears as two rocks. Temporary anchorage may be obtained, in a depth of 14m, 0.2 mile W of Portland Rock. Farther W, depths increase to 22m.

Blower Rock (17°03'N., 77°31'W.) lies 5 miles SW of Portland Rock, and is 0.6m high.

Shoal water, with a least depth of 4.3m, extends up to 1 mile W and S of the rock. In ordinary weather, the sea breaks heavily on the rock and a column of water thrown up can be seen at a good distance.

A group of rocky shoals, with a least depth of 12.5m, lie 4 miles NW of Blower Rock, with a 10.1m patch midway between. Willsteed Rock and Doyle Shoal, with depths of 12.2m

and 14m, lie respectively 8 miles NW and NNW, respectively, of Blower Rock and on a bank with general depths of 18 to 20m.

Shannon Rock (17°02'N., 77°40'W.) lies about 9 miles WSW of Blower Rock. The sea breaks heavily over the rock, which is 0.5m high. Its S and W sides are steep-to, and soundings give no warning of its proximity.

A tongue of the bank extends 17 miles SW from Blower Rock terminating at a noll with a depth of 22.5m then falling away very rapidly. There is a dangerous rocky peak over which there is a least depth of 5.6m known as Beth Rock, which lies 7.5 miles SSW of Blower Rock.

Another rocky shoal on this tongue, over which there is a depth of 11m known as Page Shoal, lies 5 miles SW of Blower Rock.

Powell Knoll, with two heads about 0.4 mile apart, lies about 20 miles SW of Blower Rock. The knoll shows a least depth of 28.8m.

6.6 **Pedro Cays** (17°00'N., 77°50'W.), lying about midway along the S edge of the E half of Pedro Bank, are several small, flat, and low-lying cays which are mostly uninhabited.

Northeast Cay is covered with brush and has a group of palm trees growing on its NW side. The sea breaks over a reef on the S side of the cay.

A lighted beacon stands close to the N extremity of the cay. E Shoal, with a least depth of 1.8m, lies almost 2 miles E of Northeast Cay beacon. G Shoal, with a least depth of 6.4m, lies about 0.7 mile E of Northeast Cay beacon.

Middle Cay (17°01'N., 77°47'W.) lies 2.5 miles SW of Northeast Cay and is covered with low grass and bushes. A number of huts and a large shed stand on the SE part of the cay. A reef, upon which the sea breaks, extends 0.2 mile S and W from the cay.

Southwest Cay, the largest of the Pedro Cays, lies 2.3 miles SSW of Middle Cay and is a protected bird sanctuary. A conspicuous tree stands on the island.

South Cay (16°57'N., 77°50'W.) lies 3 miles SSW of Southwest Cay. It consists of coral and shells. A prominent wreck lies on the N side of the cay and is sighted long before the cay becomes visible. D Shoals and C Shoal lie between South Cay and Banner Reef.

Anchorage.—Anchorage can be taken, in a depth of 10m, with Northeast Cay beacon bearing 095°, and distant 0.3 mile from the nearest point of land. Anchorage can be taken, in a depth of 9m, with the NW extremity of Middle Cay bearing 081°, distant 0.3 mile. Anchorage may be taken, in a depth of 9m, with the NW point of Southwest Cay bearing 067°, distant 0.5 mile.

6.7 **Banner Reef** (16°52'N., 78°06'W.), awash and 1.5 miles in length, lies 16 miles WSW of South Cay. The reef breaks, except in very calm weather, when surface ripples indicates its presence.

Numerous coral heads lie within a distance of 1.5 miles N and W of Banner Reef, and under no circumstances should this area be approached.

Southwest Rock (16°48'N., 78°11'W.) lies about 6 miles SW of Banner Reef. It is composed of dark brown dead coral and normally breaks. It can be approached close on its SE side.

Walton Bank, with a least depth of 25m, lies between Southwest Rock and the W end of Jamaica. Two banks lie to the E of Walton Bank and can best be seen on the chart. Tidal rips are charted over the bank.

The dangers S and W of Pedro Bank are described in Pub. 148, Sailing Directions (Enroute) Caribbean Sea, Volume II.

The Cayman Islands

6.8 From W to E, the Cayman Islands comprise Grand Cayman (the largest), Little Cayman (the smallest), and Cayman Brac (the highest). All the islands are inhabited, with Grand Cayman having the largest population.

Georgetown, located on Grand Cayman, is the only port of call for large vessels. Cayman Brac and Little Cayman are separated by a deep strait about 3 miles wide, and together are sometimes known as the Lesser Caymans.

Cayman Bank (19°20'N., 81°35'W.) lies about 9 miles WSW of the NW extremity of Grand Cayman. The bank is a steep-to coral and sand ridge which, with depths of 27 to 37m, can at times be detected by ambient surface water discoloration or by the presence of strong ripples.

A depth of 27m was reported to lie 2.5 miles NW of Cayman Bank.

Pickle Bank (20°24'N., 80°27'W.), with depths of 18m, coral, extends 2.7 miles NE-SW from a position 49 miles NNW of West End Point, Little Cayman.

Its edge, which is almost wall-sided, is clearly marked when over it. When on the bank, the white coral bottom with dark spots of weed, can be distinctly seen.

Caution.—Marine Conservation Regulations are in force in the Cayman Islands. These regulations establish three categories of Marine Parks (replenishment zones, marine park zones, and environmental zones). Consult local officials for details.

Grand Cayman

6.9 **Grand Cayman** (19°19'N., 81°17'W.) is 20 miles long in an E-W direction and varies in width from 4 to 7 miles. No part of the island is more than 15m above sea level. The coast is mostly rocky, protected by coral reefs, and enclosing several harbors.

A barrier reef of coral, with passages available for small craft only, closely fronts much of the coast. The notable exception is the W side of the island where the coast is largely unencumbered. The island is radar conspicuous, particularly from the SE, at about 18 miles.

Gorling Bluff is a rounded, wooded cliff that forms the SE extremity of Grand Cayman. A light is shown on the bluff. A barrier reef, on which the sea breaks heavily at times, skirts the E coast. There are breaks in the barrier reef that afford small craft access to the coast.

A conspicuous stranded wreck, which is also a good radar target, lies on the barrier reef 0.2 mile S of the entrance to East Channel. Gun Bay is a settlement and lies close NE of Gorling Bluff. A radio tower, with an elevation of 91m, stands close S of Gun Bay.

The tidal currents off the E coast of the island are strong and irregular, and rips are formed SE of Gorling Bluff and NE of Collier's Point.

The coast between Gorling Bluff and the SW extremity of Grand Cayman is low, thickly wooded, and fringed by reefs. Blowholes are observed between Cottage Point and East End. Bodden Town lies in the middle part of the S coast. It is a settlement of white houses that are prominent from the SE.

Great Pedro Point is the extremity of a rounded projection 2 miles WSW of Bodden Town. Little Pedro Point lies 0.7 mile W of Great Pedro Point.

During N or NW winds, anchorage may be taken, in a depth of 18.3m, with Little Pedro Point bearing 101° and houses at the head of Spotts Bay bearing 354°. Landing can be effected on a sandy beach at the head of the bay by passing through a break in the reef.

6.10 South Sound (19°16'N., 81°22'W.), a reef harbor only available to small craft, lies between Sand Cay and South-West Point. South-West Point, which is low and sandy, is fringed with reefs. A house stands 0.5 mile N of the point and is conspicuous from offshore.

Sand Cay (19°16'N., 81°23'W.) is located on the W end of the reefs off South Sound, which is usually marked by breakers. A light is exhibited from a white tower, with a black guardrail, on Sand Cay. Hastings Rock, which lies 0.2 mile SSW of Sand Cay, has a least depth of 4m and is steep-to on its W side. A vessel rounding South-West Point from the E, should give the point a berth of at least 1 mile until it bears more than 000°.

The N coast, between Roger Wreck Point and Conch Point, 17 miles to the WNW, is low, mostly wooded and almost completely fringed with reefs. There are several openings in the reefs through which small craft can find shelter or access to the coast.

Rum Point (19°22'N., 81°16'W.) is located 10 miles W of Roger Wreck Point, and between them are three indentations in the coast, Bluff Bay, Old Man Bay, and Brinkleys.

6.11 North Sound (19°20'N., 81°20'W.) is a large indentation in the coast between Rum Point and Conch Point. The fringing reef stretches, from point to point, across the entrance. General depths within the sound are 1.8 to 3.7m, but are reported to be deeper than charted.

The usual anchorage is in the SW corner of the sound, 1.5 miles E of Georgetown Barcadere, the landing place for Georgetown. The reefs break the sea during N winds, making the anchorage quite comfortable.

The main channel is no longer in use. The entrance to North Sound is now in position 19°23'.0N, 81°19'.6W to the E of Blower Reef.

Local knowledge is essential. A light is shown 1.5 miles SW of Conch Point.

The coast between Conch Point and Boatswain Point, 1.7 miles SW, and then to North-West Point, 0.7 mile farther SSW, is steep-to and has no fringing reef.

West Bay, entered between North-West Point and Low Point, 4 miles SSE, is fringed with foul ground. A wreck, used as a diving site, with a depth of 9m, lies 0.5 mile offshore 1.7 miles N of Low Point. A conspicuous stranded wreck lies on the beach 0.2 mile S of Low Point.

6.12 Georgetown (19°18'N., 81°23'W.) (World Port Index No. 10580) is situated on the W coast of Grand Cayman, about 1.7 miles N of South-West Point.

Cayman Island Port Authority Home Page
http://www.caymanport.com

Depths—Limitations.—The port area consists of an area of reclaimed land fronting the town. Range lights, in line bearing 090°, mark the port area. However, it has been reported (1997) that the range is difficult to see; the lights blend in with the surroundings and may be obscured by cranes on the pier. It is reported (2010) that the charted range is not usable as the front range light is missing.

Four mooring buoys are located 0.7 mile SW of the port. Unloading facilities are provided by submarine pipeline for refined petroleum products. Tankers up to 25,000 dwt can be accepted. Details of berthing information can be found in the table titled **Georgetown—Berth Information.**

Aspect.—There are two churches in the town with black spires; the northernmost is a white building with a green roof close E of the port area. The other is a white building with a red roof.

The town, situated around the port area, contains many large white modern buildings. There are numerous radio masts in Georgetown.

Georgetown—Berth Information

Berth	Berth Length	Depths Alongside	Maximum Draft	Remarks
South Pier	134m	—	3.6-6.7m	Lo-lo.
South Pier extension	103m	—	5.1-6.7m	General.
North Pier	61m	—	5.7-7.3m	Ro-ro.
West Wharf	73m	—	4.0m	Lo-lo and Ro-ro.
CBM offshore	—	15.2m	10.9m	Tanker mooring located 0.7 mile SW of jetty. Can accommodate vessels up to 40,000 dwt with a maximum loa of 183m.

Two groups of oil tanks stand on the coast about 0.5 mile WSW of the S radio mast. An aeronautical radiobeacon is also located in this area. Range lights, in line bearing 090°, are shown from the pier head.

Pilotage.—Pilotage is available by request only. The pilot boards 1 mile W of the Terminal oil Tanks.

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

1. Call sign: Port Security
2. VHF: VHF channel 16
3. Telephone: 1-345-949-2055
4. Fax: 1-345-949-5820
5. E-mail: info@caymanport.com

Anchorage.—Anchorage restrictions have been implimented in order to protect the coral reef. The Georgetown Anchorage is comprised of 5 anchorages for cruise ships and large vessels. This anchorage is the only one off the island and it is marked by lighted buoys and has a depth of 15m. Center positions of the five anchorages are listed below:

a. 19°17.9'N, 81°23.2'W.
b. 19°18.2'N, 81°23.3'W.
c. 19°18.5'N, 81°23.5'W.
d. 19°17.6'N, 81°23.3'W.
e. 19°18.7'N, 81°23.6'W.

Anchorage is not permitted in the marine parks. Tankers waiting to discharge at offshore moorings can use the Georgetown Anchorage except during times of strong N winds when they are recommended to anchor with Sand Cay bearing 350° at a range of 6 miles. Vessels are still permitted to use dynamic positioning while tendering in Spotts Bay but anchoring is prohibited.

These anchorage areas are well-sheltered from prevailing NE winds, but open to NW winds which occur between November and April, and send in a heavy sea.

Northers, usually preceded by heavy cloud banks and occasional lightning to the SW, are dangerous and should not be ridden out while lying in the anchorage. A strong wind in Yucatan Channel may generate a swell which makes the berths untenable. Anchorage can also be obtained, in depths of 4 to 10m, close W of the harbor.

A prohibited anchorage area lies off the island's W side. Submarine cables are contained within it and lie off the island's SW side. They may be best seen on the chart.

Georgetown—Inner Harbor

Georgetown Harbor

Georgetown—Cruise Ship Terminal

Little Cayman

6.13 Little Cayman (19°41'N., 80°02'W.), the smallest of the Cayman Islands, is covered with thick brush. It is reef fringed and sparsely inhabited. The island is about 9 miles long and 1 mile wide. The sea always breaks on the barrier reef that continuously fronts the S side of the island and encumbers free access to South Town, a small village at the head of the shoal water reef harbor South Hole Sound.

The S coast of Little Cayman is sandy, and for the most part is skirted by a reef on which the sea always breaks. The bottom off the coast is foul. A light is shown on East Point, the E extremity of the island.

South Hole Sound (19°40'N., 80°04'W.), a reef harbor, is available only to small craft with local knowledge. The entrance is located about 0.7 mile SW of Blossom Point.

Landing can be effected on the beach 1 mile SW of the point near South Town.

Pilotage.—Pilotage is available at Cayman Brac.

Anchorage.—Good anchorage can be obtained, in 27m, on a bearing of 227°, distant about 0.7 mile from the light near West End Point. This is a safe anchorage for large vessels during prevailing NE winds. The bottom is soft coral and sand. The anchorage is in approximate position 19°39'N, 80°07'W. Anchorage has also been reported to be available about 0.9 mile ESE of East Point.

Anchorage Bay (19°40'N., 80°06'W.) lies close NE of West End Point. The bay affords anchorage, in depths of from 15 to 18m, good holding ground, off a rocky but steep-to coast. A vessel should anchor with West End Point bearing 206° and Jackson Point bearing 057°.

Bloody Bay, immediately SW of Jackson Point, affords anchorage, in a depth of 15m, with the point bearing 070°, but caution is necessary, as the depths shoal rapidly.

Cayman Brac

6.14 Cayman Brac (19°33'N., 79°48'W.) (World Port Index No. 10585), 10 miles long, is covered with thick brush and rises abruptly at North East Point, its NE extremity.

Its summit, flat and bounded by steep limestone cliffs, slopes gradually to West End Point, its SW extremity; the cliffs terminate 1 mile from this point.

There is a narrow plain stretching the length of the N side of the island. The higher NE part of the island is reported to be radar conspicuous at 12 miles. North East Point is steep-to, though the sea breaking on the point gives it an appearance of being fringed with reefs. A light is shown on the point.

Booby Point is located 1 mile W of North East Point and Stake Bay Point, 4.5 miles farther WSW.

A water tower and dish aerial stand close SE and 1.5 miles SW, respectively, of Stake Bay Point.

Landing can be effected at Creek, about 2.5 miles WSW of North East Point, where there is a shallow channel through the coral reef. This channel leads to a small wharf with a depth of 3.5m alongside.

Behind this wharf stands a small red-roofed building. A conspicuous white house, with a green roof, is situated close E of this position. A radio tower stands 1 mile SW of Stake Bay Point.

Tanker lightering operations are carried out by vessels lying underway, but stopped. This occurs both N and S of Cayman Brac and by vessels anchored off each end of the island. Such vessels are unable to maneuver and should be given a wide berth.

6.15 Port of Creek (19°44'N., 79°46'W.) has been put into operation at the creek on the island.

Most port rules and regulations are those as obtained at the port of Georgetown. There is a restriction of a maximum draft of 4.8m at any time.

Depths—Limitations.—The port area consists of two berths in the harbor. One is 61m in length, accommodating vessels up to a maximum forward draft of 3m. The other is also 61m in length, accommodating vessels up to a 4.8m draft. Ro-ro vessels up to a 4.8m draft can be accommodated.

Cayman Brac and the nearby Little Cayman Island are used for the purpose of lightering operations between tankers. Officials board tankers by launches from the shore. Oil transfer operations are carried out off both islands and the service tanker keeps in the lee of the larger tanker being lightered. Operations are occasionally interrupted due to bad weather and the amount of mooring lines between the two vessels may vary.

Principal imports and exports are cars, cement, diesel, gas, heavy equipment, and general cargo.

Stake Bay is an indentation between Stake Bay Point and Frenchman Point, 3.5 miles WSW. Scott Bay is an indentation between Frenchman Point and West End Point.

There are no known off-lying shoals, but in depths of less than 9m, there are a number of coral boulders that rise 1.8m from the bottom, especially in Stake Bay.

The S coast of Cayman Brac is skirted by a narrow, broken reef. There are no known off-lying shoals, but in depths of less than 9m there are a number of coral boulders that rise 1.8m from the bottom.

Landing can be effected at high water only, at a stone jetty close to the light near West End Point. Leading beacons lead in through a channel, with depths of about 0.9m, through the reef to the jetty. An aeronautical radiobeacon is reported in position 19°41.3'N, 79°51.6'W.

Pilotage.—Pilotage is compulsoryfor vessels over 800GT, all cruise ships and tankers. The pilot boards in position 19°45.9'N, 79°45.8'W or in position 19°40.2'N, 79°52.9'W, and remains on board during all berthing, unberthing, and lightering operations, together with two assistants and two riggers to handle the fenders.

The pilot vessel (call sign: Bonito) may be contacted on VHF channel 16.

Mooring can take place 24 hours. Vessels use VHF channel 16 (call sign: CBPA) for radio frequency information.

Signals.—Vessels should radio their ETA to the agent at least 72 hours in advance confirming 24 hours, 12 hours, and 4 hours prior to arrival. The agent call sign is Cayman Harbor. The operations control call sign is Cayman Energy.

Anchorage.—The best anchorage is taken in Scott Bay, in a depth of 16m, 0.5 mile NNE of West End Point. With a S wind, Stake Bay and the bight NE of Stake Bay Point also afford safe anchorage in depths over 9m. Should the wind shift, anchorage can be obtained off the S side of the island near West End Point, care being taken to select a clean spot for the anchor, as the bottom is foul.

A safe anchorage, for large vessels during NE winds, is reported in a position 0.5 mile WSW of West End Point.

A ship that is anchored off West End Point should take care not to obstruct the runway of the airstrip. Large vessels can also anchor 0.7 mile off North East Point.

Jamaica

6.16 Jamaica (18°10'N., 77°20'W.) is the third largest island of the Greater Antilles and is approximately 127 miles long, E to W, and about 46 miles wide at its greatest width. The terrain is largely mountainous with its greatest height at the E end of the island.

Offshore, the N shore of Jamaica is steep-to with no known sunken dangers greater than one mile seaward.

The S side of the island is comparatively steep-to for short distances at each extremity, and fronted by a broad, rather

shoal water, insular shelf.

Tides—Currents.—Jamaica lies in the track of the North Equatorial Current which sets between W and NW at rates of 0.5 to 1 knot. The flow of the current is complex and greatly affected by the winds. Dangerous sets in any direction, with rates up to 3 knots, can occur.

Pilotage.—Pilotage for all ports in Jamaica is provided from Kingston. Pilots should be ordered well in advance to allow for the necessary arrangements to be made.

Regulations.—The Jamaica Defense Force Coast Guard (JDC CG) is responsible for the coordination of Search and Rescue operations. A 24-hour watch is maintained on VHF 16 at Coast Guard Headquarters, located at Port Royal. The call sign is Coast Guard Radio Kingston (6YX). There are also six rescue sub-center locations at St. Anne, Discovery Bay, St. James, Montego Bay, St. Elizabeth, Black River, St. Thomas, Port Morant, Portland, Port Antonio, and Pedro, Pedro Cays.

Anchorage.—When anchoring off the N coast of Jamaica during the fall and winter, the possibility of a N gale should be kept in mind.

Jamaica—North Coast—Morant Point to Port Antonio

6.17 **Morant Point** (17°55'N., 76°11'W.), the E extremity of Jamaica, consists of a strip of low, swampy land that extends 2.5 miles E from a range of coastal hills. The point is well-defined from the N and S and may be identified from the E by the light that stands on the point.

The point is fringed with a reef which extends about 0.2 mile offshore. The light on the point is reported to be radar conspicuous at a distance of 12 miles.

Morant Point Light

Overfalls may usually be observed near the edge of the coastal bank E of Morant Point, and the tidal currents in the vicinity attain a rate of from 1 to 3 knots.

Norseman Bank, with a depth of 31m, lies 4.5 miles SSE of Morant Point. Dingle Bank, with a least depth of 36m, lies 5.8 miles SSW of Morant Point.

Holland Bay (Plantain Garden Bay) (17°57'N., 76°14'W.) lies 3 miles NW of Morant Point Light. A river flows into the head of the bay, which is not recommended as an anchorage. Booby South Point, its N entrance point, is about 12m high.

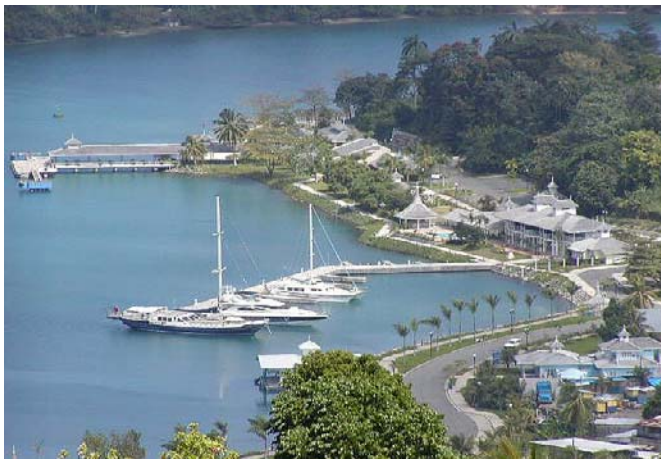
Manchioneal Harbour (18°02'N., 76°17'W.) lies about 9 miles NW of Morant Point. The harbor consists of a small community, fronting on a partially sheltered cove, having limited anchorage for small vessels, in 9 to 13m. Local knowledge is essential.

Boston Bay lies about 8.5 miles NW of Manchioneal Harbour and is foul.

Port Antonio (18°11'N., 76°27'W.)

World Port Index No. 10710

6.18 Port Antonio lies about 21 miles NW of Morant Point. The port consists of an irregular coastal bight divided into two small deep-water bays with deep and clear approaches. The port is divided into East Harbour and West Harbour by the Titchfield Peninsula and Navy Island.



Port Antonio

Depths—Limitations.—East Harbour is limited in deep water to the area just inside its entrance between Folly Point and Old Fort Point. Vessels up to 149m long, with a maximum draft of 7.9m, anchor as charted, in about 21m, good holding ground, ESE of Old Fort Point. This anchorage is open to "Northers" which send in a heavy sea. East Harbour does not have the available facilities as in West Harbour.

It is reported that E harbor has been closed for commercial use and is now a private marina.

West Harbour, the principal center of maritime activity for Port Antonio, is a small body of water entered through a narrow, comparatively deep water passage between Navy Island and the Titchfield Peninsula. The channel into the harbor is well marked by ranges. A vessel up to 168m long, with a maximum draft of 7.9m, can anchor here.

Ken Wright T-headed pier on the W side of the Titchfield Peninsula is used for cruise ships and can accommodate vessels up to 167m long and drafts up to 8.8m. A minimum depth of 10m has been reported in West Harbour in the vicinity of the cruise ship pier. It has been reported that in 2013 the Ken Wright Pier is undergoing construction current lengths and depth may best be represented by the chart.

Boundbrook Wharf is located 0.2 mile WNW of the head of West Harbour and can accommodate vessels up to 167m, with a depth of 8.8m, alongside. This wharf is normally used by banana vessels. A mooring buoy is situated E of the SE corner of the wharf and is used by cruise ships at anchor.

Atlas Wharf, with depths of 3 to 4m alongside, is located 0.2 mile SE of Boundbrook Wharf.

Aspect.—Mitchell's House, a large concrete residence in ruins, situated 0.2 mile SE of the light on Folly Point, is conspicuous from the NE. The school, on the NE extremity of the Titchfield Peninsula, is very prominent from seaward.

The dome of the court house, situated about 0.3 mile SSW of the school; the spire of a church, situated at Sommers Town; and a hotel, 0.5 mile SSW of the court house, are all conspicuous.

Folly Point Light

Pilotage.—Pilotage is compulsory for merchant vessels, and should be ordered through the vessel's agent at least 24 hours prior to arrival. Pilots will board vessels about 1 mile N of Folly Point and can be contacted on VHF channel 16.

Anchorage.—Anchorage berths are assigned by the harbormaster. Besides the berths already mentioned in the East Harbour and West Harbour, secure anchorage in all winds may be obtained by small vessels in the E part of West Harbour, about 0.2 mile NW of the courthouse dome.

The anchorage space is limited; a stern anchor should be laid out to prevent swinging. Anchorage is prohibited in the W part of West Harbour, W of a line drawn 180° through the landing place on the S point of Navy Island and the west edge of Atlas Wharf.

Caution.—The front beacon of the range marking East Harbour was reported to be missing and the rear beacon was reported to be hard to see. The entire range has also been reported (2001) to be missing. A submarine cable originating in East Harbour, as shown on the chart, must be avoided during anchoring. A stranded wreck, best seen on the chart is found close E of the mooring buoy in West Harbour.

Jamaica—North Coast—Port Antonio to Ocho Rios

6.19 Between Port Antonio and Ocho Rios, the coast continues mountainous until in the vicinity of Annotto Bay, where it becomes less rugged and elevated and more gentle in its upward slope inland.

Several deep ravines cut through the more steeply sloped portions and traverse small coastal plains which, together with adjacent areas, support a number of plantations.

Hope Bay (18°13'N., 76°34'W.), about 7 miles W of Port Antonio, is a small coastal indentation which, clear in its approaches but somewhat encumbered within its inner reaches, is rather difficult to make out from sea, though a white railroad bridge is conspicuous where it spans the Swift River, W of the head of the bay. Anchorage is available to small vessels with local knowledge.

Buff Bay (18°14'N., 76°39'W.), a bight immediately W of Hope Bay, is remarkable for the white cliffs that rise along its shore. The head and W parts of the bay are foul, the bottom being composed of rocky pinnacles, on which the sea breaks 0.2 mile offshore, in depths of 9 or 11m.

There is a wharf in Orange Bay, the E side of the bay. A reef that lies E of the wharf is marked by an iron stake which is surmounted by a drum.

Vessels with local knowledge may obtain anchorage protected from NE winds, but usually exposed to swells, close to the above reef. Anchorage off the town is only suitable for small craft.

6.20 Annotto Bay (18°17'N., 76°47'W.) lies about 7 miles WNW of Buff Bay, and is entered between Free Point and a position on the coast 2.7 miles NW. The town is situated at the head of the bay and is visible from seaward. The church and a metal-roofed store, both in the town, are conspicuous from offshore.

The bay is a largely deep-water coastal indentation that shoals abruptly along the greater part of its shoreline, and there it leaves a narrow bank with a scattering of sunken dangers, particularly along the side at Schoolmaster Shoal.

The anchorage in Annotto Bay, which is protected somewhat by Schoolmaster Shoal, is open to "Northers" and is without sufficient swinging room.

The best anchoring position is with the church bearing about 129°, distant about 0.3 mile. Anchorage may be obtained N or S of this position. The holding ground farther SW is good, but the depths shoal very rapidly.

6.21 Port Maria Bay (18°23'N., 76°53'W.), about 9 miles NW of Annotto Bay, is a small rapidly shoaling coastal indentation.

The port is divided into two parts by Cabarita Island and the sunken flat that joins the island to the head of the bay. A river flows into the part of the head of the bay.

Moderate-sized vessels up to 107m long can anchor, in depths of 9 to 11m, about 0.2 mile W of Cabarita Island.

Galina Point Light

There is a pier for small craft in the port. Local knowledge is essential. A light is shown from Galina Point, 2 miles NNW of the port.

6.22 **Oracabessa Bay** (18°24'N., 76°57'W.) lies about 4 miles WNW of Port Maria Bay. The bay is closely fronted by drying reefs which lie E and W of an unencumbered anchorage area extending offshore from the entrance to the Jack River. The bay is largely sheltered from prevailing E and NE winds, but is open to "Northers" which in winter can frequently make the anchorage uncomfortable.

There is anchorage, in depths of 14 to 37m, as best seen on the chart. Vessels also anchor in a depth of 37m, 0.1 to 0.2 mile off the reef extending from the W shore, but this anchorage is more exposed.

6.23 Between Oracabessa Bay and Rio Nuevo Bay, 3.5 miles W, the coast consists of cliffs from 9 to 12m high.

Anchorage can be obtained in Rio Nuevo Bay by small vessels with local knowledge, but the space is very limited, the shore is very steep-to, and the anchorage is quite unprotected.

The coast between Rio Nuevo Bay and Frankfort Point, 2 miles WNW, rises in bluffs from 18 to 30m high.

The coast between **Frankfort Point** (18°26'N., 77°04'W.) and The Point, the E entrance point of Ocho Rios Bay 3.7 miles WSW, consists of rocky stretches alternating with sandy bays.

A conspicuous silver-colored tower was reported to stand about 1.5 miles SW of Frankfort Point.

Ocho Rios (18°25'N., 77°07'W.)

World Port Index No. 10660

6.24 Ocho Rios, on the E shore of Ocho Rios Bay, is a small community with extensive tourist facilities. The principal maritime activity is centered on the bauxite ore-loading facilities owned by the Reynolds Mining Company. It is the most easily discernible landmark in the harbor.

Depths—Limitations.—Reynolds Jamaica Mines owns and operates a pier, 270m long, with an alongside depth of 12.2m, which is used chiefly for the export of bauxite ore and bulk sugar. The well-illuminated bauxite pier is located in the SW corner of the bay. A warping buoy is moored nearby where it is used to brest vessels a short distance off the berth to avoid the effects of a swell that can sweep into the bay.

Cruise Ship Berth No. 1 accommodates vessels up to 222m long, with a draft of 9.7m. It has been reported that the use of an anchor underfoot may be necessary at this berth to remain pierside in 0.6 to 1.5m swells. Cruise Ship Berth No. 2 accommodates vessels up to 320m long, with a draft of 9.7m.

Aspect.—The bay, about 9.5 miles W of Oracabessa Bay, is a small deep-water bay, having its NE approach encumbered by shoal water and a plainly visible sunken reef over which the sea always breaks. A single green buoy marks the W edge of the sunken reef. The approach from the NNW is deep and clear of all known dangers.

The approach channel is marked by a red buoy fitted with a radar reflector and showing quick flashing red by night. The range markers facing NW are distinguishable as white pole-mounted triangles. The front light is on a building on the bauxite wharf, and the rear light is on the hillside beyond the pier. The range lights are exhibited only when a vessel is expected. The daymarks are reported difficult to identify during daylight.

Lights at the loading facility and several multi-story structures elsewhere are conspicuous landmarks from sea.

The large ore-handling facility is often used as an aid. It is the best approach to both the Reynolds Pier and the cruise ship pier.

Other distinguishing features are a large gray tank SE of the Reynolds Pier, visible at 8 miles; four large high-rise apartments near the W jetty; and two hotels near the E jetty. Radar navigation is difficult due to the smooth coastline and few distinguishable landmarks.

During low sea states, the reef and sea buoy can be easily detected.

Pilotage.—Pilotage is compulsory for merchant vessels and provided from Kingston. Pilots board N of the green lighted buoy in position 18°26'02"N, 77°07'08"W. Vessels must send their ETA 36 hours prior to arrival. it has been reported that pilots are not always available.

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

1. VHF: VHF channel 11
2. Telephone: 1-876-922-5749
3. Facsimile: 1-876-922-5764

The port can be contacted, as follows:

1. VHF: VHF channel 16
2. Telephone: 1-876-922-0290
3. Facsimile: 1-876-924-9437
4. E-mail: pa@portjam.com

Anchorage.—Vessels anchor in depths of 9 to 18m, mud and sand, about 0.1 mile from the front range light, bearing 210°. Small vessels can anchor closer in, depending on their draft.

Caution.—The range to the approach of the ore facility is

Ocho Rios Harbor

reported to be difficult to identify during daylight hours.

Jamaica—North Coast—Ocho Rios to Montego Bay

6.25 Saint Anns Bay (18°26'N., 77°12'W.) lies 5.5 miles WNW of Ocho Rios. The harbor consists of a small basin protected by a coral reef, and is entered through a narrow passage, with depths of more than 18m, that lies between the reefs that extend 0.6 mile W from Drax Hall Point on the E, and the E end of Lee Reef, 0.1 mile farther W.

Pilotage.—Pilotage is compulsory for merchant vessels with prior notification arranged through authorities in Kingston.

Anchorage.—Vessels make their approach from the N. Two lighted buoys mark the entrance to the anchorages. There are three anchorages which can best be seen on the chart. Vessels up to 122m long, with a maximum draft of 6.9m, can be accommodated.

The anchorages are somewhat sheltered from "Northers" by Lee Reef, but after several days of sea breezes, a current is created which, setting E, can swing an improperly-moored vessel into a position where, lying broadside to a prevailing sea, it can roll uncomfortably.

6.26 Discovery Bay (18°28'N., 77°24'W.) lies about 12 miles W of Saint Anns Bay. The entrance is obstructed by a bar, with depths of less than 5m, through which a channel has been dredged to a width of 122m, and a depth of 12.2m.

Within the bay, the shores are mainly steep-to; there are general depths of more than 36m, but a spit, with depths of less than 6m, extends approximately 0.3 mile SSW from Fort Point.

Depths—Limitations.—Port Rhodes Pier, located in the SW portion of the bay, is a concrete wharf 205m long, 18m wide, and has a depth of 12.2m alongside. The largest vessel permitted to use the pier is 213m long, with a draft of 11.4m. Vessels dock day or night.

Aspect.—A conspicuous dome stands at an elevation of 34m on the SW shore. Range lights are established at the head of the bay. The rear light is exhibited from a framework tower, SSW of the head of the bauxite pier; the front light is exhibited from a post on the head of the bauxite pier. The lights in line, bearing 194°, lead on the centerline of the dredged channel into the bay.

Pilotage.—Pilotage is compulsory. Vessels should send their ETA and request for pilotage to their agents through Kingston at least 48 hours in advance, confirming 24 hours and 12 hours prior to arrival. Contact should be established with the pilot vessel by VHF when within range. The boarding ground is located 1.5 miles NE of the channel entrance.

Anchorage.—The sea bed within Discovery Bay to a depth of 60m is the research area of the Discovery Bay Marine Authority. Anchorage is prohibited anywhere in the port due to the conservation of coral reefs. Vessels waiting to berth are required to remain underway within 2.5 miles of the entrance.

6.27 Rio Bueno (18°29'N., 77°28'W.) (World Port Index No. 10630) lies 2.5 miles W of Discovery Bay.

Depths—Limitations.—The main jetty, operated by Caribbean Milling, extends 137m NNE from the W entrance point of the river; the largest vessel permitted to use the pier is 61m long, with a draft of 7m. Vessels secure to two dolphins NW of the jetty head. There are several smaller piers on the W side of the Cove.

Aspect.—The harbor is a small deep-water cove and may be identified by the church and houses on its W side, and by a large tank on the W entrance point of the river which empties into the head of the cove. A beacon is reported to stand 137m E of the mouth of the river. It is reported (2008) that works are in progress about 100m ESE of the main pier.

Pilotage.—Pilotage is compulsory. The pilot boards near 18°28'45.6", 77°27'18.0" and can be contacted on VHF channels 9 and 11.

Anchorage.—Anchorage may be obtained, in a depth of about 28m, either on the SE side of the cove or on the edge of

the bank on its W side, but it is unprotected from "Northers." The depths change rapidly, and local knowledge is essential.

A vessel should moor, securing her stern to a black mooring buoy, at the head of the cove. The largest vessel permitted to use the anchorage was 122m long, with a draft of 7.9m.

6.28 **Falmouth Harbour** (18°29'N., 77°39'W.) (World Port Index No. 10620) lies about 12 miles W of Rio Bueno Harbour. The harbor is a small basin surrounded by reefs and shoals, its deep-water portion being a break in the main reef.

Tides—Currents.—When the sea breezes blow continuously for days, a current sometimes sets windward through the an chorage, at a rate varying with the force of the wind; the strength of this current frequently overcomes that of the wind, so that vessels often ride entirely by their stern moorings. Prevailing wind is NE, but strong N to NW winds in the winter months send a heavy sea into the bay.

Depths—Limitations.—The harbor is entered through a channel between two spits, dredged to 12.6m with a least width of 200m, that extends 0.1 mile seaward from the main reef.

A cruise terminal with associated leading lights and dredged ship channel, marked by buoys, has been established in the harbor. A new triangular pier has been established and consists of a N and S berth. The depths alongside are 10.3m at the S berth and 11.3m at the N berth; vessels up to 360m in length and 9.2m draft can be accommodated. There are two mooring buoys at the N end of the pier.

Falmouth Harbor—New cruise terminal (2010)

Aspect.—A lighted set of range lights is comprised of a lighted beacon situated on Central Wharf, in alignment with a beacon 0.1 mile SW, bearing 221.3°.

A number of navigational aids mark the dangers in Falmouth Harbour and can be best seen on the chart of the area.

Pilotage.—Pilotage is compulsory and arranged through the harbormaster at Kingston. The pilots board 1.2 miles NE of the new pier.Tugs are available, with sufficient notice, from Montego Bay.

Notice of ETA should be sent 96, 48 and 24 hours in advance. Pilots require 24 hours notice. Port radio is contacted via the pilots on VHF channels 16 and 11.

Anchorage.—Anchorage can be taken in Montego Bay. There is no suitable anchorage in or around Falmouth Bay.

6.29 The coast between **Palmetto Point** (18°30'N., 77°41'W.) on the W side of Falmouth Harbour, and Dunns Hole, 11.2 miles W, then to Montego Bay Point, 5 miles WSW, and Sandy Point, the N entrance point of Montego Bay, 1 mile farther SSW, is mostly low, highly cultivated, and backed by hills of moderate elevation.

This stretch of coast is fringed with reefs that extend 0.2 mile offshore in most places, but off Long Bay, 5 miles W of Palmetto Point, depths of 5.5m extend 0.5 mile offshore.

Rose Hall Light is exhibited from a metal framework tower 8.5 miles W of Palmetto Point.

A conspicuous hotel was reported to stand 0.5 mile E of Rose Hall Light.

Montego Bay (18°28'N., 77°56'W.)

World Port Index No. 10610

6.30 Montego Bay is the principal port on the N side of Jamaica and the second largest town on the island. It is a rapidly-developing resort and tourist center. The port has a considerable fruit export trade, principally bananas.

Depths—Limitations.—A channel, 122m wide, leading to a turning basin measuring 0.3 mile from N to S and 0.3 mile from E to W, has been dredged to a depth of 10.1m. Extensive shoaling on the S face was reported.

An extension in the SE corner of the turning basin has a depth of 7.9m. It was reported that there was less water than charted in the SE basin.

Cruise, ro-ro, and petroleum vessels can be handled. Vessel limitations at each berth are, as follows:

1. Berth No. 2—A maximum length of 182m and a maximum draft 0f 9.1m.
2. Berth No. 3—A maximum length of 179m and a maximum draft of 6.2m.
3. Berth No. 4—A maximum length of 177m and a maximum draft of 5.9m.
4. Berth Nos. 5 and 6—A depth of 426m and a maximum draft of 10.1m.
5. Tanker berth for LPG—Has a pier length of 184m and an alongside depth 9.1m.

Aspect.—A conspicuous metal framework cross, outlined with red lights at night, stands on the crest of a hill 4 miles SE of the town church. An aero light is shown from **Montego Bay Airport** control tower (18°30'N., 77°55'W.), about 0.5 mile ESE of Montego Bay Point. A large white square tower with colored panels stands about 0.7 mile S of Montego Bay Point. Three radio masts stand close to the coast NE of the point. The middle tower is equipped with an aero radiobeacon.

There are numerous high buildings standing on the shore which are conspicuous from sea. Casa Montego Hotel, with a white square tower with colored panels, 35m high, situated about 0.8 mile S of Montego Bay Point, is prominent, especially when approaching from the W.

Red fixed obstruction lights are exhibited from each corner of the tower, which is also normally floodlit at night.

The Anglican Church, which has a white square tower with a flagstaff, 27m high, stands in the center of town of Montego Bay, 1 mile SSE of Casa Montego Hotel. It is conspicuous.

A cross on a conspicuous obelisk, 16m high, floodlit at

night, stands on the E shoulder of a hill, about 0.3 mile NNW of the Anglican Church. There is a fort close NW.

A conspicuous hotel, marked by a red obstruction light, stands on the peninsula W of Montego Port. A number of oil tanks stand on the coast E of Montego Port.

Range lights are exhibited at the head of the bay. The rear mark is situated about 0.3 mile SSE of the Anglican church; the front mark is situated about 0.2 mile SW of the same church. This range is in line bearing 118.6°. Range lights also stand near the SE corner of the turning basin and mark the channel into the port. This range is in line bearing 200.7°. Both ranges are reported (1997) difficult to see.

Lighted buoys and beacons mark the channel limits into the port and can best be seen on the chart.

Montego Bay

Pilotage.—Pilotage is compulsory for merchant vessels. Pilots board vessels 2 miles WNW of the front leading light at the head of the bay, but prior arrangements are necessary. Vessels should request a pilot 72 hours in advance and confirm the ETA 48 hours and 24 hours prior to arrival. Pilotage is undertaken during daylight only.

The pilots communicate on VHF channels 11, 12, and 16. The pilot boat is available to assist with mooring.

Anchorage.—Anchorage is available, in 11.9m, fair holding ground of mud, at the intersection of the entrance range with the range established by charted stopping lights on the NE side of the bay near Breakwater Rock.

Beware of the foul patch contained within the anchorage area. Deep-draft vessels, with prior approval of the Kingston Harbourmaster, may anchor in the berth designated Anchorage A, as shown on the chart.

Whenever anchoring in the bay, a vessel should pay out good scope of chain to prevent dragging into deeper water; the slope of the bank is generally steep. Small craft and yachts can obtain good anchorage off the Yacht Club on the W side of the bay.

The anchorage is well-sheltered from the usual NE to SE winds, but rapidly becomes untenable should the wind shift to the N or NW; these latter winds are quite strong and send in a considerable swell.

Winds of force 7 can arise with little or no warning. Under these conditions, vessels should drop a second anchor or consider standing out to sea.

Caution.—It was reported that a major expansion is underway enabling the port to receive 6 vessels simultaneously as well as the "Ultra Voyager" class cruise vessels.

Jamaica—North Coast—Montego Bay to South Negril Point

6.31 Lucea (18°27'N., 78°10'W.) (World Port Index No. 10600), located on a small bay, lies 12 miles W of Montego Bay. Lucea Harbour is entered between Lucea Point and Antonio Point, about 0.5 mile SW.

Antonio Point may be identified by Fort Charlotte on its E extremity. A large school building and a hospital lie close W of the fort.

Depths—Limitations.—The harbor has facilities for the lightering of bananas to vessels at anchor, and for the loading of molasses aboard vessels berthed at a T-head jetty (Lucea Marine Terminal), which lies on the E side of the bay. The largest vessel permitted to use the wharf is 167m long, with a maximum draft of 9.1m. Two prominent tanks, 26m high, stand close E of the root of the jetty at Cane Point.

The sea breaks over the W side of the bay entrance, while the shelf on the E side dries in places before joining a coastal bank that continues E some 3 miles to Mosquito Cove. The harbor area of the bay contains fairly deep water.

Pilotage.—Pilotage is compulsory for Lucea and is available 24 hours; no less than 24 hours notice is required. The pilot boards 0.5 mile NW of Lucea Point.

Anchorage.—A vessel can obtain anchorage, in a depth of 9m, with the W entrance point of the bay bearing 339°, and the clock tower charted on the W side of the bay bearing 260°. Anchoring farther E of this position is not recommended since vessels riding too far outside the shelter of the W entrance point of the bay become more exposed to "Northers," which at times send in heavy seas.

Vessels are required to anchor S of a line joining Antonio Point and Cave Point. The largest vessel that has used the anchorage was 137m long, with a draft of 7.3m.

6.32 Mosquito Cove (18°28'N., 78°08'W.), a narrow but well-sheltered inlet, is entered between reefs that closely fringe its entrance points.

The anchorage is only suitable for vessels not more than 90m long and of not more than a 5.5m draft. Local knowledge is desirable.

The coastline between Lucea Harbour and the W extremity of Jamaica, about 16 miles SW, is indented and for the greater part of its length, fronted by foul ground which limits access to smaller vessels with local knowledge. Inland, the terrain is largely hilly before giving way to the comparatively extensive low-lying marshes of The Great Morass area.

Green Island Harbour (18°24'N., 78°16'W.), about 7.5 miles SW of Lucea Harbour, is a small shoal water cove fronted by a reef outside of which moderate-sized vessels anchor in 18m, with the aid of several range beacons.

The anchorage is opened to "Northers" which can send in a heavy sea. Orange Bay, a much encumbered cove, lies close SW of Green Island Harbour, and provides an anchorage for small vessels with local knowledge.

6.33 Negril Harbour (18°21'N., 78°22'W.) is entered between North Negril Point and Booby Cay, 1 mile S. The harbor

is seldom visited, even by small craft, and is not recommended as an anchorage. Long Bay, close S of Negril Harbour, is entered between Booby Cay and South Negril Point, 4.5 miles SSW.

The N part of the bay is encumbered with a shallow flat on which are a number of rocky heads.

Anchorage may be obtained in Long Bay, in depths of from 7.3 to 9m, rock and sand, 1.2 miles S of the drying portion of Sandy Reef, with South Negril Point bearing 202°.

A light is shown from a tower, 27m high, standing 1 mile S of the W extremity of **South Negril Point** (18°16'N., 78°22'W.), A conspicuous radio mast, 40m high, stands about 2 miles ENE of the light tower.

South Negril Point Light

Jamaica—South Coast—Morant Point to Kingston

6.34 Morant Point (17°55'N., 76°11'W.) forms the E extremity of Jamaica and was previously described in paragraph 6.17.

South-East Point (17°54'N., 76°11'W.) is located 1.2 miles SSW of Morant Point Light. A conspicuous stranded wreck lies close S of South-East Point. The coast between Morant Point and South Negril Point, about 127 miles WNW, is irregular and indented by numerous broad bays and open bights.

Offshore, the coast is closely fronted by the 200m curve for about 30 miles from each extremity of the island. In the middle part of the island, between Kingston and Black River Bay, the coast is fronted by a broad, largely shoal water insular shelf, which at the 200m curve drops away rapidly to considerable depths.

During weather with poor visibility, soundings are a useful guide to vessels approaching the shelf.

6.35 Port Morant (17°52'N., 76°20'W.) entered about 8.5 miles WSW of Morant Point, is a moderate-sized fairly deep inlet. The entrance to the harbor is narrowed by above and below-water dangers. The inner part of the inlet is encumbered by a scattering of shoal water patches and spits. The inlet can be readily identified from sea by a remarkable red cliff at its head. On the E side, the ends of the warehouses on Bowden Wharf show up prominently from the SSW. The port was reported closed to commercial navigation in 1991. Navigation aids are not being maintained.

Range lights, in line bearing 005°, are shown from the head of the bay.

Pilotage.—Pilotage is compulsory for merchant vessels. Vessels make their approach from the S using the lighted entrance range. Vessels are cautioned that buoys in Port Morant are not always reliable and that a heavy swell usually sets into the inlet. It is reported that Port Morant is no longer used for commercial shipping and the aids to navigation are not maintained.

Anchorage.—Anchorage for vessels up to 137m long, with a maximum draft of 6.9m, may be obtained, in a depth of 9m with the front range light bearing 012°, distant about 0.5 mile and also in a depth of 9m, with the same range light bearing 359°, distant about 0.4 mile. There is a wharf in the port with a depth of 5.5m alongside.

6.36 Morant Bay (17°53'N., 76°25'W.) 4.5 miles W of Port Morant, is a broad coastal indentation which is encumbered by shoal water patches, sunken rocks, and reefs over which the sea breaks heavily in places.

Several buildings and a water tower standing near the shore are conspicuous from sea.

Galatea Rock, with a least depth of 5m, lies 1.5 miles WSW of the water tower on the E side of the bay. There are depths of 5m and less, 0.3 mile E of the rock, and a reef lies 0.4 mile NE of it.

Pilotage.—Pilotage is compulsory.

Anchorage.—Anchorage may be obtained under the lee of the reef, abreast the town, in depths of 9 to 11m. Small craft may obtain anchorage within the reefs farther E. Local knowledge is essential.

6.37 White Horses (17°52'N., 76°28'W.) are prominent white cliffs of moderate height which stand about 4.5 miles W of Morant Bay. A conspicuous dish aerial stands 1.5 miles W of White Horses. Vessels are cautioned not to anchor in the area S of the cliffs in the area best seen on the chart, owing to the existence of submarine cables. Yallahs Hill, a conspicuous high peak, stands about 2 miles NW of White Horses.

Lamottes Bank is a shoal water patch of stones with a least depth of 7.3m and lies about 2 miles S of White Horses. Vessels should pass S of the bank.

Salt Pond Bay (17°52'N., 76°33'W.), immediately W of Yallahs Point, affords shelter for small craft from the trade winds, which sometimes blows strongly for three or four days. Vessels with local knowledge may anchor in Yallahs Bay, W of Salt Pond Bay. The best anchorage is S of the central part of the bay, 0.3 mile offshore, in a depth of 18.3m. With S winds, a heavy sea rolls into the bay; vessels must be prepared to leave should the winds show signs of shifting to the S. A conspicu-

ous water tower stands 3 miles WNW of Yallahs Point.

Kingston (Port Bustamante) (17°57'N., 76°47'W.)

World Port Index No. 10770

6.38 Kingston Harbour is a well-sheltered spacious bay which is considered to be one of the finest natural harbors in the world. Depths within the harbor area range from 13 to 18m. Depths at the berths range from 8.4 to 11.1m. The harbor lies to a considerable extent landlocked between the insular mainland and the Palisadoes, a long narrow low-lying sandy spit or peninsula that closes the bay seaward.

The bay is deep throughout much of its E part, where anchorages are available, but considerably shallower in its middle and W parts. Major deep-water alongside berthing facilities front the mainland. Inland, the terrain is generally flat, and continuing as the rather extensive Liguanea Plain, rises to interior high hills and mountains; the latter is particularly distinctive to the E and NE.

Winds—Weather.—Winds are most common out of the ESE and usually increase in force in the early forenoon.

Tides—Currents.—Ocean currents generally set to the W. Tidal action in the harbor entrance is slight with tidal current rather irregular.

A current commonly flows out of the harbor and sets seaward through South Channel with a velocity of 0.2 knot as far as Drunkenmans Cay, where it turns to the W, and at times increases to 2.5 knots. Inside Kingston Harbour, tidal currents set athwart Ship Channel such that caution is recommended in transit, particularly during the ebb.

Depths—Limitations.—Kingston Harbour approach from the SE is deep and clear. The approach from the S and SW is encumbered by the California Bank and subsequently by a wide scattering of above and below-water dangers that front much of the seaward side of the Palisadoes, and extending completely across the harbor entrance, continue well to the SW.

The above-water dangers are commonly reef-fringed and quite low-lying and consists of small patches of sand and coral grown over with scrub vegetation.

Two passages for ocean vessels lead through these encumbering dangers. East Channel, the better and deeper passage, leads close S of the Palisadoes and more or less directly to the harbor entrance in a least depth of 12.2m.

South Channel leads approximately N from the open sea to the entrance in depths not recommended for vessels drawing more than 5.5m. Ship Channel, the inner continuation of these two channels, has a maintained depth of 11.9m,and a width of 244m at its narrowest point. The recommended maximum draft for entering the port is 12m.

In the immediate vicinity of the West container terminal, there is a clear turning area is 0.2 mile; elsewhere, there is adequate swinging room for the largest vessel. For Berthing information refer to the **Kingston—Berth Information** table.

Kingston—Berth Information

Berth	Berth Length	Depths Alongside	Maximum Vessel		Remarks
			Draft	LOA	
Port Bustamante					
No. 1	152m	—	8.9m	152m	Containers and ro-ro.
No. 2	182m	—	9.5m	152m	Containers and ro-ro.
No. 3	182m	—	9.7m	152m	Containers and ro-ro.
No. 4	182m	—	9.6m	152m	Containers and ro-ro.
No. 5	182m	—	9.6m	152m	Containers and ro-ro.
No. 6	182m	—	9.5m	152m	Containers and ro-ro.
No. 7	182m	—	9.7m	152m	Containers and ro-ro.
No. 8	182m	13.0m	12.7m	152m	Containers and ro-ro.
No. 9	182m	13.0m	12.7m	152m	Containers and ro-ro.
Kingston North Container Terminal					
No.10	267m	13.0m	—	—	Containers.
No. 11	267m	13.0m	—	—	Containers.
Kingston South Container Terminal					
No. 1	325m	13.0m	—	—	Containers.
No.2	325m	13.0m	—	—	Containers.
No.3	325m	13.0m	—	—	Containers.
No. 4	325m	13.0m	—	—	Containers.

Kingston—Berth Information					
Berth	Berth Length	Depths Alongside	Maximum Vessel		Remarks
			Draft	LOA	
Kingston West Container Terminal					
No.5	237m	11.8m	—	—	Containers.
No. 6	238m	11.8m	—	—	Containers.
Other Berths					
Jamaica Gypsum	172m	8.5m	—	—	Private.
Carib Cement	152m	8.4m	—	—	Private.
Carib Cement Coal	196m	10.3m	—	—	Private.
Esso Dry Cargo	113m	5.0m	—	—	Private.
Wherry Wharf	107m	6.8m	—	91m	Private.
Rapid Sheffield	107m	6.8m	—	91m	Private.
Jamaica Livestock	107m	5.9m	—	—	Private.
Tanker Berths					
Texaco Jetty	54m	8.9m	7.9m	167m	Chemicals
Shell	222m	10.1m	9.1m	183m	Chemicals. Maximum beam of 18.2m.
Esso Platform	82m	—	9.7m	167m	Chemicals.
Petrojam (Offshore Jetty)	62m	12.0m	11.3m	227m	Petroleum products.

Gordon Cay (South Container Terminal)

Gordon Cay (South Container Terminal), has turning basin, with a diameter of 600m, and lies at the E tip of Gordon Cay.

Newport East Quay is situated close E of the above oil platforms. The approach channel, 76m wide, is entered close SE of the Esso Bunkering Pier.

King Street and Orange Street Cruise Ship Piers are located on the waterfront S of Parish Church. Each can accept a vessel up to 238m in length, with a draft of 9.1m. Shell Rockfort Pier is a T-head berth, accessible by vessels up to 183m long, with a maximum draft of 9.1m. It has been reported (2013) that the cruise ship terminal is under construction.

The Caribbean Cement Company Pier, 0.1 mile SW of the conspicuous chimney Texaco Eastern Pier lies 0.1 mile SSE of the Cement Works Pier.

Jamaica Gypsum Pier is located about 0.4 mile SSE of the Texaco Piers. The pier, which has a conspicuous unloader situated on it.

Aspect.—Catherines Peak (18°04'N., 76°42'W.) lies about 8 miles N of the E extremity of Kingston Harbour. The lights from the town of Newcastle, close W of Catherines Peak, are visible for a considerable distance. Three chimneys standing near the NE side of the harbor are prominent. A number of other landmarks can best be seen on the chart.

A pair of range lights leads through East Channel. Lazaretto Cairn, the rear range structure, is a very large white stone structure; however, the front range, located close N of Rackhams Cay, is a black structure and has been reported (1994) to be difficult to see. The channel is right of the range in the vicinity of Rackhams Cay when inbound.

Pilotage.—Pilotage is compulsory for merchant vessels.

The pilot boarding area is about 2.4 miles SE of Plumb Point. In bad weather, it is closer inshore as directed by the pilot.

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

1. VHF: VHF channel 11
2. Telephone: 1-876-922-5749
3. Facsimile: 1-876-922-5764

The port can be contacted, as follows:

1. VHF: VHF channel 11

2. Telephone: 1-876-922-0290
3. Facsimile: 1-876-924-9437
4. E-mail: pa@portjam.com

Regulations.—Vessels should notify the port of their ETA 72 hours in advance, confirming or amending it 48 hours and 24 hours before arrival.

A vessel entering or leaving the harbor should not attempt to pass another vessel:

1. Between a line joining Rackhams Cay and Gun Cay, and a line joining West Middle Rock Lighted Buoy and Harbor Shoal Beacon
2. Between a line joining Two Sisters Lighted Beacon and Burial Ground Lighted Beacon, and a line joining Middle Ground Lighted Beacon and Esso Platform No. 7 Lighted Beacon.

All vessels are required to observe carefully the movements of other vessels to avoid meeting in the above passages.

When two vessels are approaching the above passages from opposite directions, the vessel entering the harbor has the right of way. The vessel leaving the harbor shall keep clear until the other vessel has passed.

An outbound vessel shall not pass Middle Ground Lighted Beacon when an inbound vessel is observed to be between Harbor Shoal Lighted Beacon and Middle Ground Lighted Beacon.

A vessel shall give warning of her approach to Port Royal Point by sounding one prolonged blast when 1 mile from the point. The signal shall be answered with one prolonged blast by a vessel approaching the point from the opposite direction.

Overtaking is prohibited in East Channel and Ship Channel, between Lime Cay and Hunts Bay Lighted Beacon.

Quarantine and customs procedures require unexempted vessels to proceed no farther into Kingston Harbour than the harbor entrance, where they anchor in position close W of Chevannes Lighted Beacon and there await inspection. Vessels with free pratique hoist the M flag of the International Code of Signals.

A vessel should not exceed 10 knots when within the harbor limits.

The use of rat guards on all securing hawsers is required by law, and vessels must haul off at least 2.5m from the wharves at night.

Anchorage.—There are five special anchor berths in the E section of the harbor. The berths are marked from A to E and are clearly shown on the chart. These berths are allocated only by the Harbormaster.

All five berths are available to vessels with maximum drafts of 10.3m, however, Berth A, Berth B, and Berth C are restricted to vessels 320m in length or less.

Vessels anchoring off Port Royal, should on arrival do so W of **Chevannes Beacon** (17°56.5'N., 76°51'W.). The area shows charted depths of 14.0m to 16.0m over a bottom shown as coral, shells and soft mud, bottom quality not stated.

Vessels using this anchorage are limited to a maximum length of 305m and a maximum draft of 13.0m.

Anchorage is prohibited within an area which extends for 0.1 mile on either side of a submarine cable which crosses the harbor from Newport East Quay to Port Royal.

Vessels are cautioned not to anchor in the vicinity of the pipelines leading to the oil berths between Newport East and Newport West.

Anchoring in Ship Channel, or within 30m of its boundaries, is prohibited.

No vessel or boat may enter the area within a 0.3 mile radius of the W end of the runway of Norman Manley Airport.

Caution.—A vessel with a draft of 6.5m reported grounding in the vicinity of Beacon No. 6.

Jamaica—South Coast—Portland Bight

6.39 Portland Bight (17°50'N., 77°06'W.) is entered between Polink Point and the E extremity of the land under Portland Ridge, 12 miles SW. There are two channels which lead through the entrance. East Channel, with a least depth of 11.3m, passes NE of Bare Bush Cay, and Main Channel, with a least depth of 12.5m, passes SW of Bare Bush Cay.

Within the bay, a shoal water coastal bank fronts the shore throughout, with the exception of Rocky Point, and leaves a well-defined comparatively deep central portion that is rather unencumbered.

Main Channel is entered 3 miles SSW of Bare Bush Cay Light. The range lights for Main Channel stand on **Pigeon Island** (17°48'N., 77°05'W.). In line the range lights bear 343.5°. The range lights on Pigeon Island were reported to be of very low intensity and unreliable.

East Channel is marked by range lights in line bearing 294.75°. The front light in this range is common to the range for the Main Channel. The channel is left of the range when inbound.

Caution.—Mariners are cautioned that a considerable number of sailing boats may be encountered, particularly at night when fishermen from Old Harbor Bay proceed to sea with a land breeze and return with the sea breeze beginning in the early forenoon.

A 10.4m shoal was reported (2004) to lie 2.8 miles SE of Big Pelican Island, about 1 mile N of the 294.75° range line.

6.40 Port Esquivel (Longs Wharf) (17°53'N., 77°08'W.) (World Port Index No. 10772) lies on the NW side of Portland Bight.

Depths—Limitations.—The maximum permissible length to enter the port is 198m with a draft of 11m. The entrance to the channel is marked by lighted buoys moored 0.5 mile to seaward of the reefs, which are awash at LW. The channel is marked by lighted buoys and beacons.

A concrete pier, its W side 213m long and its E side 198m long, projects into a turning basin. Vessels up to 198m in length with a draft of 11m can be accommodated on each side.

A cargo pier, 76m long, can accommodate a vessel 67m long with a draft of 4.9m.

Rocky Point lies about 4.5 miles S of Port Esquivel, and is the site of a bauxite loading facility. Vessels load from a T-headed pier, 192m long which has a least depth of 10.7m alongside. A loading chute stands about midway along the pier head, so that in loading, vessels must shift within the berth so as to bring their hatches into proper position under the chute opening. Tugs are not available, but a launch is on call for the running of lines ashore.

Vessels up to 231m in length and 10.7m draft could be ac-

commodated at the berth.

It has been reported (1997) that vessels transit Portland Bight during daylight hours only and that vessels are not allowed to dock at Rocky Point when wind speeds exceed 15 knots. It is also reported (2009) that the unlit beacons marking the channel and turning basin at Port Esquival are either missing or are now lit. Mariners should navigate with caution and obtain the latest information from the local authorities.

Pilotage.—Pilotage is compulsory and should be ordered through the vessel's agent at least 48 hours in advance, confirming 24 hours prior to arrival. Pilots normally board off the buoys marking the dredged channel to Port Esquivel, but will board off the seaward approaches, about 2 miles SE of Bare Bush Cay by request. The pilot vessel (call sign: Silver Spray) may be reached on VHF channel 16.

Anchorage.—There is anchorage throughout Portland Bight. The holding ground is good, but the anchorages are exposed to fresh sea breezes in most places. The breeze usually springs up in the late morning and blows steadily until late in the evening. It produces a choppy sea, but there is no noticeably large swell. The direction of the breeze and the chop is consistently from the ESE.

Anchorage can be obtained under the lee of Pigeon Island, off a bight in the reef on the NW side of the island, in depths of 13 to 15m, but the island, being low, affords little protection in a storm.

The anchorage off Old Harbor Bay Village is in a depth of about 7m, with the white house at Marlie Mount in line with the church, bearing 353°, but the church is hard to identify.

The anchorage in Salt River Bay is under the lee of **Salt Island** (17°50'N., 77°08'W.), and vessels anchor as convenient, taking care to avoid the reefs off Burial Ground Point and Long Island which are usually visible in daylight. Depths at this anchorage vary between 5.5 to 9m, good holding ground.

Anchorage may be obtained, in depths of 7 to 10m, good holding ground, on the N side of the approach to West Harbour. There is anchorage, in a depth of 13m, in a bight in the reefs NE of Portland Ridge Light.

Jamaica—South Coast—Portland Bight to South Negril Point

6.41 Carlisle Bay (17°45'N., 77°16'W.) lies about 7 miles NW of Portland Point and immediately NW of Rocky Point. Robertson Shoal, on which there are rocks awash at LW, lies 1 mile W of Rocky Point. The shoal breaks heavily during strong winds.

A pier stands 2.5 miles NW of Rocky Point. Anchorage may be obtained, in a depth of 7.3m, with the above pier bearing 047°, and Rocky Point bearing 117°.

Between Carlisle Bay and Cuckold Point, 14 miles NW, a broad shoal water insular shelf fronts the coast for much of its length before narrowing and disappearing entirely at the W extremity of the island. Brune Bank, with a least depth of 8.2m, lies 8 miles SSE of Cuckold Point. A shoal, with a depth of 13.1m, lies 7.5 miles SSE of Brune Bank.

Between Portland Point and Cuckold Point the 200m depth contour lies 15 miles offshore, and close within it the bottom rises steeply to depths from 20 to 27m.

Alligator Reef, on which are a number of rocky heads that dry, lies 2.5 miles SSW of Cuckold Point. The depths between the reef and the coast W of Cuckold Point are very irregular.

Anchorage may be obtained in Alligator Pond Bay, 0.5 mile offshore, in a depth of 8.2m, sand. The anchorage is sheltered from E winds by Cuckold Point and Alligator Reef, but a heavy swell rolls in with W and SW winds.

A white concrete water catchment area, situated in the hills 2 miles NNW of Cuckold Point, and a conspicuous white cliff, 119m high, near the coast 1.2 miles W of Alligator Pond, are useful marks when approaching Port Kaiser.

6.42 Little Pedro Point (Port Kaiser) (17°52'N., 77°36'W.) (World Port Index No. 10775) lies about 5.5 miles WNW of Cuckold Point. The port consists of a finger pier extending seaward from Little Pedro Point. The pier is used for loading bauxite and a vessel 213m long with a draft of 10.5m can be accommodated. This pier is in an exposed position and vessels sometimes must lie off during bad weather. Tankers use the end of the pier for mooring. The General cargo pier is a small finger pier 68m in length and an alongside depth of 3m.

The rear structure of a pair of range lights, used to assist vessels approaching the pier, stands 0.2 mile off Little Pedro Point; the front light is shown from the head of the pier. The lights in line bear 347.5°.

Pilotage.—Pilotage is compulsory. Pilots board 1 mile S of the pier head. Vessels waiting to berth anchor 1 mile SW of the pier. Vessels normally berth by letting go the port anchor close SE of the pier head, then swinging the stern in the turning area through W until berthed, bow S, alongside the W side of the pier.

The ETA of vessels should be radioed 48 hours and 24 hours in advance. Vessels are berthed both day and night.

Great Pedro Bay (17°51'N., 77°45'W.) lies about 8 miles W of Little Pedro Point. The bay affords temporary anchorage, in a depth of 8.2m, 0.5 mile NW of Great Pedro Bluff, but the anchorage is unsafe and the bay is gradually silting up.

A heavy swell occasionally rolls into the bay, especially after a continuance of E or SE winds.

Caution.—Blossom Bank (17°51'N., 77°59'W.), whose center lies 13 miles W of Great Pedro Bluff, is between 4 and 5 miles across. The bank has depths of 30 to 46m, with many coral heads with less than 30m. The least known depth is a head with 22.2m at the N extremity, but owing to the irregular nature of the coral, lesser depths may exist.

Fish traps moored by heavy tackle and floats, which might cause damage to propellers, may be encountered on Blossom Bank.

6.43 Black River (18°01'N., 77°53'W.) lies at the head of Black River Bay, and about 11.5 miles NW of Great Pedro Bluff. Lighters are used to move cargo from Black River to vessels lying at anchor in the bay.

The bay is encumbered with reefs, but affords anchorage to vessels less than 122m long, with a maximum draft of 6.7m. A triangular beacon marks the inner limit of the anchorage. The town of Black River lies W of the river mouth.

A hospital, situated 0.5 mile W of the town, is a good landmark. A conspicuous house, as shown on the chart, is a good approach landmark to the anchorage from the W.

Vessels making for the anchorage are cautioned that charted

hydrography is based largely on older surveys and that the charted approach bearings are based on landmarks reported difficult to identify. Submarine cables lie approximately 5 miles S and E of Black River and must be avoided during anchorage.

Parker Bay (18°06'N., 77°59'W.), an indentation in the coast 3 miles NW of Seals Cove, affords good anchorage for small vessels with local knowledge, sheltered by the reefs. The entrance channel, which is narrow, has a least depth of 4.6m in the fairway. There are depths of 5.5m in the bay.

6.44 Bluefields (18°10'N., 78°02'W.) is a settlement near the head of an indentation and lies about 4.5 miles NW of Parker Bay. It may be identified by its church, which stands 1.2 miles NE of **Belmont Point** (18°09'N., 78°02'W.), and the houses of a large estate farther N. The overseer's house, which is conspicuous, lies 0.2 mile NW of the church. A church, Weslayen Chapel, stands on Friars Cap Point.

Anchorage may be obtained inside a ridge of coral heads, in a depth of 10m, with the chapel bearing 030° and the overseer's house bearing about 081°. Local knowledge is essential.

Vessels of deep draft may anchor close outside the above rocky ridge, in depths of 16.5 to 18.3m, but caution is necessary.

Caution.—New Bank (18°00'N., 78°05'W.), whose S end lies 15 miles W of Parottee Point, is 5 miles long from N to S, and about 3 miles wide from E to W. It has general depths of 22 to 40m, with many coral heads, particularly near its SE edge. The least known depth is a head with less than 18.8m, but lesser depths may exist due to the irregular nature of the coral. Depths of less than 18m were reported on the bank.

Fish traps moored by heavy tackle and floats, which might cause damage to propellers, may be encountered on Blossom Bank and New Bank.

6.45 Savanna la Mar (18°12'N., 78°08'W.) lies about 14 miles E of the W extremity of Jamaica, and consists of a community lying at the seaward limit of a comparatively large, quite flat and somewhat swampy plain that extends well inland to surrounding high hills and mountains.

Dolphin Head, one of the higher elevations of the area, stands about 10 miles to the NNW where it serves as a useful landmark in the approach from sea. Two white beacons, standing on the shore about the same distance NE and NW of the conspicuous ruins of a fort in the town, are remarkable and similarly useful in the approach. Two adjacent chimneys at Frome, 5 miles W of the town of Savanna la Mar, are conspicuous.

Savanna la Mar—Conspicuous ruins

The town is fronted seaward by an encumbered steep-to insular shelf that curves in a gentle arc between the low-lying, reef fringed Bluff Point and St. Johns Point, about 8.5 miles to the WSW.

Great Breaker is the outermost of a chain of reefs, many of which dry, that extends 4.5 miles WSW from Bluff Point.

Several passages lead through the ridge to anchorages off the town. Lee Passage, to the E of Great Breaker, is the deepest, with a least depth of 6.4m in the fairway.

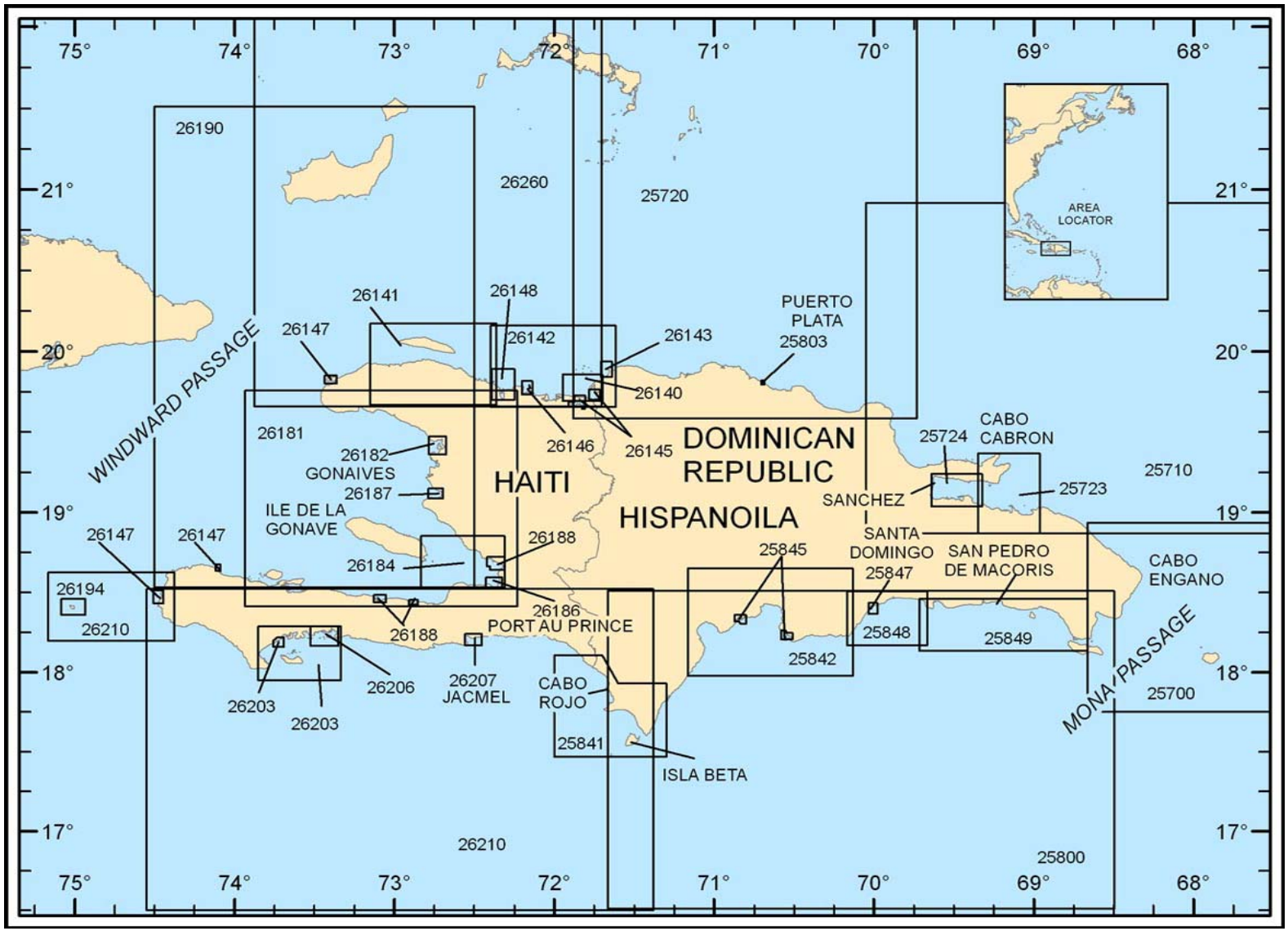
Pilotage is compulsory for merchant vessels, and entry is made in daylight hours. Pilots board vessels 1.5 miles S of the entrance buoy marking Lee Passage. South East Channel and East Channel are not recommended.

Anchorage may be obtained inside Lee Passage, in a depth of 7.3m, with the ruined fort bearing 037°, distant about 2 miles.

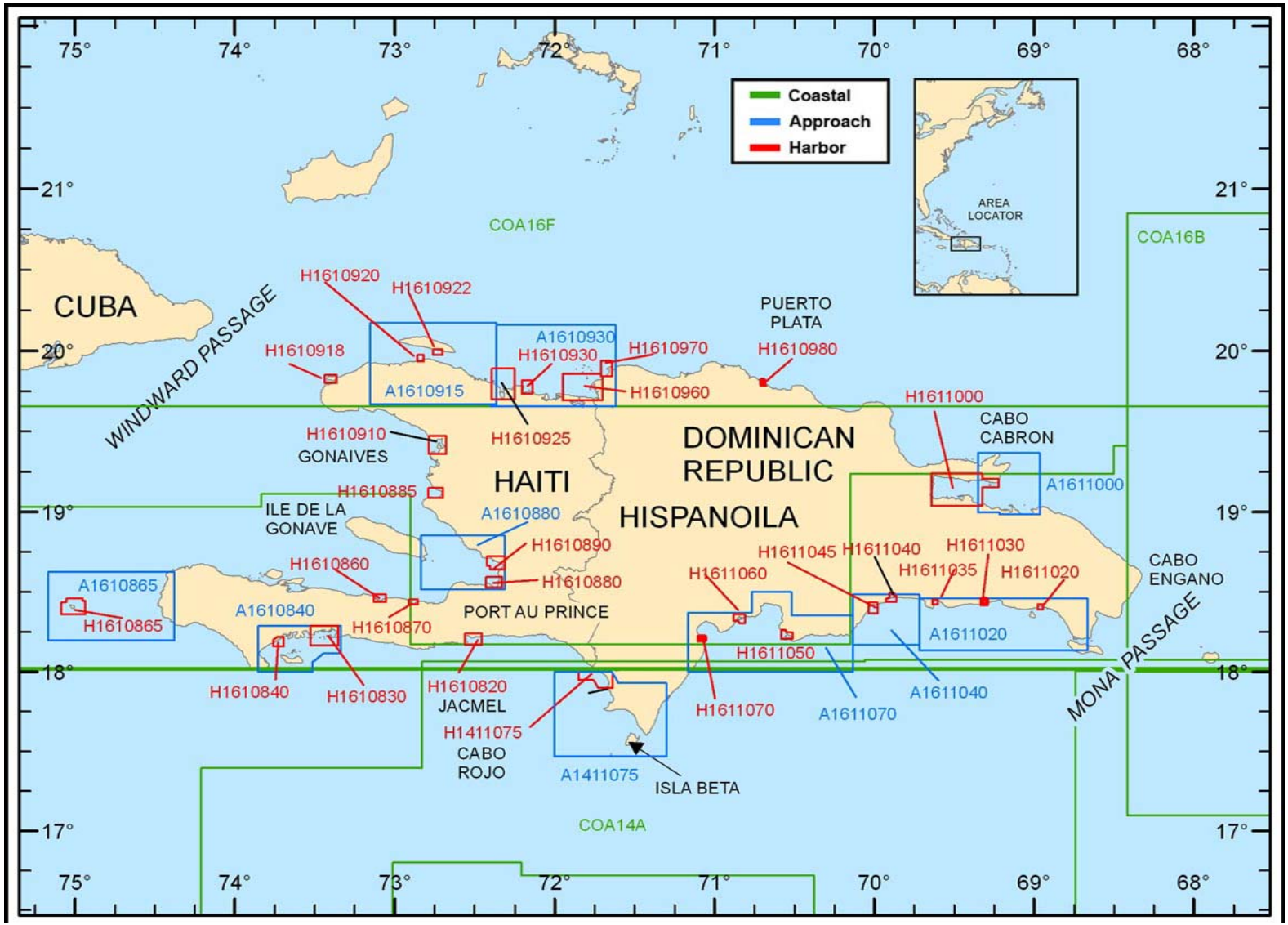
The largest vessel permitted to use this anchorage is 152m long with a draft of 5.8m. Vessels of deep draft can anchor on the bank outside the reefs, but caution is necessary as the edge is steep-to. When the wind is strong, this anchorage is not desirable. This port is no longer commercially active.

6.46 Little Bay (18°13'N., 78°16'W.), 2.2 miles NW of St. Johns Point, and Homers Cove, 0.7 mile farther NW, are the only places where landings can be effected between St. Johns Point and West Point, situated 1.5 miles S of South Negril Point. This stretch of coast is steep-to.

South Negril Point (18°16'N., 78°22'W.), the W extremity of Jamaica, was previously described in paragraph 6.33.



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



Additional DNC library coverage may be found in NGA DNCs 14 and 16 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 7 — DNC LIBRARY INFORMATION

SECTOR 7

HISPANIOLA—HAITI AND THE DOMINICAN REPUBLIC

Plan.—This sector describes the coastline of the island of Hispaniola, which consists of the Republic of Haiti and the Dominican Republic. The descriptive sequence is from W to E. Navassa Island is also described in this sector.

General Remarks

7.1 Hispaniola, the second largest island of the West Indies, lies between Cuba and Puerto Rico. The island is about 360 miles long from W to E, with a maximum width of about 140 miles.

The Dominican Republic occupies about two-thirds of the island and the Republic of Haiti occupies the remaining third.

The island is traversed by three distinct mountain formations, all of which have a general E and W direction, with many large and fertile plains between the ranges. The mountains are richly and heavily timbered, making the island the most fertile in the West Indies.

Large scale chart coverage for U.S. territory located within this sector is provided by the National Ocean Service. Regulations pertaining to navigation within U.S. territorial waters may be found in NOS Coast Pilots, while additional regulations will be cited in the text along with the navigational feature they affect.

Winds—Weather.—The main source of climate and current conditions affecting Hispaniola are the trade winds. South of 15°N, and over the islands of the Greater Antilles generally, the prevailing winds are NE to E, with NE winds common in autumn and winter and NE to E in spring and summer. North winds appear in winter, SE winds occur frequently in summer and W winds on Hispaniola's W side are possible throughout the year. Local variation takes place principally because of an interplay between general conditions and the more particular conditions arising from land and sea breezes.

Weather conditions are a function of geography, the blocking effect of interior mountain ranges and prevailing trade winds with the result that Hispanola's N side has typically a more marine climate than the S and W side.

North coast temperatures are rather milder 26° to 31°C, than those on the S side 28° to 34°C. Temperatures in the interior highland may occasionally fall to near freezing.

Rainfall varies considerably as to place and time. Along the N coast, precipitation increases from W to E. Along the S coast it increases E to W. The W coast has the least precipitation. The N coast has the least amount of rain from June to August, while the S and W coast minimum rainfall occurs from December to March.

Tides—Currents.—Ocean currents affecting the Hispaniola coast are largely the result of the wind driven clockwise flow circulating around the North Atlantic basin. This flow, the North Equatorial Current sets generally W.

Upon reaching the Caribbean it branches such that one part veers NW and N as the Antilles Current, passing N of Hispaniola while the other branch, continuing through the lesser Antilles, passes S of the island.

Currents on the S side of Hispaniola set W with several notable exceptions due to coastal configurations and wind variations.

Fresh N or S winds often precede an E setting countercurrent between Cabo Beata and Isla Saona. An E setting countercurrent is common between Baie des Cayes and Cabo Falso while a SE setting current is occasionally encountered between Pointe Grande and Pointe a Gravois.

The area where countercurrents and prevailing currents meet exhibit surface agitation, particularly remarkable near Point a Gravois and Carbo Beata.

Hispaniola's W side currents are unique in that they are not directly affected by the prevailing trade winds, which are predominant only N of Cap due Mole, but rather a consequence of influence exerted by land sea breezes and tidal action.

In general, the set is counterclockwise, W in and through Canal du Sud, NW through and out of Canal de Saint-Marc, then SW to merge with the current setting WSW through the Windward Passage.

A strong N setting current passes close off Cap a Foux while strong tidal currents exist between Pointe de la Platform and Baie des Gonaives.

Signals.—Vessels in an emergency or wishing to enter Dominican Republic ports, may contact the Port Captain or the Dominican Republic Navy through the Agua Maria Primera port radio station.

Caution.—Aids to navigation for Hispaniola are reported to be unreliable, particularly the Haitian lighted aids.

Navassa Island

7.2 **Navassa Island** (18°24'N., 75°01'W.) lies about 30 miles W of the W extremity of Hispaniola and is reported to be radar conspicuous at 20 miles. The island is faced throughout by white cliffs that rise directly out of the sea.

Lulu Bay, a small indentation on the SW side of Navassa Island, is the safest place to make a landing.

Tides—Currents.—A current, with a rate of 1 to 2 knots, sets along the SW side of the island in a NW direction, changing to W at the last of the E tidal current.

Regulations.—Navassa Island is a reservation administered through the Commander, Seventh Coast Guard District.

Landing or entry on the island is prohibited, except under permit signed by the Commander, 7th U.S. Coast Guard District, Brickell Plaza Building, 909 SE 1st Avenue, Miami, FL. 33131-3050.

Anchorage.— Good anchorage may be obtained, in a depth of 29m, 0.4 mile offshore, with the NW tangent of the island bearing 000° and the SW tangent bearing 120°. The holding ground at the anchorage is good, but a heavy swell rolls around the S side of the island.

Anchorage may also be taken W of Lulu Bay, in a charted depth of 26m, with the former light bearing 080° and about 0.7

mile distant, over a coral and sand bottom, bottom quality unknown.

Caution.—Mariners are reminded that charted depths in the close vicinity of Navassa Island are based on very old information and cautioned that, while depths increase considerably farther offshore, several shoal water dangers are reported to exist between the island and the W side of Hispaniola.

West Coast—General

7.3 The W coast of Hispaniola, between Cap du Mole, described in paragraph 7.4, and Cap Tiburon, about 107 miles SW and described in paragraph 7.20, is for the most part a large coastal indentation or gulf which, trending well inland, creates to the N and S two disproportionately-elongated peninsulas that give Hispaniola its characteristic lobster's claw appearance.

The coastal terrain consists generally of rugged, scrub-covered to well forested hills rising inland to mountain summits, of which Morne Bonhomme is the highest, and includes several comparatively-extensive low-lying coastal plains.

Golfe de la Gonave (19°17'N., 73°00'W.), entered between Pointe de la Platform and Cap Dame Marie, a distance of about 86 miles, is quite deep throughout and steep-to in its rise to land areas or to shoal water coastal banks fronting Baie des Gonaives, filling Baie de Port-au-Prince and obstructing much of the area about Presqu'ile des Baraderes. Ile de la Gonave, the principal offshore land feature, is very hilly and lies such that passages to the head of the gulf lead either N of the island through Canal de Saint-Marc or S through Canal du Sud.

West Coast—Cap du Mole to Port Au Prince

7.4 **Cap du Mole** (19°50'N., 73°25'W.) is the SW extremity of a flat peninsula, connected to the mainland by a low isthmus, which forms the N side of Mole St. Nicolas. Tide rips have been experienced off the cape and the coast NE of it.

Baie du Mole (19°49'N., 73°23'W.), marked by a light on its SE portion, lies on the NW extremity of Hispaniola, and is entered between Cap du Mole and Cap Saint Nicolas, 1.7 miles S. The town of Le Mole stands on a flat, sandy point, on the S side of the inner part of the inlet. The head of the inlet, which extends NNE above Le Mole, is known as Baie Carenage.

Anchorage.—Anchorage is impracticable throughout much of Baie du Mole, particularly in the entrance, because of considerable depths. Baie Carenage has good shelter for deep-draft vessels, but the swinging room is limited.

Vessels anchor close off the N side of the bay, in 12.8 to 18.3m, NW of Le Mole, with fortifications fronting the town bearing 160° and the ruins of a warehouse NE of the town bearing 100°. The anchorage is open to winds out of the W and has a holding ground that is both uneven and foul. It has been reported (1992) fair to good.

A good anchorage for small vessels is NE of the town, in a depth of 22m. Care must be taken when entering the inlet to avoid submarine cables which run W and WNW from a position 0.1 mile S of Fort St. George.

7.5 **Cap Foux** (19°46'N., 73°27'W.) is a bold headland, faced with steep cliffs above which high land rises, and is located 3 miles SW of Cap Saint Nicolas. A detached rock, 4.6m high, is located close to the cape.

There is a cove with a sandy beach where landing can be effected, in moderate calm weather, 0.2 mile N of Cap Foux. The bottom can clearly be seen in depths of 18.3 to 22m in this cove.

The coast between Cap Foux and Pointe de la Platform, 10 miles S and E, is steep-to and consists of bold, white, perpendicular cliffs. Anchorage may be obtained by small craft, in depths of 4.6 to 6.4m, in Platform Bay, W of Pointe de la Platform.

Tides—Currents.—Close inshore along this stretch of coast, the current sets strongly N, while 6 miles offshore it will be found setting generally W or WSW.

7.6 **Baie de Henne** (19°39'N., 73°13'W.), about 9 miles E of Pointe de la Platform, is a small, deep-water, and quite steep-to coastal indentation. The bay affords anchorage to vessels with local knowledge, but the bottom is irregular and it is not recommended.

The village of Henne stands at the head of the bay. It is reported that a prominent church with a belfry and masonry cross, stands in the vicinity of the village.

Baie de Port-a-Piment is a small cove, having shelter for small vessels and lies about 12 miles ESE of Baie de Henne.

An extensive bank fronts the coast between Baie de Port-a-Piment and Pointe Lapierre, 16 miles SE. It has been reported that anchorage may be obtained on this bank, in a depth of 31m, clean bottom, with Pointe Corridon bearing 318° and Pointe Lapierre bearing 093°. A light is displayed from Pointe Lapierre.

Gonaives (19°27'N., 72°42'W.) lies at the head of Baie des Gonaives, which is entered between Pointe Lefevre and Pointe Verreur. The bay is small, unencumbered, and somewhat deep. The land on the N side of the bay entrance is high, while on its S side the land is low.

Morne Bienac, a bold prominent hill 1.5 miles N of the town, is easily identified. The church in the town is conspicuous and makes a good landmark.

The port consists of two berths with approximate alongside depths of 5.0m and 6.4m. Pilots are unavailable locally but can be requested from Port-au-Prince. Berthing operations are conducted during daylight hours only.

Anchorage.—Baie des Gonaives, although open to the W, has good anchorage, particularly in Baie Grammont, where moderate-sized vessels of suitable draft lie well sheltered in 6 to 8m, mud bottom. The best anchorage for deep-draft vessels is in depths of 11 to 12.8m, mud and sand, with the conspicuous white bluff, located 1 mile ENE of Pointe Lefevre, bearing 000° and the town church bearing 087°. All cargo operations take place at the anchorages.

Directions.—The bay is entered with a conspicuous rocky cliff on the SE of Morne Bienac ahead bearing 058°, which leads to the deep-draft anchorage mentioned above.

Caution.—Caution is advised, as E of the anchorage depths shoal rapidly.

7.7 **Baie de la Grande Pierre** (Grand Pierre Bay) (19°18'N., 72°45'W.) lies 8 miles S of Baie des Gonaives.

The bay is shoal over much of its inner reaches and encum-

bered at each entrance point by shoal water spits of sand and mud. Tide rips often occur off the N entrance point. Vessels anchor in 11.6 to 12.2m, mud, in a position with the S entrance point of the bay bearing 220° and a village located farther E bearing 122°.

Mariners are cautioned that the shore fronting this area is continually changing under the influence of sedimentary deposition and that shoaling may occur farther seaward than charted.

Pointe Table au Diable (Devil Point) (Pointe Diable) (19°13'N., 72°48'W.) lies 14 miles S of Pointe Lapierre and consists of a steep faced cliff. The point forms the NW extremity of a steep-sided mesa or small isolated plateau that rises abruptly at the seaward edge of extensive inland mud flats. The plateau is conspicuous from the N and S, where at a distance it appears as an island.

7.8 Saint-Marc (19°07'N., 72°42'W.) lies at the head of Baie de Saint-Marc, 6.5 miles S of Pointe Table au Diable. The twin spires of the cathedral in the town is a good landmark.

Anchorage.—The usual anchorage is about 0.2 mile W of the S end of town, in a depth of 55m. Vessels are moored, heading W, with their sterns secured to anchors buried in the beach, the shore being steep-to between the shoal heads. The anchorage is dangerous in strong W winds. The anchorage should be approached with the summit of Morne a Vigie bearing 090°.

The port has a three sided quay with the main cargo berth on the W side. Small vessels of suitable draft can lie alongside. In most cases cargo is handled at the anchorage.

Approaches to Baie de Port-au-Prince

7.9 Ile de la Gonave (18°51'N., 73°03'W.), a large mountainous island, lies about 20 miles SW of Baie de Saint-Marc. The island, when seen from the NW, appears as two rounded hills. The shores of the island consist mainly of long stretches of sandy beach interrupted by fields of mangrove. The two principal exceptions to this generally low-lying shore is the area NE of Pointe Ouest, the W extremity of the island which rises steep-to in abrupt sea cliffs, and Pointe Fantasque, the ESE extremity of the island which consists of a conspicuous white bluff on the seaward face of a rather hilly peninsula. Lights are displayed from Pointe Ouest and Pointe Fantasque. A stranded wreck is located 1.5 miles ESE of Point Fantasque near the Ilot Fregate de Croissant.

Grand Baie (18°43'N., 72°48'W.) is an indentation in the coast between La Grande Point and Petit Gonave islet, 2 miles SSW. It is well-protected, but the holding ground is poor and there are many coral heads.

Anchorage, exposed to E winds, is available but local knowledge is necessary.

Caution.—A danger circle unexploded ordnance was reported (1991) (PA) in position 19°16.9'N, 73°26.5'W, located NNW of Pointe Ouest.

Vessels are urged to contact the local authorities and the pilot for the latest information on the approach channels, depths, berths, anchorages, etc. before planning a voyage here due to the earthquake (2010). The 7.0 magnitude quakes epicenter lied about 10 miles W of Port-au-Prince.

7.10 Canal du Sud (Chenal Gonave) (18°40'N., 73°05'W.), oriented E to W between Ile de la Gonave and the mainland to the S, is a somewhat extensive body of water which has considerable depths throughout. Banc de Rochelois, consisting of several rocky heads and a bank with depths of less than 20m extending 11 miles SW of Ile de la Gonave, obstructs the channel. Currents in the channel are reported to set generally to the E.

Banc de Rochelois (18°38'N., 73°12'W.), lying centrally within Canal du Sud, is a small rather steep-sided seamount that lies surmounted by a shoal and an irregularly surfaced plateau of sand and scattered sunken dangers. Les Pirogues are small rocks located near the middle of the bank, and nearby are others which barely dry. A light is shown on one of the Les Pirogues. Roche Vandalia, a dangerous rock, is located within the bank SSE of Les Pirogues.

Vessels should pass either N or S of Banc de Rochelois, but in doing so they are reminded to proceed with caution at all times and to give its several dangers a wide berth.

7.11 Canal de Saint-Marc (18°55'N., 72°50'W.), entered between Pointe de Saint-Marc and Ile de la Gonave's N side, is a sparsely surveyed, rather deep water passage, having on its steep-to insular mainland side, for a distance of 17 miles to Pointe du Trou Forban, a rugged and mountainous terrain that rises rapidly close inland.

The SE portion of the passage shelves rapidly between Pointe du Trou Forban and Ile de la Gonave SE extremity, where above and below-water dangers extending well into the passage from each point, considerably narrows its navigable width. Currents through the passage reportedly set NW.

Les Arcadins (18°48'N., 72°39'W.), about 4 miles SSW of Pointe du Trou Forban, consists of three islets of which the middle and largest is flat and largely barren, while the other two are bushy. All are reported to be good radar targets. A light is shown from the middle islet.

Anchorage may be obtained, in a depth of 21.9m, with the light in line with the NE islet bearing about 237°, and the latter distant about 1.5 miles.

Recifs Arcadins, with depths of less than 5.5m and with depths of less than 1.8m in places, lie 2 miles offshore, 2.7 miles ESE of the light. The depths between the islets and the reefs, and between the reefs and the coastal reef, are very irregular.

Baie de Port-au-Prince

7.12 Baie de Port-au-Prince (18°40'N., 72°30'W.) is entered between Pointe du Trou Forban and Ca Ira. The approach to the bay can be made either N or S of Ile de la Gonave. The city and port of Port-au-Prince is located at the SE corner of the bay. The bay is fronted in each of its approaches by considerable depths that shoal rapidly to a steep-to shelf or bar which in turn joins Pointe du Trou Forban and the mainland coast at Ca Ira with Ile de la Gonave SE extremity. The N side of the bay has several sheltering bights while the S side is of no real interest.

Arcahaie (18°46'N., 72°31'W.) is a village located on the N side of Baie de Port-au-Prince, 8 miles SE of Pointe du Trou Forban. The village church is prominent from offshore.

Anchorage.—Anchorage may be obtained 0.5 mile offshore, in a depth of 27.4m, with the village bearing 304°, but a 12.8m patch lies close SE of this position. Five anchor berths, designated S7 through S11, are available and are best seen on the chart.

7.13 Pointe de Boucassin (18°43'N., 72°27'W.) lies 4.5 miles SE of Arcahaie. A village of the same name stands 1 mile ESE of the point. Ile a Cabrit, close inshore, lies 4 miles SE of Pointe de Boucassin.

The island is not easily identified. There is a boat passage between the island and the coast. A white cement factory, with conspicuous chimneys, stands near the coast 1 mile N of Ile a Cabrit.

A finger pier extends seaward from the factory. The pier, 91m long with a depth alongside of 6m, is used by vessels of 20,000 gt. Pilots and a tug are available at Port au Prince.

Rade de Foso (18°40'N., 72°23'W.), entered between Pointe de Boucassin and Pointe de Cul de Sac, 8 miles SE, affords good anchorage, in depths from 12.8 to 33m, but depths within the bight are irregular. A depth of 10.5m is charted about 1.2 miles SE of the tank on Ile de Cabrits.

Lafiteau (18°41'N., 72°21'W.) contains a flour mill. A T-shaped jetty extends 210m SW from the coast, 1.3 miles ESE of Ile a Cabrit. The head of the jetty, 21m long, with dolphins off each end, has a least depth of 8.5m alongside. Two mooring buoys lie NW and two lie SE of the jetty head. Range lights, in line bearing 044.5°, lead through a channel, with a least depth of 14m, to the jetty.

A pilot is available at Port-au-Prince.

Anchorage may be obtained in the SW part of Baie de Port-au-Prince, off Ca Ira, in a depth of 18.3m, but several shoal patches lie within 0.5 mile of the coast. Six anchor berths, designated S1 through S6, are available and are best seen on the chart.

Port-au-Prince (18°33'N., 72°21'W.)

World Port Index No. 10880

7.14 Port-au-Prince, lying on the SE side of the head of Baie de Port-au-Prince, is the administrative and commercial center of the Republic of Haiti. It is a medium-sized city with a well laid out harbor.

Winds—Weather.—The weather for the area is nearly always calm except for certain times of the year. From May to November, occasional strong winds may interrupt normal loading and discharging operations.

A light breeze from the E or NE blows after dawn, but in the afternoon a breeze three times stronger blows in the opposite direction.

Tides—Currents.—The mean rise of tide here is 0.3m. Currents in the port are almost negligible, except that, when mooring or unmooring a vessel, one should pay attention to a N current of 0.2 knot.

Depths—Limitations.—The depths alongside in the harbor are 6.1m to 8.5m; the greater depths lying at the S part of the pier. Caution is to be used when approaching from August to November. Note that the depths may have changed alongside all piers since the 2010 earthquake. Much of the port infrastructure was seriously damaged and the city devastated by the earthquake.

For berthing details see the table titled **Port-au-Prince—Berth Information**.

Aspect.—It has been reported (2013) that the cathedral, a white stone building with two conspicuous towers, located 0.3 miles SW of the radio station, is visible. It is reported (2011) that the palace, a large and very white building with a dome, situated S of the cathereral, is in ruins. Fort National, situated on the summit of a hill 0.2 mile S of the radio station, is visible but in ruins.

The ruins of Fort Bizoton, situated on the S side of the bay, is reported to be a good landmark. A lighted range for entry into the Navy Yard at Bizoton is in line bearing 183°. This range may or may not be visible.

The leading range for the harbor entrance consists of the N tower of the cathedral, marked by a light, and the SW corner of Fort National, also marked by a light, in line bearing 104°.

A square monument, 27.4m high, painted cream, blue and red, stands on the range line about 0.4 mile WNW of the cathedral.

The Pointe Lamentin Light a white round metal tower, 29m in height located 4 miles W of the cathedral

Pilotage.—Pilotage is compulsory for all vessels over 800 gross tons. The pilot boards W of Buoy No. 29 and is available 24 hours. Berthing hours are from 0530 to 2100, except Sundays and holidays.

Vessels should forward their ETA and request for pilotage through to the port authority, at least 48 hours and 24 hours prior to arrival.

Port-au-Prince—Berth Information

Berth	Length	Depth	Draft	Remarks
Cargo	380m	9.0-10.0m	9.7m	Grains, cereals and sugar.
Ro-Ro	—	8.0-10.0m	9.5m	Ro-ro, cars, trailers, and containers.
Container Terminal	425m	10.0m	9.5m	Containers and general cargo.
Tanker Berths				
Vareux Terminal	—	9.0m	8.0m	Petroleum products. Can accommodate vessels up to 40,000 dwt and a maximum loa of 185m.
La Ciment du Sud Quay	120m	12.0m	—	Petroleum products and bulk cargo.

Port-au-Prince—Berth Information				
Berth	Length	Depth	Draft	Remarks
Shell Sea Berth "T" Jetty	48m	11.2m	10.6m	Petroleum products. Can accommodate vessels up to 31,000 dwt with a maximum loa of 175m.
LNG Terminal (Haytrac Power and Gas)	—	—	—	Reported (2015) under construction. Located N of Port-au-Prince Bay.
New North Wharf (Phase 1)	450m	11.5m	—	Reported (2015) under construction with a projected finish date in 2018. Phase 2 will increase berthing space to 840m on the North Wharf and create 550m of berthing space on the South Wharf.

It has been reported that the pilot may be summoned by three blasts of the ship's whistle.

Contact Information.—The pilots may be contacted on VHF channels 12 and 16.

The port can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 1-509-370-15372/74
3. E-mail apn@apn.gouv.ht

Anchorage.—The quarantine anchorage is located near the intersection of the two ranges, and may best be seen on the chart. Charted depths range from 14.7 to 27m, bottom quality unknown.

An anchorage for vessels with a draft of over 10m, within Anchorage Area D is charted with the light shown from the cathedral bearing 109°, 2.5 miles distant. A depth of 8m is charted about 0.2 mile ENE of this position.

Anchorage is prohibited in an area off main wharf, best seen on the chart. Eleven designated anchorage areas from A to L inclusive, best seen on the chart, are located near the NE and S shores of Baie de Port-au-Prince.

Directions.—If approaching by Canal de Saint-Marc, steer to pass about 5 miles SW of **Pointe de Montrovis** (18°57'N., 72°44'W.) and about 2.7 miles SW of Les Arcadins, and to the range line. A vessel approaching by Canal de Sud should approach as safe navigation permits, keeping at least 1 mile offshore of Pointe Lamertin.

Caution.—Mariners are cautioned that numerous small fishing boats may be encountered between Ile de la Gonave and the SE head of Baie de Port-au-Prince. A stranded wreck lies about 1 mile NW of Anchorage K.

In addition, submerged nets and traps are marked by floating bamboo stakes which are difficult to see and pose a hazard to a vessel's propellers.

The forenoon haze may obscure Baie de Port-au-Prince's inner part entrance range at distances greater than 4 miles, with the result that the most favorable time to enter is either in the afternoon or at dawn just before the lights of the range are extinguished.

Vessels are urged to consult the local authorities for information on recommended anchorages for this port.

Extensive reclamation had taken place in Port-au-Prince, but much of the port is now seriously damaged. Mariners should navigate with caution and consult the port authority for the latest information.

West Coast—Port-au-Prince to Cap Dame Marie

7.15 Baie du Petit Goave (18°26'N., 72°53'W.) lies about 32 miles WSW of Port-au-Prince, and is entered between Pointe des Roches and Pointe Antoine, 2 miles W. The bay is open to the N, and the depths are considerable and irregular, but it affords anchorage off the town of Petit Goave, in depths of 22 to 37m.

Ile des Poules, a sandy islet, lies on the E side of Baie du Petit Goave. It is surrounded by shoals that nearly block the passage between it and the shore, and at HW in calm weather, can be distinguished only by occasional breakers. A lighted buoy marks a rocky bank 0.5 mile W of the islet.

Petit Goave (18°26'N., 72°52'W.) (World Port Index No. 10870) lies on the E side of Baie du Petit Goave, S of Ile des Poules. Cargo operations consist of lighterage of cargo to ships at the anchorages.

Pilotage is compulsory and pilots board vessels at the entrance to the bay. The town church is prominent. There is a small pier abreast the custom house, with a depth of 2.1m alongside. A coffee mill is found on the S shore of the bay.

It is recommended that a vessel enter the bay with the coffee mill bearing 175°, and when the church in the town bears 085°, it should be steered for on that bearing to the anchorage.

Baie de Miragoane (18°28'N., 73°05'W.) lies about 11 miles W of Baie du Petit Goave. The bay is protected by a narrow reef, almost dry in places, that extends 2 miles E from position close off the W entrance point.

A ridge, with depths from 5.5 to 11m, extends 1.5 miles farther ENE. A depth of 7.6m was reported on this ridge.

A lighted buoy is moored about 3.2 miles E of the W entrance point of the bay.

There is a least depth of 12.2m in the fairway of the passage between the E extremity of the reef and the E shore; the bottom is plainly visible, but in calm weather with an unfavorable light it is difficult to distinguish.

The channel is marked by orange beacons in line bearing 233°.

7.16 Miragoane (18°27'N., 73°06'W.) (World Port Index No. 10860) lies at the head of Baie de Miragoane. Lighters are used to handle cargo to and from ships at anchor in the bay.

Depths—Limitations.—A pier, which extends for 174m in a NE direction from the shore, is located 1 mile W of a conspicuous church. The pier has a T-head, 45m long, and the berth is extended about 100m in each direction by dolphins.

There is a mooring buoy at each end of the berth in which there is a depth of 10.7m. This pier accommodates ships up to 10,000 gt and has been built by the Reynolds Company for the shipment of bauxite in bulk.

There is one small jetty for loading and discharging general cargo, with a maximum depth of 5.4m.

Aspect.—A beacon stands on the pier head. A silver colored oil tank, with a red diamond, stands WNW of the beacon. When both are in line they bear 292.5° and lead to the pierhead following a turn from the entrance range. Buoys mark the dangers in Baie de Miragoane and can best be seen on the chart.

Pilotage.—Pilotage is compulsory. The pilot boards vessels at the entrance to the harbor. Vessels may sail from the harbor without a pilot.

Anchorage.—Anchorage is available with good shelter throughout Baie de Miragoane, in depths of 14.6 to 18.3m. Limited anchorage can also be obtained in the inner harbor, in depths up to 12.8m. A ship awaiting a pilot can obtain anchorage in the vicinity of the lighted buoy. Vessels can anchor S of Caye Baice, but the swinging room is limited.

7.17 **Baie des Baraderes** (18°32'N., 73°37'W.) is entered between Petit Trou de Nippes and Pointe Bec, 4 miles NW. The bay is encumbered with shoal patches and coral heads, but a least depth of 11m can be carried to the SW end of the bay. A winding deep-water passage leads through the entrance reef and into the bay from position close S of Grand Boucan.

The Riviere Baraderes flows into the bay 1.2 miles SE of Rum Cay. Anchorage may be obtained 1 mile N of the mouth of the Riviere Baraderes, in depths of 14.6 to 18.3m, mud bottom. The town of Baraderes is located about 2 miles up river from its mouth. Small boats can ascend to the town.

Grande Cayemite (18°37'N., 73°45'W.), an island two miles off the coast, lies about 8 miles NW of Baie des Baraderes. A light is shown on the N extremity of the island. Baie des Garcons (Cayemites Baie) lies between Grande Cayemite and the mainland coast S of it.

Depths in the bay are irregular and it only affords indifferent anchorage. The W part of the bay is encumbered with shoals and reefs, on some of which are islets that can best be seen on the chart.

The E entrance to the bay is most widely used. There is a least depth of 5.8m through two narrow channels at the inner end of the E entrance. A passage from the N into the bay is seldom used, and then only by small craft with local knowledge.

7.18 **Jeremie** (18°39'N., 74°07'W.) lies on the W side of Baie de Jeremie, about 18 miles W of Grande Cayemite.

The port has been reported closed for shipping.

The ruins of a fort stand on the N entrance point of the bay, and an isolated red house stands 0.2 mile NW of the fort. The clock tower of the cathedral, 0.2 mile W of the fort, is conspicuous.

There is a small pier at the N end of the town. It has been reported (1995) that, due to shoaling, the maximum draft which can be accommodated along the W side of the S face of the pier is 2.4m.

Pilotage.—Pilotage for Jeremie is compulsory. Vessels embark pilots, with prior arrangements, in a position about one mile offshore.

Anchorage.—Anchorage may be taken, in depth of 8.8m, with the town pier bearing 273°, a conspicuous white cliff bearing 233°, and the ruins of the fort bearing 294°. The holding ground is good, but a vessel should always be ready to proceed to sea at short notice, as strong NE winds fill the bay with breakers and the anchorage becomes unsafe.

Northers arise without warning, though it is reported that they are sometimes preceded by an atmospheric condition of extreme visibility, when the SE end of Cuba is seen. A current of sufficient strength to swing a vessel against the wind is sometimes experienced.

Cap Dame Marie (18°37'N., 74°26'W.) is the NW extremity of the long narrow peninsula that forms the S part of Haiti. A light is shown on the cape. The cape has been reported to be a good radar target up to 21 miles.

Faux Cap, similar in appearance to Cap Dame Marie, lies close S.

West Coast—Cape Dame Marie to Cap Tiburon

7.19 Between Cap Dame Marie and Cap Tiburon, 16 miles S, a bank defined by the 200m curve extends up to 12.5 miles offshore. This bank has irregular depths, generally less than 36.6m, and a least reported depth of 9m located 18 miles WSW of Cap Dame Marie. The water is so clear that the bottom is plainly visible.

Vessels should use caution as fish traps, marked by buoys, may be present.

Anchorage may be obtained anywhere off the coast between Cap Dame Marie and Cap Tiburon, but the bays are all exposed to W winds and are sometimes unsafe from September to March when NW winds may occur.

Baie de la Dame Marie (18°35'N., 74°26'W.) is entered between Cap Dame Marie and Pointe Rousselin, 3.5 miles S. Good anchorage, sheltered from offshore winds, may be obtained by vessels with local knowledge almost anywhere in the bay, not less than 0.3 mile offshore. The most convenient berth off Petite Riviere is in a depth of 9.1m, with Cap Dam Marie bearing 000° and Twelve Apostles bearing 112°.

The village of Petite Riviere is situated in the NE part of the bay, and Dame Marie in the S part. Twelve Apostles is a conspicuous white cliff about midway between the villages. Two more villages lie in the bay with a conspicuous white cliff between them.

7.20 **Baies de Nault** (18°29'N., 74°28'W.), about 8 miles SSW of Cap Dame Marie, consists of several shoal water indentations lying between the rock-fringed promontory Pointe Bourry and Pointe de l'Hopital, 1.2 miles S, Anse d'Hainault, about half way between the two entrance points, is a seashore community. Vessels are advised to anchor in 10m, in a position near Pointe Bourry with the center of Anse d'Hainault bearing 108°.

Pointe Fanchon (18°26'N., 74°29'W.), the W extremity of Hispaniola, is a bold reef-fringed headland that first rises abruptly from the sea then slopes more gradually inland to

mountainous terrain. A small bay S of the point has anchorage for vessels with local knowledge.

Cap des Irois, 1 mile S of Pointe Fanchon, is a low-lying point that rises abruptly from the sea with a facing of rocky cliffs, and continues inland to a remarkable hill which appears as an island from well offshore. It is reported to be good radar target up to 25 miles. The cape may be rounded closely, but a depth of 11m was reported 4 miles WSW.

Cap Tiburon (18°21'N., 74°26'W.) is a prominent headland faced with abrupt white cliffs that rise directly out of the sea, and thereafter slope rapidly upward for a distance of 1.2 miles inland to Mont Tiburon.

A large white patch, close SE of Cap Tiburon, is a landmark and reported to be visible at 22 miles.

South Coast—Cap Tiburon to Baie des Cayes

7.21 Between Cap Tiburon and Pointe l'Abacou, about 43 miles ESE, the coast immediately inside a shoreline of numerous small bays and coves consists generally of rather narrow coastal plain having beaches of sand and gravel that are frequently interrupted throughout by low-lying sea cliffs.

Close inland, the terrain rises to rugged hills and farther on to mountains. The offshore area in this section of coastline is sparsely surveyed, but a shoal water coastal bank extends offshore for a distance of 1 mile or so.

Baie de Tiburon (18°20'N., 74°25'W.), lying close SE of Cap Tiburon, is a shoal water coastal indentation fronting on a small plain confined within surrounding hills. A village is situated in the SE corner of the bay. Shoals, with depths of less than 5.5m, extend about 0.2 mile off the SE part of the bay. Anchorage may be taken, in depths of 9.1 to 11m, with Pointe de Bourgaux bearing 181°, distant 0.2 mile, but there is no shelter from W or SW winds.

The numerous coves and bays ESE of Baie de Tiburon, as far as Pointe a Gravois, are open to winds from the S which commonly send in a heavy sea. Small vessels anchor along this section of coast, but only with the use of local knowledge.

7.22 **Port Salut** (18°05'N., 73°55'W.) lies almost 3 miles NNW of Pointe a Gravois. There are a number of houses and a large church in the village. Northwest of the church is a distinctive white cliff. Small craft with local knowledge anchor close to the beach. Large vessels anchor in depths of 20.0m, 1.5 miles offshore.

A sand bank, with depths of less than 5.5m, extends 0.5 mile offshore for a distance of 3 miles in the vicinity of the port. A low island, connected to the shore by a sand spit, lies a short distance off a point, 2 miles NNW of the port.

Pointe a Gravois (18°02'N., 73°54'W.), about 3 miles SSE of Port Salut, is steep-to, heavily wooded, and faced with cliffs. It has been reported to be a good radar target up to 16 miles. The coast, for a distance of 6.7 miles to Pointe l'Abacou, consists of low-lying sea cliffs backed by flatlands which rise to nearby high hills. This part of the coast is fronted by a narrow coastal reef which has several openings available to small vessels with local knowledge.

South Coast—Baie des Cayes

7.23 **Baie des Cayes** (18°07'N., 73°45'W.) is entered between Pointe l'Abacou and Manchon de Cavaillon, 12 miles NNE. A bar connects the head of the bay to the NW point of Ile a Vache. Other than the bar, depths of less than 10m are found throughout the bay and are best seen on the chart. Canal du Sud and Canal de l'Est lead from the sea past the island of Ile a Vache and into the bay.

Ile a Vache (18°04'N., 73°38'W.), lying on the E side of Canal du Sud, is low-lying on its E side and heavily wooded and higher on its W side, with a number of small hills that appear as islets from a distance. A light is exhibited from the E end of Ile Vache, 9.5 miles S of **Pointe Pascal** (18°13'N., 73°33'W.).

The S coast is fringed with a reef that extends from 0.2 to 0.5 mile offshore. Recif de la Folle extends N for about 5 miles from the E end of Ile a Vache.

The outer edge of the bank may be identified by an almost constant ripple.

Tidal currents are strong NE of Ile a Vache. The flood sets W with considerable strength over Recif de la Folle, such that vessels are advised to keep at least 2 miles distant. To the N and NW of the island, tidal currents set NW on the flood and SE on the ebb. Ocean currents combining with tidal currents often set through Canal de l'Est and Baie des Cayes and out through Canal du Sud.

7.24 **Les Cayes** (18°11'N., 73°44'W.), lying on the N side of Baie des Cayes, is a transshipment center for the lightering of cargo to vessels lying offshore at anchor.

The port is reported closed to shipping.

Canal de l'Est has a least depth of 12.8m, and is the better approach fairway.

A channel over the bar, connecting Ile a Vache to the shore, connects Canal du Sud to Canal De L'Est and Rade Aux Cayes. This channel, S of Grand Recif, is about 1 mile wide and has a least charted depth of 6m.

Anchorage.—Anchorage is available within Rade aux Cayes, a sheltered roadstead, about 1.7 miles SW of Manchon de Cavaillon, where vessels anchor in 18.3 to 20.1m, in a position with the ruins of Tourterelle Battery bearing between 271° and 293°, distant about 1 mile.

Anchorage may be obtained near the port, S of Tourterelle Battery, in depths from 7.3 to 14.6m. There are numerous shallow patches of coral in the area.

South Coast—Baie des Cayes to Baie d'Aquin

7.25 **Baie de Cavaillon** (18°13'N., 73°41'W.), located about 4 miles NE of Les Cayes, is entered between Manchon de Cavaillon and Ile du Carenage, 1.5 miles NE. The E side of the bay is covered with mangroves. A river flows into the head of the bay and is used by small boats to reach a town 4 miles upstream.

Grand Baie du Mesle (18°13'N., 73°37'W.) lies 3.5 miles E of Baie de Cavaillon, and is entered between Pointe Pauline and Pointe Boyer, 1.5 miles E. There are white cliffs at Pointe Saint Rom, 0.5 mile NE of Pointe Pauline, and also at the head of the bay. A river flows into the NE corner of the bay. The bay has depths of 21.9 to 25.6m in its entrance, and from 9.1 to

11m in the inner part, where they shoal gradually to the mouth of the river.

The bay is exposed to the S, but the holding ground is good and anchorage may be obtained in its NE part.

7.26 Baie de Saint-Louis (18°14'N., 73°33'W.) lies about 4 miles ENE of Grand Baie du Mesle, and is entered between Pointe Pascal and La Pointe Nicolas (Pointe Bonite), 1.7 miles ENE. The bay affords good shelter though open to the S. Medium-sized vessels find excellent anchorage either close W or N of an unnamed islet, which is the site of a fort in ruins and lies near the town of Saint-Louis du Sud at the head of the bay.

The W side of the bay is clear of dangers, but the E side is encumbered with shoals.

Caye Orange (18°13'N., 73°32'W.) lies on the E side of the entrance to Baie de Saint-Louis. It consists of two hillocks on its NW end. Ilet Moustique lies about 0.5 mile E of Caye Orange, and is surrounded by a reef that extends 0.4 mile NW from it. Caye Rat lies 0.3 mile N of the SE end of Caye Orange. The area between these three cays is foul in most places.

7.27 Baie des Anglaise (18°14'N., 73°27'W.), lying to the E of Baie de Saint-Louis, is a broad coastal indentation or bight, open to the S though partially sheltered by the several islets fronting it. Large vessels may anchor in the bay; the holding ground is good. The best protection is afforded in the E part of the bay, N of the W part of Grosse Caye. Three passages lead into the bay. Recifs du Kansas, a sunken danger usually marked by breakers, lies on the E side of the westernmost of these passages bounded on the W by Ile Moustique. The other two passages lead close E of Caye Ramier and between the rocky islet Ile Regale and Grosse Caye. Ilet Anguille is a rocky, bush covered islet, on which the sea usually breaks, lying 0.7 mile NNW of Ile Regale.

Baie d'Aquin is a largely landlocked shoal water indentation. The S entrance lies between Pointe Mourne Rouge and Grosse Caye, 1 mile W. The entrance is obstructed by Ile Diamant, which may be passed on either side. The bay may also be approached from Baie Anglaise, but is recommended for daylight use only. A shoal spit is charted as extending about 0.7 mile N of Grosse Caye, while depths of less than 5.5m extend about 0.5 mile S of a point on the mainland N of Grosse Caye.

7.28 Aquin (18°16'N., 73°23'W.) lies on the W side of the head of Baie d'Aquin.

The port has facilities for the lightering of cargo to vessels lying at anchor in the bay. The usual anchorage is in a depth of 7.3m in the NW part of the bay.

Pilotage.—Pilotage is compulsory. Vessels embark pilots upon prior arrangements, either off Les Cayes or off the several entrances to Baie d'Aquin.

South Coast—Baie d'Aquin to Baie de Jacmel

7.29 Between Baie d'Aquin and Baie de Jacmel, about 49 miles to the E, the coast consists of a largely uninterrupted range of rugged generally scrub-covered hills that rise immediately behind a narrow coastal plain which extends as far as the town of Cotes de Fer.

Thereafter, it decreases considerably in width and continues on as a ribbon-like trace of land faced by low-lying cliffs in various colors.

Cap Bainet (18°09'N., 72°45'W.), about 37 miles E of Baie d'Aquin, may be identified by some white hillocks that surmount the cliffs there. A village is located at the head of a small bay close E of the cape. The bay has a fine sandy beach, but landing is difficult because of a heavy sea that breaks on the beach.

Baie de Jacmel (18°13'N., 72°32'W.) lies about 12 miles ENE of Cap Bainet and is entered between Cap Jacmel, marked by a light, and Cap des Marechaux, 2 miles NE. The bay is a small indentation surrounded by brush and rugged hills which dominate much of the shore seaward of a narrow river plain backing the head of the bay. It is clear of sunken dangers and quite deep throughout, but open to the SE. The bay may be identified by a conspicuous mountain formation which, lying to the E and somewhat to the N, drops precipitously from its higher E ridge to its lower W ridge. Pilotage is available. Vessels embark pilots about midway within Baie de Jacmel, but must remain 0.5 mile offshore until pratique is granted. A conspicuous church with two red-roofed towers stands at the head of the bay.

7.30 Jacmel (18°14'N., 72°31'W.) (World Port Index No. 10820), a lightering port, lies on the N side of the bay. The port has a pier with a length of 102m and an alongside depth of 5.2m. Three stranded wrecks, best seen on the chart, mark the inner port area.

The best position for anchoring is off an old fort with the church bearing about 025°, but the edge of the bank is so steep that vessels must be prepared to anchor immediately on getting into anchorage depths.

A vessel, 104m length, anchored with the church bearing 021° and Cap de Marechaux bearing 129°, in a depth of 9.1m, mud bottom. A vessel mooring should arrange to head about 155°, in order to lie head-on to the swell that usually rolls into the bay.

Caution.—The hydrography shown on the plan of the bay is from older surveys, and has been radically adjusted to conform to the shoreline.

South Coast—Baie de Jacmel to Cabo Falso

7.31 The coastline between Baie de Jacmel and Cabo Falso, about 54 miles ESE, describes a gentle arc having no significant indentations. A sparsely surveyed, but apparently steep-to shoal water insular shelf fronts the entire coast and extends irregularly seaward for distances of up to 5 miles.

Cayes Jacmel (18°14'N., 72°23'W.), a small coastal town, lies 8 miles E of Baie de Jacmel. A rocky reef, with several openings available for small craft with local knowledge, skirts the coast between Cayes Jacmel and Pointe du Fournier, 2 miles W. The principal opening is fronted by an islet.

Baie de Bella-Anse (18°14'N., 72°03'W.) lies 19 miles E of Cayes Jacmel. The town of Bella-Anse stands on the W side of the head of the bay. Small vessels, with local knowledge and drawing not more than 4.6m, may anchor close off the head of the bay in sand and mud. Larger vessels anchor, in 13 to 15m, about 1 mile offshore; however, the holding ground is poor. The bay is open to the S and dangerous during hurricane sea-

son.

The Riviere Pedernales (Rio Pedernales) enters the sea about 15.7 miles NNW of Cabo Falso where it marks the S extremity of the boundary between Haiti and the Dominican Republic. Pedernales, a Dominican town, stands on the SE side of the Riviere Pedernales. A pier, 152m, with depths of 4.3 to 5.2m at its head, is situated W of the town. A light is shown about 1 mile E of the mouth of the river. Anchorage may be obtained, in a depth of 9.1m, 1 mile S of the mouth of the river.

7.32 Cabo Rojo (17°54'N., 71°40'W.) (World Port Index No. 11075) lies 9 miles SE of the mouth of the Riviere Pedernales. The cape is a low-lying salient point having its S side faced by dark cliffs that rise directly from the sea. A conspicuous water tower stands about 1 mile ESE of Cabo Rojo.

A deep-water anchorage is available immediately outside the port. Contact the pilot for the best location.

A privately owned pier, used for shipments of bauxite and limestone, is 100m long with two mooring buoys.

Vessels enter through a buoyed channel. Both the pier and the channel are reported to be dredged to a depth of 10.6m. Vessels berth starboard side to and shift fore and aft so as to position hatches under stationary loading chute. The entrance to the channel is marked by a lighted buoy. The pilot boards S of this lighted buoy, by day only.

The pilot can be contacted 2738 kHz or VHF channel 16. An accurate ETA is important, because the pilot must come from Barahona, about 2 hours away. No entry or departure at night is allowed.

Vessels anchor with a good scope of chain, in 5.5 to 12.8m, poor holding ground, with Cabo Rojo bearing 158°, distant 2 miles.

Winds at the loading facility are predominantly out of the E. They begin early in the forenoon, blow throughout the day, subside at sunset and generally remain calm throughout the night.

If strong out of the E and full on the beam, they can inconvenience vessels loading cargo.

Winds out of the W are rare and seldom violent, but if they persist for two or three days, they send in a swell which can cause a berthed vessel to pitch almost 1m.

7.33 Bahia de los Aguilas (17°50'N., 71°39'W.) lies about 5 miles SSE of Cabo Rojo and is entered between Punta de las Aguilas and Punta Chimanche, 3 miles S. The shore of the bay consists of coarse sand and gravel, behind which steep cliffs rise to a moderate height. The bay affords good shelter from E winds, but is exposed to the W.

Bahia Agujas (17°47'N., 71°40'W.), entered between Punta Chimanche and Cabo Falso, 3.2 miles SW, affords anchorage, in depths of 9.1 to 14.6m, near the middle of the bay, with shelter from winds between the N and SW through E. The depths decrease gradually towards the beach at the foot of high cliffs, which extend along the entire shore. There is good anchorage for small craft in the S part of the bay.

Ensenada de los Puercos (17°44'N., 71°32'W.), a broad bight, lies between Cabo Falso and Cabo Beata, 18 miles ESE. Steep cliffs, which are particularly remarkable at Cabo Falso, face much of the N side of the bight as far as Punta de Acecho; marshes and swamps characterize much of the remainder of the bight to Cabo Beata.

Offshore, a steep shoal water bank of sand and coral fronts Cabo Falso and then curves around the bight to Cabo Beata, where it reaches out to the SW and provides a shelf from which the islands of Isla Beata and Isla Alto Velo emerge.

7.34 Off-lying Islands.—Isla Beata (17°35'N., 71°31'W.), lying 3 miles WSW of Cabo Beata, is hilly and largely covered with brush and scrub. The island is separated from the mainland by Canal de la Beata, which for the most part is shoal, and a heavy sea and swell are usually present. A tower stands on the NW side of the island. Cabo Beata is marked by a light.

Isla Alto Velo (17°29'N., 71°38'W.), about 15 miles SW of Cabo Beata, is a high steep-sided rocky islet which is reported to be a good radar target up to 19 miles.

A light is shown on the summit of the islet. A depth of 11.2m was reported about 4 miles ESE of the light.

Anchorage is available close off the W side of the islet. Anchorage is also available off an old pier on the NW side of the islet, in depths of 12.8 to 20.1m, with a flagstaff bearing 089°, distant 0.5 mile.

Canal de Alto Velo, the passage between Isla Alto Velo and Isla Beata, is deep and free of dangers. In 1992, depths of 65, 14, and 11m were reported within the canal passage between the two islands. Usually there is a heavy swell, both in the canal and on the bank E of Isla Alto Velo. The trade winds are frequently strong as they are deflected S through the passage by high mountains within the mainland interior to the N.

Los Frailes (17°37'N., 71°41'W.) lies 9 miles NNW of Isla Alto Velo. From a distance it appears as a group of sharp-peaked, rugged rocks with white tops. A light is shown on Los Frailes.

Between Cabo Beata and Bahia de Neiba, about 40 miles NNE, the coastline is quite regular without any noteworthy indentation and, being a lee shore to prevailing wind and sea, without any sheltering anchorage.

The offshore area consists of a shoal water narrow shelf that drops off seaward to considerable depths.

Inland, the terrain is conveniently divided into two largely equal parts, consisting first of flatlands and followed by mountains.

South Coast—Cabo Beata to Punta Salinas

7.35 Bahia de Neiba (18°15'N., 71°02'W.) lies about 40 miles NNE of Cabo Beata and is entered between Punta Avarena and Punta Martin Garcia, 8 miles NE. The bay is roomy and consists mainly of deep water. Punta Martin Garcia is reported to be visible up to 20 miles and is a good radar target up to 29 miles.

The inland terrain on each side of the bay is high, rugged, and scrub-covered, while the terrain at the head of the bay is low and swampy.

7.36 Puerto Barahona (Samantha) (18°12'N., 71°05'W.) (World Port Index No. 11070) lies on the SW side of Bahia de Neiba. The approach channel was reported to be dredged to a depth of 10.7m on the entrance range.

Depths—Limitations.—For berthing information see the table titled **Puerto Barahona—Berth Information**.

Puerto Viego de Azua

Pilotage.—Pilotage is compulsory. The pilot boards from a small tug approximately 1.5 miles outside the port. The best time for berthing is between 0600 and 0930, when the wind is light. An ETA should be sent 24 hours in advance, confirming 12 hours prior to arrival.

The pilots can be contacted, as follows:

1. VHF: VHF channel 16
2. RT Frequency: 2738 kHz
3. Telephone: 1-809-524-2384

The National Port Authority can be contacted, as follows:

1. Telephone: 1-809-537-0055
2. Facsimile: 1-809-537-1706
3. E-mail: info@aprordom.gov.do

Anchorage.—The outer anchorage is 0.2 mile SE of the above-water part of Arrecife Piedra Prieta, in depths of 12.8 to 14.6m. The inner part has anchorage by draft, but vessels must moor bow and stern on account of limited swinging room. Contact the pilot for best locations.

Caution.—Anti-piracy and stowaway watches should be vigilant and incidents reported to the authorities.

7.37 Puerto Viejo de Azua (18°20'N., 70°50'W.) (World Port Index No. 11060) lies on the W side of Bahia de Ocoa and is entered E of Cayo Puerto Viejo island, at the E extremity of which is a precipitous white faced bluff which is a good landmark, especially from the E. This port is used mainly by LPG tankers.

A light is shown on the E end of Cayo Puerto Viejo island.

A detached bank, with depths of less than 11m and with a least depth of 7m, lies in the middle of the approach to the entrance. The entrance is about 0.5 mile wide, and two arms of deeper water, with 5.5m and deeper, extend about 1 mile N and NW, respectively, from the entrance.

A channel, marked by buoys, was dredged to a depth of 10.7m from the entrance to the head of the N arm where there is a wharf. This channel passes W of a 4.5m detached shoal, lying nearly in mid-channel, WSW of the entrance point.

Depths—Limitations.—The main pier (W), is 185m long, with an alongside depth of 9.1m and is used for the loading of bananas and occasionally other fruit with some general cargo also being worked. There is also a ramp for ro-ro vessels located on this pier. The Oil Terminal is located on the main pier (E), 185m in length and depths of 10m alongside. This pier will accommodate tankers as long as 183m and a maximum draft of 7.9m.

Pilotage.—Pilotage is compulsory. The pilot boards the vessel about 0.5 mile from the sea buoy. Contact can be established on VHF channel 16. It has been reported pilots are available only during daylight hours.

Puerto Barahona—Berth Information

Berth	Length	Depth at HW	Remarks
No. 1 (N side of finger pier)	216m	8.2m	Dominican Navy and fishing vessels.
No. 2 (S side of finger pier)	137m	8.2m	Dominican Navy and fishing vessels.

Puerto Barahona—Berth Information			
Berth	Length	Depth at HW	Remarks
No. 3	160m	9.4m	Gypsum.
No. 4	146m	8.2m	Sugar and molasses.

Anchorage.—A vessel can obtain anchorage, in a depth of 11m, in the E of the two deeper arms, NE of the detached coral reef, but it is exposed S. Anchorage may be obtained in depths of 9.1m in the W of the two deeper arms, SW of the detached coral reef, but it is exposed to the SE. The bottom of both anchorages is fine coral and mud and is hard.

7.38 Bahia de Ocoa (18°22'N., 70°39'W.) is entered between Punta Martin Garcia and Punta Ocoa, 22 miles E.

The bay contains several anchorages, especially on its E side where they are well sheltered from the prevailing winds, but the bottom is sand and loose stones and anchors drag easily. This side of the bay is affected by the prevailing winds, which at times raise a heavy sea. The shores of the bay are fringed with narrow sandbanks, which extend a short distance offshore.

Puerto Tortuguero (18°25'N., 70°42'W.) lies in the NW corner of Bahia de Ocoa, W of seven prominent cliffs. Pilotage is compulsory for the port. The pilot boards just outside the port. Ships are berthed only during daylight. Puerto Tortuguero is the port for the town of Azua, 3 miles inland. The town is an important center of the sugar industry. The pier in the port is 198m long and was reported to have depths of 10.7m alongside.

Anchorage may be obtained, in a depth of 16.5m, with the pier bearing 315°, distant about 1 mile. Vessels can anchor closer in on the same bearing in less water. A heavy sea sets into the anchorage at times.

7.39 Las Calderas (18°13'N., 70°31'W.) (World Port Index No. 11050), near the head of Bahia de Las Calderas, is a small town and the site of a major naval air station. The bay is small and mostly landlocked. The bay is entered between Punta Matasola and Punta Calderas, about 1 mile S.

Las Calderas

Punta Calderas is a low tongue of sand at the NE end of a peninsula which is flat and for the most part consists of salt ponds, the remainder being partly covered with brushwood and palm trees.

Anchorage may be obtained off the entrance to Bahia de Las Calderas, in depths of 18.3 to 25.6m, about 0.2 mile NW of Punta Calderas and the shore SW of it. This anchorage should not be used during the hurricane season.

The E and W inner anchorages have depths of 9.1 to 12.8m. To reach the E inner anchorage, a ridge, with a least depth of 4.3m in the fairway, must be crossed.

Caution.—Navigation is prohibited within the bay and for as much as 10 miles seaward without permission from Dominican Naval authorities.

Punta Salinas to Santo Domingo

7.40 Punta Salinas (18°12'N., 70°34'W.) lies 1.7 miles SW of Punta Calderas and shows a light. The point is low, sandy, and partially covered with bushes. The sea breaks over it with E winds.

The coast between Punta Salinas and Punta Catalina, about 19 miles E, is fringed with low bushes. There are several bays between these two points which afford open anchorage. There is anchorage from 2 to 3 miles offshore at Agua de la Estancia, 6 miles W of Punta Catalina. This anchorage serves the town of Bani, 3.2 miles inland. An obstruction, with a depth of 12.5m, is reported (2009) to lie 2.9 miles SW of Punta Catalina.

Two red lights are shown 2 miles S of the town.

Puerto Palenque (18°14'N., 70°09'W.), situtated on the W side of Punta Palenque, affords anchorage, in 12.8m, but there is only room for one vessel. Cargo is lightered from the port to the anchorage. A light is shown from Punta Palenque.

7.41 Punta Palenque Oil Terminal (18°13'N., 70°10'W.) (World Port Index No. 11048), an offshore oil terminal consisting of a single lighted mooring buoy, lies 2.5 miles WSW of Punta Palenque.

The mooring buoy is in depths of 24.7m and is associated with a submarine pipeline extending to the shore. Vessels up 305m long and drawing 13.7m can be accommodated. No mooring is available in the harbor.

Two large silver tanks, 2 miles WNW of Punta Palenque, were reported to be conspicuous both visually and on radar.

Ships should inform the authorities of their ETA by telex before leaving their last port. Messages can be sent via Santo Domingo Piloto (HIA) or Curacao (PJC).

Pilotage.—Pilotage is compulsory. The pilot boards 1 mile SW of the buoy. Contact Punta Palenque pilots. Pilot should be contacted 6 hours prior to arrival on VHF channels 14 or 16, with a follow-up call to the terminal 45 minutes prior to arrival on VHF channel 16.

Pilots for Puerto Palenque can be obtained from Santo Domingo.

Puerto de Haina Entrance

7.42 Puerto de Haina (Rio Haina) (18°25'N., 70°01'W.) (World Port Index No. 11045) lies about 14 miles NNE of Punta Palenque at the mouth of the Rio Haina. The harbor basin is formed by two breakwaters.

ITABO Fuel Pier

Tides—Currents.—The river discharge increases during the rainy season (May to September) and current flow can reach a velocity of 2.5 knots; the seasonal deposition of silt requires periodic dredging to maintain adequate depths.

Depths—Limitations.—For berthing details, see the table titled **Puerto de Haina—Berth Information**.

Puerto de Haina—West Breakwater Light

Vessels are docked during daylight hours only and pilotage and mooring crew are compulsory.

The entrance channel is 65m wide between the shoals off the breakwater heads and have a reported least depth of 9m; it is marked by lighted buoys. Large concrete blocks from the ru-

Puerto de Haina Control Tower

Puerto de Haina—Entrance Light

ined breakwaters obstruct each side of the channel on and close outside the lines joining the lighted buoys.

Aspect.—Two conspicuous chimneys, which show red lights, stand 0.2 mile NNW of the root of the W breakwater. The lights on these chimneys are visible from seaward for about 20 miles. It is reported (2010) that the lights are extinguished. There is an obstruction about 0.7 mile SE of the harbor entrance.

Range lights are exhibited from framework towers with conspicuous orange daymarks. The front lies about 0.5 mile NNE of the two conspicuous chimneys. Earlier reports indicate that

Puerto de Haina—East Breakwater Light

Muelle Oriental

the range lights did not lead through the best water in the entrance channel, and it was reported that the leading marks appear to put the vessel to the E side of the channel.

It is reported (2004) that lights are located near the end of the N branch of the W breakwater, and near the end of the E breakwater, but have been reported (2010) exstinguished.

A stranded wreck which is charted to lie close W of the head of the W breakwater has been reported removed since the breakwater was rebuilt.

Pilotage.—Pilotage is compulsory. The pilot boards about 0.6 mile from the breakwater, from a small boat flying a flag with a white P on a black background. The vessel is to be kept dead in the water with a lee on the port side. Night entry and sailing is restricted depending on weather conditions or vessel characteristics.

The pilots can be contacted via VHF channel 16.

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

1. VHF: VHF channels 12 and 16

1. RT Frequency: 2182 kHz, 2638 kHz, and 2738 kHz
2. Telephone: 1-809-957-2969
3. Facsimile: 1-809-957-0797
4. E-mail: apnpap@apn.gouvt.ht

Anchorage.—It is recommended that vessels anchor off Santo Domingo, as the anchorage at Rio Hana is considered unsafe. The recommended anchorage is located at the charted area off Santo Domingo. Anchoring by foreign vessels within the territorial waters of the Dominican Republic is permitted only in designated charted areas. Authorization must be obtained from Port Authorities or the Dominican Republic Navy to anchor elsewhere. Vessels anchoring without the required permission risk substantial fines.

Caution.—Four out of five of recent (2001) armed pirate attacks have taken place in Puerto de Haina.

Anti-piracy watches should be vigilant and incidents reported to the authorities. Armed guards are provided and a compulsory gangway watch is kept by Customs guards.

Puerto de Haina—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			Draft	LOA	
Rio Haina Occindental (West Bank) Tanker Berths					
No. 1	114m	8.7m	9.7m	190m	Chemicals and petroluem products.
No. 2	198m	11m	9.7m	200m	Petroluem products. Vessels up to 60,000dwt, with a beam of 30.0m, can be accommodated.
CBM (Refidomsa)	—	11.5m	10.0m	228m	LPG petroluem products. Facility has four mooring buoys and two cargo pickup buoys.
Rio Haina Occindental (West Bank)					
No. 3	181m	8.5m	—	—	Asphalt, general cargo, and timber.
No. 4	264m	9.7m	8.5m	228m	Vegetable oil, liquid bulk, break bulk, grain, coal, containers, and lo-lo cargo.
No. 5	194m	10.2m	8.5m	228m	Vegetable oil, liquid bulk, break bulk, grain, coal, containers, and lo-lo cargo.
No. 6	134m	9.1m	—	182m	Chemical products, lubricants, and liquid paraffin to shore tanks.
Rio Haina Oriental (East Bank)					
No. 1 (Mercasid)	16m	9.2m	9.4m	183m	Vegetable oil and fats in bulk. Dolphins are 185m apart.
No. 2 (Fersan)	195m	9.9m	9.1m	228m	Fertilizer, grain and bulk liquid chemicals.
No. 3 (Falconbridge)	215m	9.7m	9.1m	228m	Crude oil in bulk, petroluem products, and ro-ro cargo.
No. 4	216m	9.1m	8.8m	152m	Ro-ro, general, and breakbulk cargo.
No. 5	214m	9.1m	—	183m	Containers, general, and bulk cargo.
Rio Haina Oriental (East Bank) Container Terminal					
No. 6A	173m	10.0m	9.7m	228m	Containers, bulk cargo, scrap, steel, and passenger vessels.
No. 6B	173m	10.0m	8.5m	228m	Containers, bulk cargo, scrap, steel, and passenger vessels.
No. 6C	173m	9.1m	7.9m	152m	Containers, bulk cargo, scrap, steel, and passenger vessels.
No. 6D	185m	8.5m	4.7m	182m	Containers, bulk cargo, scrap, steel, and passenger vessels.
Jamaica Livestock	107m	—	5.9m	—	Private.
Texaco East	167m	—	7.9m	—	Tanker berth. (Texaco jetty 54m in length)
Itabo Power Plant Pier (Generadora de Electricidad Itabo SA)					
No. 1S	245m	14.0m	—	—	Coal and petcoke.

New Santo Domingo Breakwater extension (not fully depicted) reported (2010)

It has been reported (2010) that considerable trash and debris are found throughout the river entrance. Navaids marking the entrance to the channel may be changed without notice.

Santo Domingo (18°28'N., 69°53'W.)

World Port Index No. 11040

7.43 The port of Santo Domingo, the principal port of the Dominican Republic, lies at the mouth of the Rio Ozama, which flows into the head of Bahia Santo Domingo.

West of the river, the coast is low and rocky, with foothills rising 4 or 5 miles inland. East of the river, a coastal plain extends for 15 or 20 miles. The city is the capital of the Dominican Republic.

Winds—Weather.—Strong onshore winds can cause a rise in sea level considerably above the normal in Bahia Santo Domingo.

It is advisable to put to sea rather than attempt to anchor in the river when the weather is threatening.

A heavy sea is liable to cause the anchor to drag, especially if anchored W of the meridian of the signal station.

During the hurricane season, especially after June, vessels must be prepared to leave the anchorage should the trade winds diminish, and a steady wind from NNW or NNE be felt.

Tides—Currents.—The mean spring range here is less than 0.2m. Currents in the river average about 1.5 knots; however, during the rainy season the current is reported to reach a rate of 8 knots.

The Rio Ozama creates a counterclockwise gyre within the harbor.

Depth—Limitations.—The entrance channel to the river lies between two partially destroyed breakwaters.

The submerged portions extend about 127m from the E head, and about 0.2 mile from the W head. Caution is advised as the chart shows the dangers to be unmarked.

Another breakwater extends from the W shore, about 0.1 mile N of the W breakwater's root. A spit, which breaks in heavy weather, extends about 0.1 mile SSW of Ponta Torrecilla.

The entrance channel has been dredged to a depth of 10.6m, but the channel is subject to change, especially in the rainy season. The fairway was reported to have a depth of 8.5m. Above the entrance, the river shows charted depths of 2.1 to 10.6m. Two bridges span the channel, each with maximum vertical clearance of 32.5m.

An overhead power cable, with a vertical clearance of 32m, extends across the river, about half way between the bridges.

Santo Domingo Inner Harbor (rom SE

Santo Domingo Light

Another bridge, with a vertical clearance of 28.5m, lies about 3 miles above the E breakwater.

The W bank of the river has nearly 0.7 mile of wharves, with depths of 5.5 to 10.3m. A tanker berth is situated on the W bank, and another is situated along the inner side of the E breakwater.

The maximum draft for tank vessels is reported to be 9.6m. Cargo vessels are reported to be restricted to drafts of 7.9m if fitted with long booms, or 7.3m with short booms. For berthing refer to the table titled **Santo Domingo—Berth Information**.

Aspect.—The objects listed below are conspicuous from seaward; their positions are given relative to Punta Torrecilla:

1. A tank painted red and white checkerboard,—5.5 miles ENE.
2. A white obelisk—1 mile W.
3. A monument—about 0.7 mile WNW.
4. A large statue—bearing 302°, distant 0.6 mile.
5. A flagstaff—0.4 mile NNE.

Santo Domingo Light, a tower painted with black and orange diagonal stripes stand on the point and is also conspicuous from seaward.

Pilotage.—Pilotage is compulsory and should be ordered through the vessel's agent at least 72 hours in advance, confirming 24 hours prior to arrival. The pilot boards from a small blue launch, 1 to 1.5 miles S of the breakwater. The port may be entered from 1000 to 0300 daily. It is reported (2010) that port entry can be modified to anytime during the day with prior communication and planning. A signal station, from which storm signals are displayed, is located about 0.6 mile NW of Santo Domingo Light.

Santo Domingo—Berth Information

Berth	Length	LOA	Depth	Maximum Draft	Remarks
Santo Dominigo Terminal					
No. 1	123m	—	10.0m	8.2m	General cargo and containers.
No. 2	280m	—	10.0m	8.2m	General cargo and containers.
No. 3 (Ferry Berth)	75m	—	—	7.3m	Breakbulk cargo and containers.
No. 4	167m	—	—	7.3m	General cargo and breakbulk.
No. 5	98m	—	—	—	General cargo and asphalt/bitumen.
No. 6	225m	—	—	—	General cargo and asphalt/bitumen.
Don Diego Terminal					
Don Diego (Tourist Terminal)	396m	360m	8.2-9.7m	—	Cruise vessels.
Other Berths					
Naval Pier	350m	—	—	—	Naval vessels.
M&D Repairs	15m	—	5.0-7.3m	—	Lay up pier.
Sans Souci Passenger Terminal	300m	—	—	8.5m	Being converted from breakbulk and container to passengers.

Santo Domingo—Berth Information					
Berth	Length	LOA	Depth	Maximum Draft	Remarks
Metales Antillanos	—	130m	3.5m	—	Scrap metal.
San Souci Liquid Bulk Berth (Punta Torrecilla)	269m	360m	10.0m	9.8m	Access to this area is restricted due to the Dominican Naval Base located at the eastern tip.
Molinas Dominicanos (private)	123m	220m	8.8m	8.2m	Bulk cargo.
Pronalba Bulk Cargo Berth (private)	122m	—	—	4.8m	Located about 2 miles from port entrance. Dry and liquid bulk cargo, tallow, caustic soda, and liquid fat. Vessels with a maximum loa of 121m can be accommodated.
Granja Mora Bulk Cargo Berth (private)	130m	—	—	4.8m	Located about 1 mile from port entrance.
Agrotech Bulk Cargo Berth (private)	10m	—	—	3.6m	Located about 4 miles from port entrance. This berth is not used often due to draft restrictions and difficulty of access.

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

1. Call sign: Agua Marina Primera
2. VHF: VHF channels 12 and 16
3. RT Frequency: 2128, 2638, and 2738 kHz

The port can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. RT Frequency: 2128 kHz, 2638 kHz, and 2738 kHz
3. Telephone: 1-809-687-4772
4. Facsimile: 1-809-687-2661

Anchorage.—A charted anchorage area is centered about 0.5 mile WSW of Santo Domingo Light. The area shows depths of 12.5 to 16.1m, with the bottom quality unknown. Vessels anchoring in the river do so N of the signal station. If anchoring on the E side of the channel, vessels should do so with both head and stern anchors out, and with lines run to the shore; the object is to haul the vessel out of the channel.

Directions.—Range lights, aligned 047°, mark the entrance channel, but are moved to meet the changes in the channel;

Caution.—Vessels are urged to contact the local authorities and the pilot for the latest information on the approach channels, depths, berths, anchorages, etc. before planning a voyage here.

South Coast—Santo Domingo to the Rio Macoris

7.44 Andres (Boca Chica) (18°26'N., 69°38'W.) (World Port Index No. 11035), a small community with a deep-water port, lies about 15 miles E of Santo Domingo.

The port stands at the head of a small bay which is quite unencumbered for the most part. It handles ro-ro and container traffic.

The port consists of a basin 0.2 mile long and 0.1 mile wide with wharves on its NW and NE sides, and protected on its SW side by a reef which has been reinforced to form a breakwater. This basin, entered by a channel through the W part of the reef, is located in the NW part of the bay.

The village of Andres has a sugar factory, with a conspicuous chimney, marked by a red obstruction light, with the name BOCA CHICA painted prominently on it.

A radio mast, also marked by a red obstruction light, stands about 0.5 mile SSW of the chimney.

Each light is exhibited from a metal tower. The channel is marked by buoys on each side. The channel was reported dredged to 10.7m.

A 1.8m patch lies close NNE of the front leading beacon.

An LNG terminal is situated about 2.25 miles S of Andres on Cabo Caucedo. It consists of a T-shaped jetty with dolphins having a depth alongside of 12.9m, and a 129m long catwalk that runs to shore.

The pilot for this terminal is ordered by the ship's agent and is boarded from a tug about 3 miles SSE of Cabo Caucedo, as seen on the chart.

Pilotage.—Pilotage is compulsory. Pilots and officials board 1 mile outside the harbor entrance. The port is under the jurisdiction of the Commander of the Port, Santo Domingo. Vessels should radio on VHF Ch 16 their ETA 24 hours and 12 hours prior to arrival. Vessels can enter and leave only during daylight hours. There are no tugs.

Anchorage.—The recommended anchorage is located at the charted area off Santo Domingo. Anchoring by foreign vessels within the territorial waters of the Dominican Republic is permitted only in designated charted areas. Authorization must be obtained from Port Authorities or the Dominican Republic Navy to anchor elsewhere. Vessels anchoring without the required permission risk substantial fines.

7.45 San Pedro de Macoris (18°27'N., 69°19'W.) (World Port Index No. 11030) lies on the E bank of the mouth of the Rio Macoris, and is one of the largest exporting ports in the Dominican Republic.

The greater part of the river is encumbered with shoals, and the channel silts up and requires dredging from time to time.

The channel shows charted depths of 6.1 to 9.4m; however, it

has been reported that the largest vessel accommodated is 198m long with a 7.9m draft.

Depths—Limitations.— For berthing refer to table titled **San Pedro de Macoris—Berth Information**.

Pilotage.—Pilotage is compulsory. The pilot boards 0.5 mile seaward of the outermost buoy.

Entry is recommended before 1100, as there is decreased swell in the channel entrance. The pilot (call sign: HIW19) can be contacted on VHF channel 16.

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

1. VHF: VHF channel 16
2. RT Frequency: 2738 kHz
3. Telephone: 1-809-529-2093
4. Facsimile: 1-809-529-2069

Anchorage.—The recommended anchorage is about 0.5 mile S of Punta Pescadero, which shows a light.

Anchorage inside the river is available, but limited by depth and swinging room.

South Coast—The Rio Macoris to La Romana

7.46 Between the Rio Macoris and La Romana, about 20 miles E, the coast continues low and flat. It is faced for much of its length by a low escarpment interrupted here and there by sandy beaches, usually at river entrances.

Inland, the terrain is extensively planted in sugar cane and grown over with scattered stands of trees.

The **Rio Soco** (18°28'N., 69°12'W.) enters the sea about 6 miles E of the Rio Macoris. The river is obstructed by a shallow bar and is only available for boats.

A vessel with local knowledge may obtain anchorage, in a depth of 9.1m, with the mouth of the river bearing between 011° and 022°, but is exposed to the trade winds.

Small vessels may anchor closer inshore.

Isla Catalina (18°21'N., 69°00'W.) lies about 11.5 miles ESE of the mouth of the Rio Soco and about 4 miles SW of the entrance to the Rio Romana. The island is covered with trees and scrub, and its N part is low and flat. A light is shown from the SE tip of the island at Punta Berroa.

The channel between the island and the mainland can be used by vessels with local knowledge. Fairly good anchorage, in depths from 6.4 to 21.9m, may be obtained off the NW side of the island.

7.47 La Romana (18°25'N., 68°57'W.) (World Port Index No. 11020) lies at the mouth of the Rio Dulce. The shore on either side of the entrance is fringed by shoal water.

Depths—Limitations.—The entrance channel and dock are dredged to a depth of 8.5m; the maximum length of the dock is 182.8m. Maximum draft is strictly enforced by the pilot and other authorities, as obstructing the entrance channel is dangerous.

Central Romana Wharf is situated on the W side of the river, close within the entrance. It has a length of 220m and a depth alongside of 8.5m.

By day, vessels are turned before berthing at this wharf; at night, vessels proceed straight alongside and when leaving are towed out of the harbor by a tug.

The Government Wharf, on the same side of the river but farther N, has depths of 3.3 to 4.3m alongside.

The cruise ship wharf is situated on the E side of the river and has a length of 256m and a reported depth alongside of 9.5m.

Aspect.—A sugar mill on the W side of the river is a conspicuous mark at night, at which time its lights are reported visible for a distance of 20 miles.

A light is shown on the E side of the entrance to the river.

Pilotage.—Pilotage is compulsory. Request for pilots should be made at least 24 hours before arrival at the pilot boarding area. Pilots meet vessels 1.5 to 2 miles off the mouth of the river in a small white motor boat with “LP 24” displayed on each side.

Pilotage is available during daylight hours only. The signal for a pilot is three long blasts. Pilots may be reached on VHF channel 16 (call sign: HIW9) or by radiotelephone on 2182 kHz, 2638 kHz, or 2738 kHz.

San Pedro de Macoris—Berth Information

Berth	Length	LOA	Depth	Maximum Draft	Remarks
No. 1	260m	185m	—	7.0m	Sugar, molasses and discharging petroleum. A floating dry dock occupies 100 to 150m of the berth, Also used by Dominican naval vessels and other equipment.
No. 2	183m	183m	—	7.6m	Export of molasses and the discharging of bulk clinker and coal.
No. 3 (Ferquido)	262m	168m	—	6.7m	General cargo and fertilizer.
Tanker Berths					
Coastal CBM	—	227m	14.0m	12.5m	LPG. Can accommodate vessels of up 72,000 dwt with a beam of 32m.
Cogentrix CBM	125m	—	14.5m	12m	Petroleum products.
Sunta Del Este Power	191m	183m	7.0m	—	Clean products.

Anchorage.—A vessel may anchor in mid-stream, in a depth of 10.7m, abreast Central Romana Wharf or, in a depth of 7m, abreast the Government Wharf, but it may be necessary to lay out hawsers to the shore because of the narrowness of the channel. There are mooring posts on both sides of the harbor and mooring rings on the E side opposite Central Romana Wharf.

There is a sheltered anchorage for small craft in a bight on the E side of the river about 0.1 mile within the entrance, in a depth of about 4.9m.

Caution.—Vessels are urged to contact the local authorities and the pilot for the latest information concerning this port and the channel leading to it before planning a voyage here.

Extreme care should be exercised when approaching the river entrance as the channel is extremely narrow and cross-currents are present. Large vessels may be obliged to leave the channel stern first.

The spit extending SE from the W side of the entrance is poorly marked.

South Coast—La Romana to Cabo Engano

7.48 The gentle arc of the coast between La Romana and Punta Palmilla, about 17 miles SE, is faced by a coral escarpment, and continued inland by a gentle wooded slope that rises to an interior plateau.

There are a number of small coves, with sandy beaches, where landings can be effected.

The **Rio Chavon** (Rio Quiabon) (18°24'N., 68°54'W.), the mouth of which lies about 3.5 miles ESE of La Romana, has excellent anchorage, in 16.5m, off the river entrance, with nearby Punta Minas in range bearing 287° with Punta Aquila.

A 4.1m shoal has been reported in this vicinity. Anchorage may be obtained almost anywhere between Punta Palmilla and Bayahibe, 11 miles NW.

7.49 **Isla Soana** (18°09'N., 68°40'W.), the largest island off the coast of the Dominican Republic, lies about 17 miles SE of La Romana. The island is quite low and wooded, and rather difficult to make out, particularly at night.

The S side is foul for the most part, largely without anchorage and frequently visited by strong currents. The island is reported to lie about 2.2 miles ESE of its charted position.

A light (reported extinguished) is shown on Punta Cana, the SE extremity of the island.

A light (reported extinguished) is shown on Punta Laguna, the SW extremity of the island.

Good anchorage, well sheltered from E winds, may be obtained, in depths of 8.2 to 9.1m, W of Punta Catuano, the NW extremity of the island.

Caution is advised as an area with depths of less than 20m extends about 5 miles SE, 3.5 miles S, and 7 miles W of Punta Cana. Breakers are also present in the area.

Bahia Catalinita (18°11'N., 68°41'W.) lies between Isla Saona and the mainland. The bay is shallow except for a narrow channel through its S part, which is available for vessels of not more than 3.7m draft. The E end of the bay is nearly closed by a reef that extends 2.7 miles SE from Punta Algive.

Isla Catalinita, covered with vegetation and a few trees, is located on the middle of the above reef. A stranded wreck lies on the SE side of Isla Catalinita.

Bahia Yuma (18°21'N., 68°35'W.), a small deep-water bay, lies about 9 miles N of Punta Algive. Cabo Falso, the W entrance point of the bay, is conspicuous from the S.

A light is shown from the head of the bay.

Anchorage is available, in 22m, good holding ground, 0.5 mile off the mouth of the Rio Yuma at the head of the bay. A conspicuous notch in the hills at the head of the bay is a useful mark when approaching the anchorage.

Between Bahia Yuma and Cabo Engano the coast is low and thickly wooded. There are high bluffs some distance inland, which from a distance of 9 or 10 miles appear to be part of the coast. Punta Espada was reported to be a good radar target up to 18 miles.

7.50 **Cabo Engano** (18°37'N., 68°20'W.), the E extremity of Hispaniola, is a low, long, wooded point. Two small hills near the cape are conspicuous from the ENE for a distance of 18 miles. The light is reported to be a good radar target for about 15 miles. A conspicuous light was reported 4.5 miles SSW of Cabo Engano Light near Punta Borrachon.

Reefs, marked by breakers, extend 0.5 mile NE from the cape, and caution is necessary when approaching it, as a strong W set is often experienced off the coast in this vicinity.

A bank, with depths of less than 200m, and having a depth of 51m near its outer edge, extends 23 miles ESE from Cabo Engano. There is a heavy swell over the bank and strong tide rips along its edge, caused by the current and tidal streams, mark its position.

A number of stranded wrecks lie in the vicinity of Cabo Engano. A stranded wreck, which is conspicuous both visually and on radar, lies 11 miles NW of Cabo Engano.

For a description of Mona Passage (Canal de la Mona) lying E of Hispaniola, see U.S. Coast Pilot No. 5.

North Coast—Cabo Engano to Bahia de Samana

7.51 Between Cabo Engano and Punta Mangle, in the entrance to Bahia de Samana, about 54 miles NW, the coast is commonly low-lying close inland and largely wooded. This part of the coastline is fringed by a narrow margin of sunken and awash dangers. There are no really safe anchorages along this stretch of coast.

From November to April, the trade winds blow strongly from the E.

Puerto Macao (18°47'N., 68°32'W.), small bay, lies 15 miles NW of Cabo Engano. There is anchorage for vessels with local knowledge both inside and outside the coastal reef. There is no opening or safe anchorage between Puerto Macao and Cabo Rafael, 26 miles NW. Shoaling has been reported about 4 miles E of Punta Macao. A light is shown on Punta Nisibon, 10 miles ESE of Cabo Rafael.

North Coast—Bahia de Samana

7.52 **Bahia de Samana** (19°10'N., 69°25'W.) is entered between Punta Mangle and Punta Balandra, 9.5 miles NNW. Surveys have shown considerable changes in the depths in the entrance to the bay; caution is necessary when navigating in this area.

The buoyage has been substantially altered: several buoys are reported missing and the charted positions of others are unreliable.

The outer half of the bay is encumbered with shoals, the position of which can best be seen on the chart. There are several deep and tortuous passages through these reefs, but none is suitable for navigation.

The only safe channel into the bay is close to its N shore, N of Cayos Levantado, which has a least draft of 11m and may be followed to Sanchez at the head of the bay.

The channel is marked by buoys.

Tides—Currents.—An outward set of 1.5 to 3 knots may be experienced in the rainy season.

Pilotage.—Pilotage is compulsory. Send ETA and request for a pilot through the agent. The pilot boards at the seaward end of the entrance channel as shown on the chart. It is recommended not to enter the bay at night.

Anchorage.—Vessels may anchor between Cayos Levantado and Punta Balandra. This anchorage is somewhat sheltered from N winds, but the swell makes the berth uncomfortable for small vessels. Anchorage may be obtained by vessels with local knowledge, between Punta de las Flechas and Cayo Chico, or in the W part of Bahia Carenero, which is used mainly by small vessels.

Santa Barbara de Samana (Samana)

7.53 Santa Barbara de Samana (Samana) (19°12'N., 69°20'W.) (World Port Index No. 11000) is known by several other names: Puerto Duarte, Puerto Batadero, El Batadero, and Arroyo Barril. The port is mainly used as a passenger terminal, but can handle cargo, containers, cement and break bulk. It consists of one finger pier with a small, modern passenger terminal. The pier is known as the Arroyo Barril Berth and is 230m in length and can accomodate vessels up to 198m in length on either side. The depth on the W side is 9.1 and on the E side is 8.5m. An access ramp connecting the pier to the shore is 350m in length. Pilotage is compulsory. Pilots board just outside the harbor entrance. Anchorage may be obtained at the head of the port, in a depth of 7.3m. The holding ground is good, but space is restricted.

Puerto Botado (19°12'N., 69°27'W.) lies about 2.5 miles WNW of Punta de los Corozos.

7.54 Sanchez (19°14'N., 69°37'W.) (World Port Index No. 11010) lies in the NW corner of Bahia de Samana, about 10 miles W of Puerto Botado.

Pilotage is not compulsory, but is available. A light is shown on the head of a pier, near the SW part of Sanchez.

Good anchorage may be obtained 0.7 mile S of the town, in a depth of 12.8m, with Punta Gorda bearing 078° and the pier bearing about 331°, good holding ground clear of the charted submarine cable.

Anchorage is safe for vessels up to a 9.1m draft. Cargo is handled by lighters at the anchorage.

North Coast—Bahia de Samana to Puerto Plata

7.55 Cabo Samana (19°18'N., 69°09'W.) lies 8.5 miles NNE of Punta Balandra and forms the E extremity of the Peninsula de Samana. A light is shown on the NE side of the cape.

The coast between Cabo Samana and Punta Balandra is bold and rocky. A small reef, marked by breakers, extends a short distance N from Cabo Samana.

Bahia de Rincon (19°18'N., 69°11'W.) is entered between Cabo Samana and Cabo Cabron, 5 miles NW. The bay is exposed to the NE and is of no value to shipping. A group of above-water rocks lie in the middle of the bay. Cabo Cabron terminates in a conspicuous white cliff. A conical peak lies 4 miles to the SW.

Bahia Escocesa (19°25'N., 69°35'W.), lying between Cabo Cabron and Cabo Frances Viejo, 45 miles NW, is a wide coastal indentation or bight without any natural shelter against prevailing trade winds. The coast between Cabo Cabron and Puerto Jackson, 25 miles WSW, is fringed with reefs, the outer limits of which have not been determined and should not be approached within 3 miles.

Cabo Frances Viejo (19°40'N., 69°56'W.) is a broad headland, which is faced by a broken series of cliffs and sandy beaches and backed by the gradually rising slopes of a mountain spur; it is reported visible on a clear day at about 30 miles. A lofty mountain, which rises 20 miles SSW of the cape, is prominent. The cape is marked by a light reported extinguished in 1991.

Caution.—Caution is necessary when in the vicinity of the cape. A violent submarine disturbance was observed (1946) about 2.5 miles NE of the light. It may have caused a change in the sea floor in the surrounding area.

7.56 Bahia Cabarete (19°45'N., 70°24'W.) lies 27 miles WNW of Cabo Frances Viejo. The bay is protected by reefs to the E and W; both are marked by breakers. The entrance is not marked and local knowledge is necessary.

The depths in the anchorage are from 6.4 to 7.3m and the holding ground is poor.

Puerto Sosua (19°46'N., 70°31'W.) (World Port Index No. 10990) lies about 6 miles W of Bahia Cabarete. The port is situated in a bight on the W side of Cabo Macoris.

It is exposed to N winds, but small vessels with local knowl-

Puerto Plata (Aerial view)

edge anchor on the N side, in a depth of 36.6m, mud, with good shelter from E and NE winds. There are depths of 0.9m alongside a pier on the N side of the bight.

There are two mooring buoys, N of a reef, that lies in the center of the bight. An aero light stands about 2.5 miles W of Puerto Sosua.

Puerto Plata (19°48'N., 70°42'W.)

World Port Index No. 10980

7.57 Puerto Plata is about 10 miles WNW of Puerto Sosua, and is entered between Punta Fortaleza and Punta Cafemba.

Winds—Weather.—Winds out of the NE predominate in spring and summer, and out of the ENE in winter.

Winds out of the N are rare, but high swells from the N and NE are common between October and May.

Tides—Currents.—Ocean currents generally set W. Tidal currents are negligible. River discharge into Puerto Plata during the rainy season can establish a significant current, which at times extends as far as 0.5 mile to sea.

Depths—Limitations.—A least depth of 10.3m was reported over the bar close W of Punta Fortaleza, with a depth of 9 to 10.6m in the harbor. However, the harbor is liable to silting and outside the limits of the buoyed area it is very shallow.

A least depth of 10.3m was reported over the bar close W of Punta Fortaleza, with a depth of 9 to 10.6m in the harbor. However, the harbor is liable to silting and outside the limits of the buoyed area it is very shallow.

Owen Rock, 7.2m high, is located on the outer edge of the foul ground N of Punta Cafemba. An isolated 10m patch lies about 0.3 mile SE of the rock. For berthing information refer to the **Puerto Plata—Berth Information** Table.

Aspect.—Pico Isabela de Torres stands about 2 miles S of the port and is prominent with a large white patch on it. Four or 5 miles W of the patch are a number of sugarloaf peaks.

Puerto Plata—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
New Pier					
No. 1	300m	9.4m	213m	8.8m	Break bulk and cruise vessels. Berth is on the E side of the new finger pier. Two or more vessels may occupy this berth at the same time.
No. 2	300m	8.5m	182m	7.3m	Containers and ro-ro vessels. The berth located on the W side of the new 44m-wide finger pier. Depths alongside become shallower moving away from the pier, with depths of 4.2 to 4.5m lying about 30.4m from the pier. Two or more vessels, including container ships, may occupy this berth, depending on their length.

Puerto Plata—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
No. 3	75m	7.9m	76.2m	7.3m	Located at the tip of the new finger pier.
Old Pier					
No. 1	110m	7.6m	152m	—	The pier is in poor structural condition and is not presently being used except as a lay berth
No. 2	110m	8.5m	137m	—	The berth is rarely used except by tankers discharging fuel and diesel oil for the local utility company or as a lay berth
Other Berth					
GSF Power CBM	130m	9.5m	122m	9.0m	Tankers and LPG carriers. Beam 22.8m
Note—Vessels are sometimes forced to shift to another berth within the port of anchorage giving preference to another vessel.					

A light is shown from a position 0.1 mile SE of Punta Fortaleza.

Range lights stand at the head of the bay and, when in line bearing 218°, lead through the entrance channel.

A cable railway, marked by lights, runs to the summit, on which there is a conspicuous monument.

Owen Rock near Puerto Plata

A conspicuous white obelisk, 15m high, stands 0.7 mile SE of Fuerte de San Felipe. Three radio masts, from which obstruction lights are exhibited, stand 1.5 miles SE, 2 miles ESE, and 3 miles ESE, respectively, of Punta Fortaleza. A conspicuous chimney stands about 0.2 mile SE of Punta Fortaleza.

A stranded wreck, lying 0.3 mile NNW of Punta Fortaleza, provides a good landmark.

Shoal patches of 1.8 to 3m lie about 0.2 mile NNE and 0.1 mile NW of Punta Fortaleza.

A pipeline is reported (2008) to lie in an E-W position between Punta Cafemba and Punta Fortaleza.

Pilotage.—The pilot boards 0.5 mile from the sea buoy. No entry or departure at night is permitted. The pilot boat is black and flies a blue flag with a white "P."

Pica Isabela de Torres (Fuerte de San Felipe-forground)

Puerto Plata Light (left of center)

Puerto Plata Front Range Light

Stranded wreck near Buoy R4 and Punta Fortaleza

The pilot (call sign: HIW8) can be contacted on 2738 kHz or VHF channels 12 and 16.

Anchorage.—Vessels anchor outside the port, in about 22m, in an unsheltered position, with Punta Fortaleza light bearing 180° and Owen Rock bearing 281°. They also anchor, in 8.5m, good holding ground, about midway between Puerto Plata E and W entrance points; however, there is generally a swell here. Pilots will advise as to the best anchorages.

Caution.—Depths inside the port may be less than charted because of silting. Punta Fortaleza Light is apparently displayed at random. The entrance range beacons are difficult to make out because of untended vegetation in this area.

Stowaway watches should be vigilant and incidents reported to the authorities.

North Coast—Puerto Plata to Monte Cristi

7.58 Punta Patilla (19°54'N., 70°50'W.), 10 miles NW of Puerto Plata, is long and low, sloping gradually to its extremity, which is marked by a prominent hummock.

A reef extends 0.5 mile from a point 1 mile W of Punta Patilla. A light is shown on the point.

Puerto Cambiaso is situated 2.5 miles W of Punta Patilla.

Cabo Isabela (19°56'N., 71°01'W.) lies about 10 miles W of Punta Patilla and is considered the N extremity of Hispaniola. It is broad, hilly, and thickly wooded headland and has the appearance of an island when viewed from the W. A coastal reef extends 0.6 mile seaward from the NW side of the cape.

Bahia Isabela (19°53'N., 71°07'W.), W of Cabo Isabela and fronting on the Rio Bajabonico, has anchorage, in 8.2m, good holding ground of sand and mud, with Punta Debhora bearing 048°, distant about 1.5 miles.

The anchorage is well-sheltered from prevailing E winds, but open to the N and W. Caution is necessary because of sunken rocks and an irregular bottom.

The coast between the W side of Bahia Isabela and Punta Mangle, 16 miles W, forms a bay which is encumbered with numerous shoals and reefs that extend offshore for a distance of about 2.5 miles in places.

This area should be avoided by vessels without local knowledge.

7.59 Punta de la Granja (19°53'N., 71°39'W.) lies 9 miles W of Punta Mangle and shows a light. The point is a bold headland on which the prominent hill of El Morro de Monte Cristi rises to an elevation of 251m. The flattened summit of the hill gives a distinctive appearance, and is a good landmark when approaching from the W.

A light is exhibited from a white metal tower on a square base near Punta Granja.

Bahia Jicaquito (19°54'N., 71°38'W.), located immediately E of Punta de la Granja, is shallow. A spit, with depths of less than 5.5m and on which the sea always breaks, extends 1.5 miles NW from its E entrance point.

Anchorage may be obtained between Punta de la Granja and the spit, in a depth of about 8.2m.

7.60 Bahia de Monte Cristi (19°53'N., 71°40'W.) is an indentation in the coast between the W end of Punta de la Granja and the mouth of the Rio Yaque del Norte, 2.7 miles SSW. Isla Cabra, which shows a light, lies near the N entrance point of the bay. The head of the bay is encumbered with shoals, for which the chart is the best guide. Pilotage is compulsory. Pilots board vessels N of Isla Cabra.

Anchorage may be obtained, in a depth of 11m, with the town clock tower in line with a small house at the root of the town jetty bearing 147°, and the W extremity of Isla Cabra bearing 035°.

Monte Cristi (19°52'N., 71°39'W.) (World Port Index No. 10970) is a small community and local administrative center lying about 1 mile inland from the head of Bahia de Monte Cristi. It is joined by a causeway that passes over a region commonly flooded after heavy rain or HW.

7.61 Off-lying dangers.—Banco de Monte Cristi (19°58'N., 71°45'W.), with depths of less than 200m, extends from 1 to 13 miles off the coast between Punta Rucia and Punta Manzanillo, 11 miles SW of Punta de la Granja. Its outer edges are very steep and the depths uneven.

Caution should be exercised when passing over any part of the bank, as uncharted shoals may exist. When navigating this part of the coast, a vessel not calling at Monte Cristi should pass well N of the bank.

Bancos Granja (20°01'N., 71°36'W.), with depths of less than 18.3m, lie near the outer edge of Banco de Monte Cristi, 7 miles NNE of Punta de la Granjo. Bajo de Monte Cristi, with least depth of 11m, lies 8.5 miles NW of Punta de la Granjo.

Liverpool Shoal, with least depth of 4.6m, lies about 3 miles NW of Punta de la Granja. There are a number of shoal heads within a distance of 0.7 mile of this shoal.

Phaeton Shoal (19°56'N., 71°41'W.), with a least depth of 5.9m, lies 2.5 miles NW of Punta de la Granja, close SE of Liverpool Shoal. Saxonia Shoal, with a least depth of 5.5m, lies 6.5 miles WNW of Punta de la Granja.

Siete Hermanos (19°53'N., 71°47'W.) are a number of low cays, most of which are overgrown with mangroves, and lie on the SW part of Banco de Monte Cristi.

Cayo Arenas, which shows a light, lies to the W of Siete Hermanos.

North Coast—Monte Cristi to Cap Haitien

7.62 Bahia de Manzanillo (19°45'N., 71°46'W.) lies about 5 miles SSW of Bahia de Monte Cristi and is entered between Punta Manzanillo and the mouth of the Riviere du Massacre, 3.5 miles S.

The land around the bay is low and fringed with mangroves. Good anchorage may be obtained in the bight E of Congress Point, the SE end of Punta Manzanillo, in depths of 10 to 13m, mud. There is reported to be good anchorage with the pier head bearing 160°, distant 2.5 miles.

7.63 Pepillo Salcedo (Puerto Manzanillo) (19°43'N., 71°45'W.) (World Port Index No. 10960) lies on the S side of Bahia de Manzanillo and close E of the mouth of the Riviere du Massacre.

Depths—Limitations.—The port consists of one concrete finger pier about 228m long with a water depth about 11.5m at the end of the pier and 6.1m near the land. Facilities have been steadily deteriorating to the point that the concrete pier has several holes and cracks. The port is not frequently used by commercial cargo vessels, but fruit is still exported in small quantities. The pier is reported to be a good radar target up to 15 miles.

Pilotage.—Pilotage is provided by Puerto Plata and is compulsory. The pilot can be contacted on 2738 and 2182 kHz as well as VHF channels 12 and 16. The pilot boards about 1 mile N of the pierhead. The prevailing winds are from the E, and they sometimes interfere with going alongside or leaving the pier.

A light is shown on the end of the pier. A water tank, 0.7 mile SW of the pier, and two oil tanks, 0.3 mile SE of the pier, are good landmarks.

The mouth of the Riviere du Massacre is the N end of the boundary between the Dominican Republic and the Republic of Haiti.

7.64 Baie de Fort Liberte (19°42'N., 71°51'W.) is a landlocked basin, 5 miles long E to W, and 1 mile wide. The entrance to the bay lies about 6 miles W of the pier in Puerto Manzanillo.

The entrance to the bay, which has a depth of 23.8m, is narrow and a little more than 137m wide at its N end. The best time to enter the bay is in the morning before the sea breeze sets in.

Two hills, located 0.5 mile apart, 3.5 miles W of the entrance, are conspicuous above the low-lying land between them and the sea, and form an excellent landmark. The entrance can be distinguished from the N by a break in an otherwise white sandy beach. The entrance can be seen on radar from about 8 miles.

A pier is situated 0.1 mile N of Pointe Brisson, on the W side of the entrance channel. Several mooring buoys lie within 0.1 mile S of the pierhead. Some tanks stand on the W side of the entrance channel close to the root of the pier.

Pilotage is compulsory. Vessels embark pilots in a position about one mile seaward of the entrance. The bay is entered only during daylight hours.

Vessels must use caution because of the sharp turns in the entrance fairway, however; a modern vessel of moderate dimensions and power should have little difficulty in navigating the entrance channel.

7.65 Fort Liberte (19°41'N., 71°50'W.) lies on the S side of Baie de Fort Liberte. Cargo is loaded from lighters to vessels at anchor, particularly bales of sisal. A berth is available 0.3 to 0.6 mile E of Ile Bayau, in a depth of 21.9m. However, the port was reported closed to shipping.

Anchorage within the bay may be taken in several positions; the holding ground is reported to be excellent.

Anchorage is also taken in Mouillage Bradford, NW of Ilot Bayau, in a depth of 20.1m. Anchorage may also be obtained 0.3 mile ENE of the ruins of Fort Liberte, in a depth of about 16.5m, but care is necessary because of the nearby shoals.

The coast between Baie de Fort Liberte entrance and Pointe Jacquezy, about 8 miles W, is low with a sandy beach, fringed with reefs, and backed by mangroves.

At Pointe Jacquezy, the coast recedes S and forms the E side of Baie Caracol.

Passe Caracol leads through the barrier reef and into Baie Caracol. This pass is narrow and intricate, with a least depth of 24m in the fairway. A channel, marked by buoys and beacons, leads through Passe Caracol, to an anchorage in Baie Caracol.

Cap-Haitien (19°46'N., 72°12'W.)

World Port Index No. 10930

7.66 Cap-Haitien, a peninsula-like formation, lies 10 miles W of Passe Caracol. The port is situated on the E side of Cap-Haitien, which forms the W side of Baie du Cap-Haitien.

The port is protected from the E by sand banks and extensive reefs on which the sea usually breaks, and from the N by the shoals in the center and outer part of the port.

The depth at the entrance is 36.6m. The depth on the bar is 3.6m; the depth in the harbor is 17.6m. Depths in the port are sufficient to accommodate large vessels.

Winds—Weather.—A land breeze commonly blows all night while a sea breeze regularly blows by day. Winds out of

Cap-Haitian from W

the N cause a sea within Baie du Cap-Haitien.

Northeast winds may reach force 6 by afternoon, causing a vessel wishing to leave the pier much trouble.

Tides—Currents.—Currents are commonly W. An E set sometimes occurs, particularly after several days of N to NW winds, and trends onto Cap-Haitien. A river at the head of the bay discharges a current of up to 4 knots during the rainy season.

Depths—Limitations.—New berthing facilities have recently been constructed, providing a berth 176m long reserved for cruise ships, with a depth alongside of 10.5m.

Cargo vessels have a berthing space of 250m with a draft of 9.5m, this being an extension of the existing pier.

An area at the end of the port basin has been reserved for local trading and coastal shipping with a berth length of 100m and a depth alongside of 3.5m.

Aspect.—When approaching the port from the N, three prominent peaked hills can be seen some distance S of the port.

The extensive ruins of a castle stand on the summit of one of the hills. The cathedral has a prominent roof. A number of landmarks can best be seen on the chart.

Pilotage.—Pilotage is compulsory for merchant vessels and should be ordered through the port captain's office at least 48 hours prior to arrival. The message should also include the vessel's particulars, requirements, and cargo details.

Vessels embark the pilot about 1 mile NNE of Pointe Picolet. The pilot can be contacted on VHF channel 16.

The day signal for pilot is one blast on the whistle and at night three flashes from a white light.

Directions.—Approach from the W until the new Picolet Light bears 130° to 190°. From the E, having passed Monti Christi shoal, stand to the W until the highest part of Haut du Cap bears 225°, and steer towards it.

When Picolet Point Light is sighted, stand in for the entrance. When the N extremity of Cap Haiten bears 270°, the vessel will be abreast the N end of the reef. Buoys and beacons marks the entrance channel and the anchorage area. The passage W of Le Grande Mouton and E of Mardi Gras reef via the buoyed channel is preferred. Passage E of Le Grande Mouton is not recommended.

Anchorage.—Anchorage is available throughout the inner part of Baie du Cap-Haitien, but the holding ground is poor.

Vessels anchor best in a position with Pointe Picolet bearing 353°, about 1 mile off. Two anchor berths, designated B and C, are best seen on the chart.

Old Picolet Light (inactive)

Caution.—A depth of 5.2m lies approximately 0.6 mile SSE of the pilot station and 0.8 mile NE of Picolet Point Light.

North Coast—Cap-Haitien to Cap du Mole

7.67 Baie de l'Acul (19°45'N., 72°20'W.) is entered between Pointe des Trois Maries and Pointe du Grand Boucan, 1 mile W. The bay lies about 7 miles WSW of Cap-Haitien.

The bay is well-protected by the shoals off its entrance, and affords excellent, sheltered anchorage for vessels of deep draft.

The seaward approach to the bay lies between Pointe Honorat and Pointe du Limbe, about 8 miles WNW. The intervening seaway is encumbered by sunken dangers, some of which break, and by several islets or above-water rocks which can best be seen on the chart.

Three channels through the reefs give access to Baie de l'Acul, namely Chenal de L'Est, Chenal du Milieu, and Chenal du Limbe, the principal channel. Chenal de L'Est should not be attempted unless the reefs can be seen from aloft. Chenal du Melieu is not recommended.

Good temporary anchorage may be obtained N of Pointe des Trois Maries, in depths of from 12.8 to 29.3m.

Excellent sheltered anchorage may be obtained in Anse de Lombard, in depths of 9.1 to 11m, or farther out, in depths of from 11 to 12.8m. Local knowledge is essential.

Baie Fond la Grange (19°52'N., 72°31'W.) lies about 7.5 miles WNW of Pointe du Limbe and is entered between East

Point and Pointe Palmiste, 0.5 mile W.

The shores of the bay are steep-to in most places. Good anchorage may be obtained in the middle of the bay, in depths of 11 to 13m, mud and sand bottom.

Baie de la Borgne (19°52'N., 72°32'W.) lies on the W side of Pointe Palmiste. The bay affords good anchorage for small vessels with local knowledge, in depths of 3.7 to 8.2m, but the bay is open to the N. A village stands at the head of the bay.

7.68 Port de Paix (19°57'N., 72°50'W.) lies on the mainland, 10 miles SE of the W extremity of Ile de la Tortue. Cargo operations are carried out by the usage of lighters to vessels at anchor. The port is open to the N winds which causes a heavy sea to enter the bay. Pilotage is compulsory. A pilot will come to a vessel in response to a signal.

Baie des Moustiques (19°56'N., 72°58'W.) lies 8 miles W of Port de Paix. It is a deep-water cove with a rocky uneven bottom. An islet lies on the W side of the cove and a sunken rock lies near the islet.

The best anchorage is in the middle of the cove, nearly abreast the sunken rock, in a depth of about 36.6m, but the area must be carefully checked before anchoring.

Baie du Port a l'Ecu lies about 4 miles W of Baie des Moustiques and offers the better anchorage.

The bay is sheltered from all but NW winds. It is somewhat encumbered by a sunken reef extending from its remarkable brown colored E entrance point, but elsewhere is clear.

A good anchorage is 0.25 mile S of the E point, in depths of 7.3 to 11m.

7.69 Pointe Jean Rabel (19°56'N., 73°10'W.), about 8 miles W of Baie du Port a l'Ecu, is low and bush-covered. The point is conspicuous from offshore. The coast consists of a succession of bold rocky cliffs and sandy beaches, inland of which the country is mountainous and broken into distinct ridges. A village lies SW of Pointe Jean Rabel.

The region between Pointe Jean Rabel and Cap du Mole is both inhospitable because of no shelter, and dangerous because of currents which set generally W and SW or at times NE and in each situation, shoreward.

Vessels are cautioned to stand well to sea when transiting this region, especially at night.

Cap du Mole (19°50'N., 73°25'W.) lies 15.5 miles SW of Pointe Jean Rabel. The cape is the SW extremity of a flat peninsula, connected to the mainland by a low isthmus, which forms the N side of Mole St. Nicolas. Tide rips have been experienced off the cape and the coast NE of it. The S coast of Hispaniola E of Cap du Mole is described in beginning in paragraph 7.4.

Ile de la Tortue

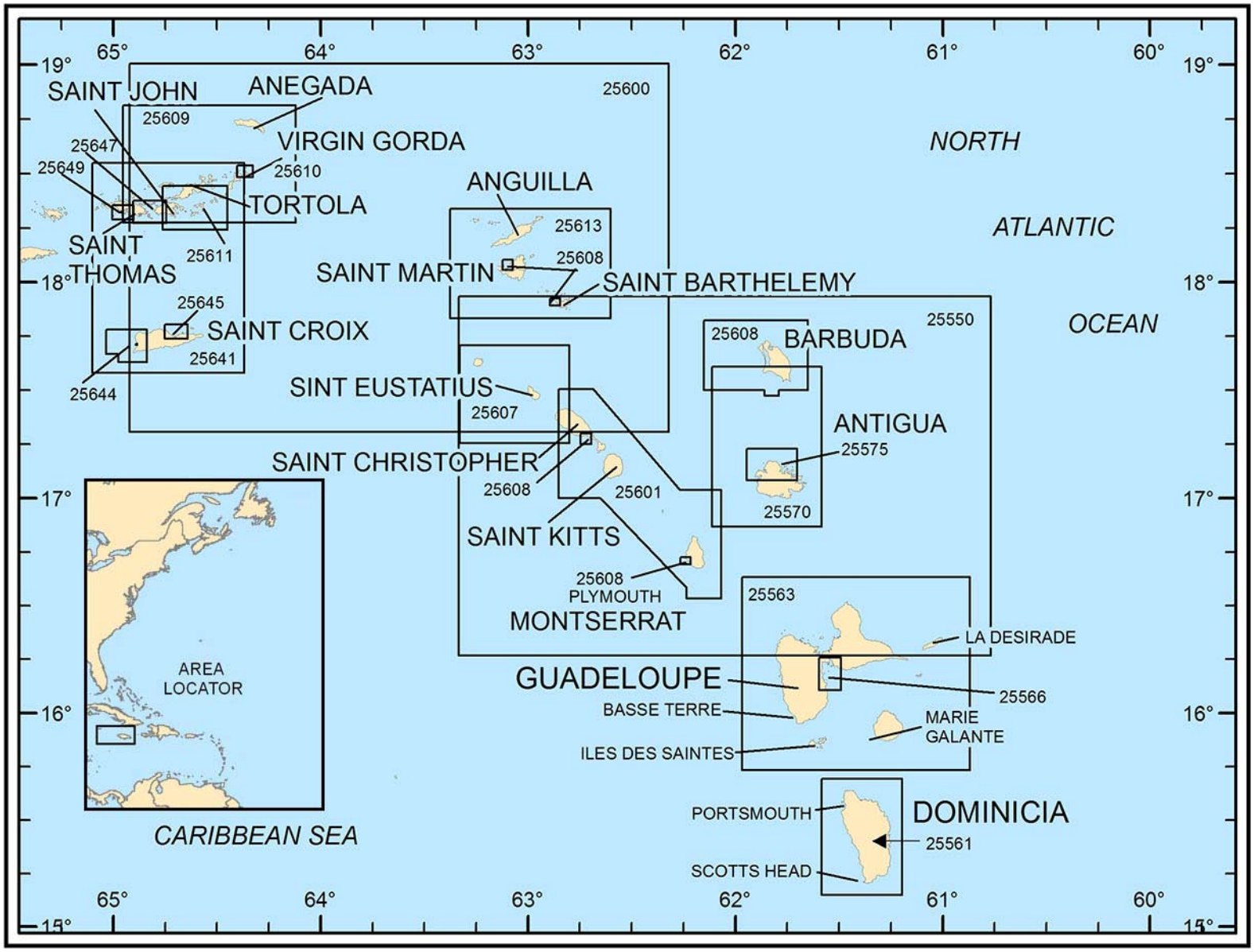
7.70 Ile de la Tortue (Ile Tortuga) (20°04'N., 72°49'W.), the E extremity of which lies about 27.5 miles WNW of Cap-Haitien, is about 20 miles long and 4 miles wide. The E and W extremities of the island are low and its interior is mountainous. The island is reported radar conspicuous at about 26 miles.

A conspicuous red cliff on the S side of the island is reported to be visible at considerable distances. Lights are shown from the island's E and W ends.

Rade de la Basse Terre (Tierra Baja) (20°01'N., 72°42'W.), a settlement on the south coast of the island about 5 miles W of the E extremity of the island, fronts on a small reef-fringed shoal water basin. Large vessels may anchor outside the reefs, 1 mile WSW of the settlement, over a sandy bottom.

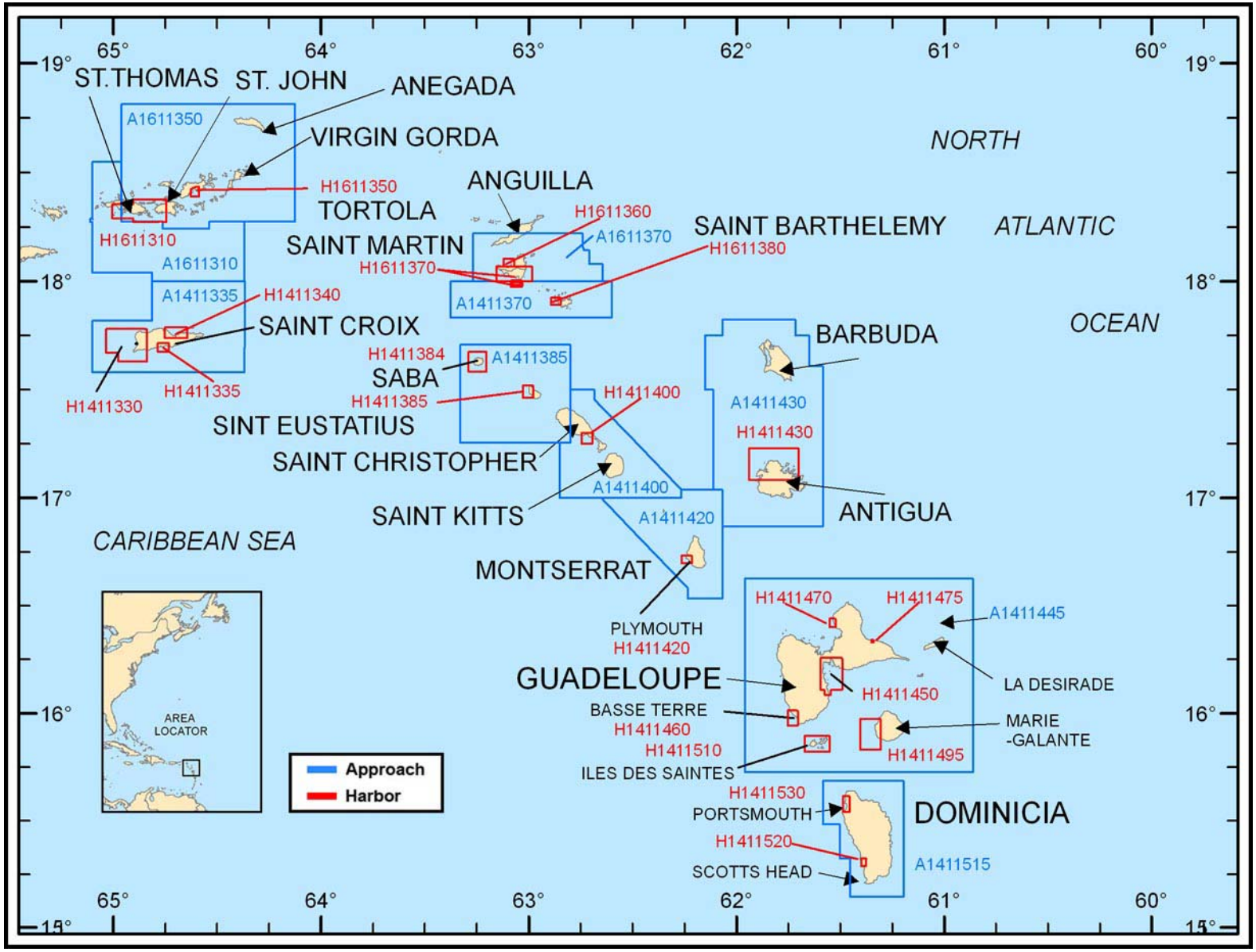
Small vessels with local knowledge can obtain anchorage, with shelter from the prevailing winds, close W of Pointe Oiseaux, 3 miles W of the settlement, in depths of 5.5 to 7.3m, grassy bottom.

A jetty near the customshouse has depths of 0.9m alongside its head. Anchorage may be obtained, in a depth of about 36.6m, with the custom house bearing 147° and Pointe Perez bearing 061°.



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 DNCs 14 and 16 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 8

THE BRITISH VIRGIN ISLANDS AND THE LEEWARD ISLANDS

Plan.—This sector describes the British Virgin Islands, including the various island passages involved. The remaining part of this sector will be devoted to the Leeward Islands, lying SE of the British Virgin Islands.

General Remarks

8.1 The British Virgin Islands, located N and E of the Virgin Islands of the United States, are comprised of Tortola, Virgin Gorda, Anegada, Jost Van Dyke, Peter Island, and about 35 smaller islands and cays.

Road Harbour, Sopers Hole and Gorda Sound are the three main harbors within the British Virgin Islands.

There are no berthing accommodations for large ships in the group, except for Port Purcell in Road Harbour with 7.3m alongside. Other large ships must anchor in the roadsteads.

The demarcation line between the Virgin Islands of the United States and the British Virgin Islands runs N between Little Hans Lollik and Little Tobago, then through The Narrows between Saint John and Great Thatch Island, then around the E side of Saint John through Flanagan Passage between Flanagan Island and Pelican Inlet.

On approaching the British Virgin Islands from the N, Virgin Gorda will be the easiest feature to identify, rising in a clear well-defined peak.

West of Virgin Gorda, Tortola will appear the next most conspicuous as its highest peak will be seen, as a flattened and elongated summit.

Jost Van Dyke can be identified by a number of rugged pointed peaks.

Winds—Weather.—The weather of the British Virgin Islands is ideal and is cooled 10 months of the year by the E trade winds. The islands have an average mean temperature of 26°C.

Fog, thunderstorms, and high humidity are almost unknown. Rainfall is moderate.

At Saint Martin E fronts cause rain at irregular intervals, mostly during summer. Hurricanes are a constant threat during June through November.

At Saint Christopher the average winds are from the E at a rate of 10 knots during the month of July, and 6 knots during the rest of the year.

At Antigua, the E to NE trades prevail with average speeds of 9 to 13 knots. The rainy season for the island is May through November.

The weather for Guadaloupe is generally healthful and tempered by trade winds. The island is subject to violent storms at times and hurricanes occur occasionally.

Rollers or ground swell in the area of the islands, frequently occur from October to May and sometimes continue for 3 or 4 days.

In general, they set in after a prevalence of E and SE winds. They also follow winds from the NE, especially when these winds are strong.

Rollers have been observed to break over depths of 16.5m between Tortola and Guana Island, close N.

The rollers appear to loosen sand, thus discoloring the water N of the islands as far as the edge of Virgin Bank.

In some places near the W end of Anegada, where the bottom is composed of fine sand, the formation of the banks is frequently changed.

Tides—Currents.—The average rise and fall of the tide is about 0.3m among the British Virgin Islands. The actual fluctuation of the water level consequently depends largely upon the winds and other meteorological conditions. The tide of the Atlantic Ocean side is chiefly semi-diurnal, whereas on the Caribbean side the tide is chiefly diurnal.

The currents among the islands are not well established by observations. An ocean current, which has an average rate of 0.2 knot and a direction varying from NW to N, prevails during all seasons of the year.

The SE tidal current is reported to predominate during the summer months from the middle of June to the middle of August. Near the commencement of this period the current has been observed to set for 8 days continually to the SE with unusual force.

The NW tidal current is reported to prevail during the months of September, November, March, and April.

Depths—Limitations.—Numerous reports and surveys indicate that shoal patches of small extent may be encountered on the banks covered by this sector. Deep-draft vessels, especially those drawing over 12m should remain outside the 100m curve where possible.

The British Virgin Islands are located on a bank, over which the depths are less than 200m, extending in an ENE direction for nearly 90 miles from the E end of Puerto Rico. Anegada is located close to its NE extremity, but the remainder of the group lie near the S edge of the bank.

Caution.—Vessels approaching the islands from the N should avoid the following banks:

1. **Whale Banks** (18°41'N., 64°43'W.), with a least depth of 18.5m.
2. **Turtle Head** (18°38'N., 64°46'W.), with a least depth of 11m.
3. **Barracouta Banks** (18°34'N., 64°52'W.), with a least depth of 20m.
4. **Kingfish Banks** (18°31'N., 64°40'W.), with a least depth of 14.5m.

Saba Bank, Barracuda Bank and the dangers extending E from St. Croix are the main dangers when approaching from S. Other dangers off-lying the Leeward Islands will be described later in the text.

Anegada

8.2 **Anegada** (18°44'N., 64°20'W.), on the W side of Anegada Passage (Sombrero Passage), is the N and E of the British Virgin Islands. It is about 9.1m high for the most part, and ex-

cept for a few places which have been cleared for cultivation, is covered with brushwood. The principal settlement is on the S side of the island.

The island is completely surrounded by reefs. The N side is fringed by a narrow barrier reef and is clear of off-lying dangers. The S side is foul up to 3.5 miles offshore, and has numerous coral heads fronting the shore. The depths off the N and E sides of the island within Virgin Bank decrease so rapidly that soundings are of little use.

Horse Shoe Reef (18°37'N., 64°13'W.), a dangerous reef upon which the sea breaks even in the finest weather, extends SE from East Point, the SE extremity of Anegada. It then recurves for 4.5 miles SW terminating in Herman Reefs. The sea only breaks on Herman Reefs with a swell or strong breeze.

White Horse is a heap of white dead coral, about 0.9m high, lying about 2 miles WSW of the SE extremity of Horse Shoe reef, and two similar heaps, up to 0.6m high, lie within 0.3 mile S of it. They are not visible from any distance and periodically disappear below the surface.

Two stranded wrecks lay on the E edge of the coral heads on Horse Shoe Reef, 1.7 miles ENE and 4.7 miles NNW, respectively, of White Horse.

Hawkes Bill Bank, with a least depth of 4.9m, Robert Reef, with a depth of 8.9m, and Fox Rock, with a depth of 8.2m lie respectively 4 miles WNW, 4 miles W, and 5 miles W of Herman Reefs.

Anchorage.—Vessels can anchor, in 11.9m, with West End, the W extremity of Anegada, bearing 338° and East Point bearing 072°. Another good anchorage is found with West End bearing 328° and East Point bearing 050°.

A vessel anchored with West End bearing 036° distant 1.7 miles, in 10m, good holding ground.

There is good anchorage for small craft, 2 miles ESE of West End, in a depth of 2.4m, which is approached through a shallow buoyed channel in the reef.

Good temporary anchorage can be taken, in 9.1 to 11m, about 1 mile W of West End, but only when there are no rollers.

Caution.—Anegada is low, with no prominent landmarks; the strength and irregularity of the tidal currents in its vicinity make the approach to it, at night, extremely dangerous, unless very certain of the ship's position.

By day, however, the risk is not so great in clear weather, as Virgin Peak on Virgin Gorda is an excellent landmark.

Vessels approaching the anchorages should use caution in rounding West End and the shoal ground extending S and SW of it. Vessels should take soundings continuously and should not approach these anchorages in depths of less than 9.1m.

Three submarine cables lie W of the W end of Anegada Island as shown on the chart.

The Tobago Islands

8.3 The **Tobago Islands** (18°27'W., 64°50'W.), consisting of Great Tobago Island and Little Tobago Island, 1 mile SW, are the westernmost of the British Virgin Islands. It has been reported Little Tobago Island is a good radar target for a distance of up to 18 miles.

The S side of Great Tobago Island is fringed with coral to a short distance offshore, but elsewhere its coasts are steep-to, close to the cliffs. Some rocks lie close off the NW extremity of the island.

Watson Rock, 27m high, lies off the SW extremity of the island. King Rock, about 0.7 mile S of the SW extremity of Great Tobago Island, is steep-to and awash.

A submarine cable runs in an E to W direction about 1.2 N of Tobago Island and Jost Van Dyke Island.

Mercurius Rock (18°27'N., 64°49'W.), the only danger in the channel between Great Tobago Island and Jost Van Dyke Island, is small and steep-to, with a depth of 2.1m.

The rock lies about 0.7 mile ESE of the N extremity of Great Tobago Island. When using the passage between Great Tobago Island and Jost Van Dyke Island, a vessel should favor the E side of the channel.

Jost Van Dyke Island

8.4 **Jost Van Dyke Island** (18°27'N., 64°45'W.), the W extremity of which lies about 2 miles E of the SE extremity of Great Tobago Island, is lofty, rugged, bold, and steep-to.

The S side of the island is indented by three small bays, two of which are suitable for small craft with local knowledge.

Little Harbour, the E bay, is narrow and provides good shelter. Great Harbour, the middle bay has depths of 7.3m, 0.2 mile from its head. White Harbour, the W bay, is encumbered with reefs and shoals.

The charted anchorage S of White Bay is suitable for small vessels.

Little Jost Van Dyke (18°27'N., 64°43'W.) is connected to the NE end of Jost Van Dyke by a shallow ledge. Green Cay lies close E of Little Jost Van Dyke. Sandy Cay lies about 1 mile S of Green Cay.

The passage between Sandy Cay and Jost Van Dyke Island is 0.3 mile wide. Vessels should favor the W side of this passage which is steep-to, using caution to avoid the dangers off the SE side of Jost Van Dyke Island and Green Cay.

Tortola Island

8.5 **Tortola Island** (18°26'N., 64°37'W.), the largest of the British Virgin Islands, is flanked on its E and W ends by smaller islands which dot the sea enclosing an expanse of water considered to be one of the finest cruising grounds in the world.

Mount Sage, about 3.5 miles from the W end, rises to an elevation of about 521m.

Another mountain, 459m high, stands about 1 mile farther NE and 2 miles W of Road Harbour. It is surmounted by a radio station with three conspicuous towers, attaining an elevation of 485m. Two of the towers are fitted with dish aerials and one exhibits a red obstruction light.

Road Harbour, the only port of entry in the British Virgin Islands, is situated on the S coast of Tortola Island.

Great Thatch Island (18°23'N., 64°44'W.) lies about 0.5 mile W of the West end, the W extremity of Tortola Island.

The Narrows, between Saint John and Great Thatch Island, gives access to the channel between Tortola Island and Saint John, leading to Sir Francis Drake Channel and Flanagan Passage.

Tides—Currents.—Currents in the Narrows and the pas-

sage are tidal, and attain rates of 2 to 4 knots. Thatch Island Cut should not be attempted by sailing vessels from the N, except with a S current, as eddies and currents are strong. The tidal currents are very strong and eddies are formed.

Sopers Hole (18°23'N., 64°43'W.), limited port of entry, is a basin lying between the W extremity of Tortola Island on the N, and Little Thatch Island and Frenchman Cay on the S. Sopers Hole affords good sheltered anchorage for small vessels.

Depths of 23m, sandy bottom, are found in the middle of the basin N of Little Thatch Island, gradually decreasing to 11m about 91m from the shore on either side and to a lesser depth in the approach to the shoal area N of Frenchman Cay. Well up in the bight, the bottom is muddy, and provides better holding ground than in the middle.

There is a ferry landing pier and a yacht marina at Sopers Hole. A light is exhibited at the SW end of the landing pier.

Road Harbour

8.6 Road Harbour (18°25'N., 64°37'W.) (World Port Index No. 11350), on the S coast of Tortola, lies in a bay which forms the natural harbor of the island. The bay is protected by ranges of hills from all except S and SE winds.

Roadtown, the capital of the British Virgin Islands, stands on the W shore of the bay.

The main berthing areas are Port Purcell, on the NE head of the harbor; Cruise Ship Jetty, at Wickham's Cay, W side of the harbor; and the Roadtown jetties, on the W side of the bay.

Depths—Limitations.—The depths in the approach to Road Harbour are very irregular. Within 1.5 miles of Hogs Valley Point and 2 miles of Slaney Point there are many patches of rock and coral with depths of 3.7 to 7m.

Denmark Banks, with a least depth of 3.7m, lie about 0.6 mile E of Slaney Point. Lark Bank, marked by a lighted buoy, with a depth of 4.4m lies 0.3 mile N of Denmark Banks.

Scotch Bank, marked by a lighted buoy at its NW edge, has a least depth of 2.4m and lies on the E side of the entrance, WNW of Hogs Valley Point. The depths decrease rapidly towards the shore which is fringed by rock and coral. It is reported (2008) that a stranded wreck lies N of Scotch Bank at the entrance to Fish Bay. For berthing refer to the **Road Harbour—Berth Infomation Table.**

Aspect.—Todman Peak, 352m in elevation, is prominent standing NW of the harbor, and Mount Bellevue, 385m in elevation is also prominent standing NE of the harbor.

On the E side of the bay, there are several conspicuous silver colored oil tanks on Shirley Point, 0.7 mile NW of Hogs Valley Point; at night, lights burn in their vicinity. North of the tanks a conspicuous radio mast, painted red and white, attains an elevation of 92m with a shorter mast standing on a building close W.

On the W side of the bay four apartment blocks, appearing from E as three conspicuous buildings with flat roofs, stand about 0.5 mile SW of Burt Point in the vicinity of Slaney Point. Government House is white, with conspicuous arches. The Government Administration Building, a large stone-colored building with large tinted windows, stands about 0.5 mile NNE of Government House.

Road Harbour—Berth Infomation

Berth No.	Length	Depth	Remarks
Lateral Pier	244m	7.3m	Main cargo pier. Ro-ro vessels can be acommodated. Facility located on NE side of bay.
Cruise Ship	230m	10.0m	Can berth two large cruise ships simultaneously. Using the dolphins positioned 79m off the end, the berth extends to a length of 309m .
West End Terminal	97m	3.0m	Main ferry terminal (passengers and cargo from United States).
Road Town	61m	3.0m	Ferry terminal (local ferries).
Road Town	39m	3.0m	Ferry terminal (local ferries).
Offshore Tanker Berthing			
Oil Berth	—	8.8m	Consists of three mooring buoys and a red marker buoy at the end of submarine oil pipeline situated on the E side of Shirley Point.
Gas Berth	—	8.8m	Situated 400m NNW of Shirley Point in Baughers Bay. Consists of two mooring buoys and two red marker buoys at the end of a submarine gas pipeline.

Little Wickham Cay, a small mangrove island lying in the NW corner of the bay, in a basin formed by two reclaimed areas and the coast, is prominent. The entrance to the inlet is protected by breakwaters beyond which two marinas are prominent.

Pilotage.—Pilotage is compulsory for vessels over 200 gt.

The pilot embarks between Hogs Valley Point and Denmark Banks. If requested, pilots will also board in Sir Francis Drake Channel.

Westbound vessels are boarded 2 miles S of **Buck Island** (18°26'N., 64°33'W.) while eastbound vessels are met 2 miles S of Hogs Valley Point.

There are no licensed pilots, but experienced mariners act as such. The pilots can be contacted, as follows:

1. Call sign: Tortola Pilot
2. VHF: VHF channels 14 and 16
3. Telephone: 1-248-494-4879
4. Facsimile: 1-248-494-2200

Regulations.—The vessel's ETA should be sent 72 hours, 48 hours, and 24 hours in advance, with confirmation sent 1 hour before ETA.

Anchorage.—Large vessels can anchor in position 18°25'40"N, 64°32'15"W in the bay S of Beef Island.

The above anchorage is exposed to winds from S and SE and sudden and heavy rain squalls sweeping into the bay may cause a vessel to drag anchor.

Road Harbour has a number of yacht marinas which can best be seen on the chart. There is a small craft jetty adjacent to the town, with depths of 0.6 to 3m alongside.

With the exception of ships supplying oil, ships awaiting embarkation of a pilot and ships anchored while under pilotage, anchorage is prohibited in an area best seen on the chart.

Oil and gas submarine pipelines extend into the harbor from the E side of the bay, to terminal berths consisting of mooring buoys. The positions are best seen on the chart.

Directions.—From a position about 0.5 mile S of **The Bluff** (18°26'N., 61°31'W.), a vessel should steer to pass similar distance SE of Nora Hazel Point (3.2 miles WSW) keeping clear of depths of 8.5m about 1 mile W and about 0.5 mile S of the point.

Then, the yellow dome of Fort Burt hotel in line with the 290m summit of the hill behind it, bearing 278°, will lead close aboard the 10m contour off Hogs Valley Point.

The dome is not easy to distinguish unless the sun is high.

When 0.5 mile off Burt Point course should be altered to NW to pass between Scotch Bank and Lark Bank with either the extremity of the breakwater extending SW from Wickham's Cay 2 or the Cruise Ship Jetty dolphin bearing 318°.

When the conspicuous 92m radio mast on the E side of the harbor bears about 040° course may be altered N towards Port Purcell. The right hand edge of a long low turquoise-colored building on the quay, bearing 003°, will lead in a least depth of 6.8m to the quay.

Caution.—It is reported that the positions of the buoys in Road Harbour are unreliable owing to the poor holding ground and occasional strong winds and currents.

It is usual for vessels to berth heading SE turning on the starboard anchor. Tugs are not available and, after sunrise, the prevailing E winds may make berthing difficult. The pilot boat will assist with berthing lines.

8.7 Guana Island (18°29'N., 64°34'W.) lies close off the NE side of Tortola Island. A fairway passage between the two islands has a least depth of 8.8m. Good sheltered anchorage can be found, in 12.9m, in the entrance of White Bay, with the W extremity of the island bearing 347° and Monkey Point, the S extremity of the island bearing 112°.

This anchorage should not be used during the period of the rollers.

Great Camanoe (18°28'N., 64°32'W.) lies about 1 mile E of Guana Island. The island consists of two parts connected by a low, narrow neck of land. Scrub Island, lies close E of Great Camanoe Island, from which it is separated by a narrow channel, in which there are many shoals and rocks.

Little Camanoe Island and Marina Cay are W and E, respectively, of the S end of Great Camanoe Island.

Submarine cables exist near the S side of Great Camanoe Island and can best be seen on the chart.

Beef Island (18°26'N., 64°32'W.) lies about 0.5 mile S of Great Camaneo Island and is separated from the E side of Tortola Island by a narrow and shoal passage. The S extremity of the island, marked by a light, is a prominent landmark. Beef Island and Tortola Island are connected by a bascule bridge.

Good anchorage can be taken, in 24m, in the lee of Beef Island, about 0.7 mile W of its S extremity. Buck Island lies about 2 miles W of the S extremity of Beef Island.

Virgin Gorda

8.8 Virgin Gorda (18°29'N., 64°24'W.) is located with its SW extremity about 4 miles SE of the E extremity of Scrub Island. The island is easily identified by its rising in its central part to a distinct summit in Virgin Peak, also known as Virgin Gorda Peak, 414m high.

The part of the island consists of a narrow tongue of land composed of irregular rugged hills terminating at Pajaros Point, in a remarkable pinnacle rock. The SW part of the island is a peninsula, which is connected with the central part by a narrow isthmus.

The most remarkable feature of Virgin Gorda is the field of granite boulders between its SW extremity and Colison Point, about 2 miles to the N.

The W side of the peninsula has been broken up by some violent action of nature into immense blocks of granite, that lie scattered about the coast.

St. Thomas Bay lies close S of **Colison Point** (18°25.8'N., 64°26.7'W.). A government jetty 201m in length with an alongside depth of 2.7m is located at the S end of St. Thomas Bay.

The approach to government jetty lies through an unmarked gap in the reef with a depth of 3m located about 0.2 mile N of the jetty.

Little Dix jetty is situated 0.5 mile SE of Colison Point.

Virgin Gorda Yacht Harbor, a natural lagoon, lies 0.7 mile SSE of Colison point and can accommodate 110 yachts, up to 30m in length, in depths from 2.5 to 5m.

The harbor entrance is protected by a breakwater and is approached from NW towards Little Dix Jetty and then by a buoyed channel, with a depth of 3m, leading inside a reef lying parallel to the coast, close offshore. A wreck, awash, lies close N of Round Rock.

No attempt should be made to cross the reef opposite the harbor entrance. The Harbormaster can be contacted by VHF.

The cays and islets lying up to 2 miles SSW of Virgin Gorda as far as Round Rock are composed of granite stone. Fallen Jerusalem, the largest of these islets, resembles a town in ruins. Uncharted below-water rocks were reported to exist between Round Rock and Fallen Jerusalem.

Three submarine cables, best seen on the chart, exist between Virgin Gorda, Great Camanoe, Little Camanoe, and Tortola.

A group of sparsely wooded islands, cays, and reefs front the N side of Virgin Gorda at a distance of 2 miles. Virgin Sound, Gorda Sound and Eustatia Sound lie within these islands and dangers.

8.9 **Necker Island** (18°32'N., 64°22'W.) is the northernmost island off the coast of Virgin Gorda. Foul ground with depths of less than 5.5m, extends about 0.5 mile W and about 0.3 mile SE. A continuous bank of coral heads has grown between 0.1 and 0.2 mile off the SW coast.

The Invisibles, lying about 0.7 mile E of Necker Island, are three rocky heads over which there are depths of from 1.2 to 1.5m, and the sea breaks over at times.

These rocks are not easily seen and caution should be used when in their vicinity.

Mosquito Island (18°31'N., 64°24'W.) lies about 2 miles SW of Necker Island and is separated from Virgin Gorda by a narrow and shoal passage.

Colquhuon Reef, which dries in some spots, extends about 0.5 mile SE of Mosquito Rock, which lies off the NE side of Mosquito Island.

Prickly Pear Island (18°30'N., 64°22'W.) lies about 1 mile E of Mosquito Island. It is the largest of the islands off the N side of Virgin Gorda.

Eustatia Island, close E of Prickly Pear Island, is enclosed by foul ground.

Virgin Sound, a channel 0.2 mile wide, extends between the reefs and shoals N of Prickly Pear Island and Eustatia Island and those S of Necker Island. The sound affords good temporary anchorage, in depths from 12.8 to 18.3m, but care should be taken to avoid foul ground on either side.

Eustatia Sound is an area contained within the foul ground W of Eustatia Island, offering safe anchorage to small craft. Necker Island Passage, lies between Necker Island and Herman Reef and Robert Reef.

This passage should only be used during daylight hours. Less water than charted has been reported 3 miles E of Pajaros Point.

8.10 **Gorda Sound** (18°30'N., 64°22'W.) lies between Mosquito Island, Colquhoun Reef, Prickly Pear Island, and the N coast of Virgin Gorda. The sound is protected from all winds and sea rollers. Ships visiting Gorda Sound should obtain pratique at Road Harbour prior to entry.

Depths—Limitations.—General depths of 16.5 to 21.9m lie in the approach to the entrance, which lies between Colquhoun and Cactus Reefs. A channel with depths of 5.8 to 10.6m leads through the entrance, which is marked by buoys.

Within the entrance, the depths gradually increase to 18.3 to 21.9m in the large basin SW of Prickly Pear Island. Gorda Rock, about 0.5 mile SSW of the N end of Prickly Pear Island, has a depth of 9.1m and is the only danger in the fairway.

The channel between Gorda Sound and Eustatia Sound is shallow and foul, and in the middle of it is Saba Rock, 4.6m high. The W part of Gorda Sound between Mosquito Island and Anguilla Point is foul.

Anchorage.—Good sheltered anchorage can be taken in the middle part of the sound, in depths of 20.1 to 21.9m.

The British Virgin Islands—Sea Passages

8.11 A group of islands, separated from each other by deep passages, lie between Round Rock and Saint John Island.

Round Rock Passage (18°24'N., 64°28'W.), between Ginger Island and Round Rock, is clear of dangers and the best passage for entering Sir Francis Drake Channel from the E and S. This passage is easily identified from its position in relation to Fallen Jerusalem about 1 mile NE. A light is shown from the NE part of Ginger Island.

The passage has general fairway depths of 27m. The SE and NW tidal currents attain a velocity of 1 knot.

Cooper Island (18°23'N., 64°31'W.) lies about 1 mile SW of Ginger Island. Vessels may use the passage between the two islands but caution is necessary.

Above-water rocks lie within 0.2 mile of its NE side, and Carval, a rock, bold and steep-to, lies 0.7 mile ENE of the S extremity of the island.

Salt Island (18°22'N., 64°32'W.) lies about 0.5 mile SW of Cooper Island. The passage between the two islands is narrowed to a width of 0.1 mile. This passage should never be attempted by a sailing vessel. A light is shown at the NW extremity of Salt Island. It is obscured intermittently between the bearings of 227° and 000°.

8.12 **Salt Island Passage** (18°22'N., 64°33'W.) lies between Salt Island and Dead Chest, 1.5 miles to the W.

Vessels using this passage, in which the sea is generally smooth, should keep within 0.5 mile of Salt Island to avoid Blonde Rock.

A narrow passage separates Dead Chest from the NE end of Peter Island, to the W.

A Marine Park, within limits as shown on the chart, has been established in the vicinity of the RMS Rhone wreck sites. Anchoring, fishing including lobstering, and the collection of live shellfish are prohibited within the park.

Norman Island (18°19'N., 64°37'W.) lies about 1.2 miles SW of the S extremity of Peter Island. The passage between the two islands is crooked, but navigable.

Vessels must keep clear of Carrot Shoal and Carrot Rock when transiting between Norman Island and Peter Island.

Pelican Island (18°20'N., 64°38'W.) lies about 0.5 mile NNW of the NW extremity of Norman Island. A bank, with a least depth of 11.9m, lies about 0.7 mile NNW of the island.

The Indians, four prominent jagged rocks lying close together, lie W of Pelican Island on the E side of Flanagan Passage. Flanagan Island lies about 1.2 miles WSW of The Indians.

Anchorage.—Great Harbour, a bight on the N side of Peter Island, entered W of Great Harbor Point.

A Marine Park, best seen on the chart, encumbers the entrance to Great Harbor. Anchoring, fishing including lobster-

ing, and the taking of live shellfish are prohibited in the park.

Little Harbour, which indents the NW side of Peter Island, is smaller and more exposed.

The Bight, a small inlet, lying between the projections that extend from the W side of Norman Island, affords excellent anchorage. Depths of up to 20m, good holding ground, lie up to 0.1 mile from the N and S shore and 0.2 mile from the head of the inlet.

Privateer Bay, lying close SW of The Bight, affords safe anchorage during the prevailing trade winds.

Sir Francis Drake Channel

8.13 Sir Francis Drake Channel (18°25'N., 64°30'W.) is bounded NW by Tortola Island and the islands off its E end, and SE by the W side of Virgin Gorda and the chain of islands which stretches between the SW extremity of that island, and the E extremity of Saint John. In the S part of the channel there are several coral patches, with depths of from 10.1 to 18.3m, the positions of which can best be seen on the chart.

The channel can be entered from the N through the passages on either side of the Dog Islands, a group of small islands and islets lying off the NW part of Virgin Gorda, and from Flanagan Passage, which leads into the channel from the S. Vessels using the passage W of the Dog Islands must avoid Tow Rock, with a least depth of 3.9m, and lies about 1.2 miles WNW of West Dog Island.

Tides—Currents.—Tidal currents are weak and variable in Sir Francis Drake Channel but there is a NE current along the shores of Tortola Island. The channel has general depths of 20 to 49m except in the S part of the W portion of the channel where there are several coral patches with depths of 7.3 to 18.3m.

Anchorage.—There are two anchorages with good holding ground for deep draft vessels off the W side of Virgin Gorda clear of the submarine cables, best seen on the chart.

The N anchorage, in 20.1 to 20.9m, lies in the bight between the NW extremity of Virgin Gorda and Colison Point. This anchorage is somewhat protected from the NW by the Dog Islands.

During the winter months it is advisable to anchor midway between Virgin Gorda and the Dog Islands, using a long scope of chain.

The S anchorage, in 23.8 to 25.6m, lies about 1 mile offshore between Colison Point and Fallen Jerusalem.

The Leeward Islands

8.14 The Leeward Islands lie to the E and SE of the British Virgin Islands. Ships passing E or windward of the islands can pass fairly close. The major passages between the principal islands are deep in the middle and afford passage to deep draft ships. The islands being high, adequate radar echoes should ensure clearing the dangers adjacent to the islands.

Most of the harbors are small and large ships must anchor in the small roadsteads or on the narrow banks off the island towns. The port facilities on the islands are extremely limited for the most part.

The general ocean current circulation throughout these islands is to the W and generally the rates are less than one knot and influenced by the wind forces. Near the islands there is some tidal current influence.

Anegada Passage (Sombrero Passage)

8.15 Sombrero (18°36'N., 63°25'W.), an island with precipitous sides, lies on a small circular bank with general depths of 18.5 to 67.0m. The surface of the island is rough and rises in sharp jagged points. Vegetation is sparse, but there is abundant bird life on the island. Radio contact is maintained with Anguilla.

Depths—Limitations.—A bank, with depths from 43 to 62m, lies with its center 10 miles SE of Sombrero, and another bank, with a least charted depth of 64m lies with its center 16 miles E of the island. There are no known dangers on either bank.

Aspect.—A light, with a racon, is exhibited near the center of the island.

The keeper's dwellings and a flagstaff stand close N of the light. The circular concrete base, about 6m in height, of a former light stands close E of the light.

A ruined chimney about 10m in height stands about 0.1 mile SW of the light.

Anchorage.—Anchorage may be obtained off the W side of the island, in a depth of about 22m, about 0.2 mile W of the light.

Anegada Passage (18°20'N., 63°40'W.), the channel between the British Virgin Islands and the Leeward Islands, is wide, deep and clear of dangers in the fairway but is not lighted in the S approach.

The least depth of 22m lies about 14 miles SSE of the E extremity of Virgin Gorda.

Anguilla

8.16 Anguilla (18°13'N., 63°03'W.) is the N of the Leeward Islands positioned 30 miles SE of Sombrero Island. Anguilla is low and flat in appearance. Road Bay, on the NW side of the island, is a port of entry. The island should only be approached in daylight; because of its low elevation it is hard to identify at night. A light is displayed from Snake Point, at the NE tip of the island.

Depths less than charted have been reported in the area of the island, therefore, vessels with drafts greater than 12m are advised to keep outside the 100m curve where possible.

Dog Island (18°17'N., 63°15'W.) is covered with brushwood and grass, and lies about 8 miles NW of the SW extremity of Anguilla. Its SE side is steep-to except for Bay Rock, about 0.2 mile off the S side. Landing can be made abreast this rock.

A number of cays lie off the coast of Dog Island and can best be seen on the chart. Dog Island Channel, lies between Dog Island and Prickly Pear Cays.

The fairway has a width of 2 miles with depths of 13.1 to 19.5m. Vessels should pass W of Dog Island unless the sea in the channel is calm. Flirt Rocks, two in number, lie close together N of Prickly Pear Cays.

Prickly Pear Cays (18°15'N., 63°10'W.) are two islets separated by a narrow boat passage. Both islets are covered in brush, the W cay being longer and narrower than the E cay. A small rock, 2m high, called North Cay lies N of the E cay.

Seal Island Reefs (18°17'N., 63°06'W.) extend about 5.5 miles E from Flirt Rocks. The E end of the reefs form the NW side of Northern Channel which leads into Crocus Bay. The reefs are dangerous to approach at night from the N as the bottom does not shelve sufficiently to indicate its proximity, there being depths of 25 to 29m close to the edge of the reef and also within 4 miles to the N of the reef.

Seal Island (18°16'N., 63°09'W.) lies on the S side of Seal Island Reefs, 1.5 miles E of the reefs W extremity.

A small group of rocks lie 0.3 mile W of Seal Island. North Wager is a small dark rock lying about 0.7 mile SSW of the W end of Seal Island.

8.17 Scrub Island (18°17'N., 62°57'W.) lies off the NE end of Anguilla and is separated from it by a narrow passage with a depth of 11m in the fairway. The island is covered with brushwood and stunted trees.

The sea breaks heavily on steep-to rocks which extend 0.5 mile from the E end of Scrub Island. The island is a hillock of white rock, which is very distinct when the sun is shining on it. Landing is possible on the beach on the SW side of the island. A stranded wreck is located near Graften's Point at the E end of the island.

Little Scrub Islet is black and precipitous, and lies off the NW side of Scrub Island.

Middle Bank (18°15'N., 63°05'W.) a narrow ledge in Northern Channel, has a least depth of 6.6m. The bottom of the bank is distinctly visible and heavy seas frequently break on it in winter. Dowling Shoal, lies about 2.5 miles W of Crocus Bay. The shoal and Sandy Island at the NE end of the shoal are incorporated into a Marine Sanctuary as best seen on the chart. A patch of the shoal is awash on its NW edge.

Anguillita Island lies close off the SW end of Anguilla. A light is shown from the NW tip of the island.

The shores of **Crocus Bay** (18°13'N., 63°05'W.) are steep-to and heavily wooded. On the NE and S sides of the bay there are high white cliffs which stand out clearly.

At the head of the bay there is a sandy beach from which a broad road, clearly visible from the W, leads to the principal settlement of the island. In the settlement there is a conspicuous high tree which, with the road, enables Crocus Bay to be identified from seaward. A Marine Sanctuary, best seen on the chart, has been established in the N half of the bay.

Road Bay lies S of a heavily wooded peninsula 2 miles SW of Flat Cap Point. At the head of the bay is sandy beach, behind which is the small village of Sandy Ground.

There is a church, with a white roof and small darker spire, in South Hill village on the hill behind the S end of the bay.

Road Ground, with a depth of 4.8m, lies 0.3 mile off the S entrance point of Road Bay. Road Point Light is obscured over Road Ground. The light is difficult to identify in daylight due to the surrounding vegetation.

Apart from this shoal, depths of 5m or more can be carried into the bay until Road Point bears 013°, when depths shoal gradually towards the beach. The deepest water is at the S end of the bay. A stranded wreck is found in the SE part of the bay.

Road Bay is the main port of the island. Several trading schooners will usually be found at anchor up to 0.2 mile offshore. Ships entering the bay at night are cautioned that these schooners do not normally exhibit lights.

It has been reported that heavy, floating, but partly-submerged unmarked objects have been encountered in the vicinity of these schooners. It is advisable to navigate with caution in Road Bay with a good lookout in the bows.

Signals.—A red pennant is displayed when winds of 28 to 33 knots are expected. A red flag with a black center is displayed when winds between 34 to 63 knots are expected. Two red flags with black centers are displayed when a hurricane is expected and at night red flares are sent up.

Anchorage.—Good anchorage, undisturbed by rollers, can be obtained, in depths from 15 to 25m, sand, anywhere between Prickly Pear Cays and Crocus Bay, S of the parallel of North Wager.

Good anchorage can be obtained in the approach to Road Bay, in a depth of 16.8m, sand, good holding ground, about 0.5 mile W of Road Point. With a NE wind a moderate ground swell is sometimes experienced in this anchorage.

A vessel should approach from W with Flat Cap Point ahead, bearing 093°, which course leads 1 mile N of Dowling Shoal. When Road Point bears 157°, the vessel should steer 170°, anchoring when the church bears 118° and Flat Cap Point bears 047°.

Small vessels can obtain good anchorage in Road Bay according to draft. A vessel found comfortable anchorage, in a depth of 6m, about 0.2 mile SW of Road Point.

Caution.—Rapid coral growth in the area N of Road Bay and Crocus Bay was reported. New coral heads have been discovered within 0.2 mile of the S edge of Seal Island Reefs. Vessels are advised to navigate with extreme caution in the area.

8.18 Anguilla Channel (18°09'N., 63°05'W.) leads between Anguilla and Saint Martin with fairway depths of 18.2m and deeper. The channel is free of charted dangers, however, this is based on a mid nineteenth century vintage lead line survey and isolated shoal areas may exist in the passage.

The SE coast of Anguilla is fronted by a steep-to coral reef, which extends up to 0.2 mile offshore in places. Rendezvous Bay offers shelter to small vessels with local knowledge.

An oil terminal has been established in **Corito Bay** (18°10.4'N., 63°03.2'W.). Four oil tanks have been established on shore and a submarine pipeline extends 244m SSE from the shore.

The seaward end of the pipeline is marked by a floating pontoon and three mooring buoys are situated 122m farther S.

Saint Martin (Sint Maarten)

8.19 Saint Martin (18°04'N., 63°04'W.) has divided sovereignty, the N part of the island known as Ile Saint Martin belongs to France, and the S part known as Sint Maarten, belongs to the Netherlands. The coasts of the island are much indented by bays and creeks, some of which afford good anchorage. A high ridge extends S through the central part of the island.

Pointe Blanche (Witte Kaap) (18°00'N., 63°02'W.), the SE point of Sint Maarten, consists of prominent white cliffs.

Ile Tintamarre (18°07'N., 62°59'W.) lies about 1.7 miles off the NE side of Saint Martin. The island is bordered by a coral reef on all sides except the W, where landing can be effected.

There are depths from 16.2 to 21.5m in the fairway between

Ile Tintamarre and Saint Martin, but this channel should only be used in good weather.

There is temporary anchorage for small vessels, in depths of 14.6 to 16.5m, about 0.5 mile W of Ile Tintamarre.

It is reported that small craft may anchor, in a depth of 7m, under the lee of Ile Tintamarre, off the beach in Baie Blanche.

The E coast of Saint Martin is foul and frequently battered by heavy swells. Vessels should keep E of a line drawn from the E extremity of Ile Tintamarre to Molly Beday, 6 miles SSW.

A Marine Park, best seen on the chart, encompasses Ile Tintamarre and the E coast of Saint Martin.

Baie Orientale (18°06'N., 63°01'W.) lies on the NE side of Saint Martin. The bay affords anchorage for small vessels with local knowledge, but it is exposed to the prevailing winds. Ilot Pinels lies close off the N entrance point of the bay. Access to Baie Orientale is difficult.

Etang aux Huitres (Oyster Pond) (18°03'N., 63°01'W.), a small bay, lies about 2.5 miles S of Baie Orientale. Small craft can obtain sheltered anchorage, in a depth of 3m, even during hurricane season.

The bay is entered through a break in the reef. Entrance should not be attempted without local knowledge.

Caution.—Dangers extend up to 2 miles offshore between Oyster Pond and Point Blanche.

8.20 Great Bay (Groot Baai) (18°01'N., 63°03'W.) is entered close W of Point Blanche (Witte Kappe) and is the principal anchorage of Sint Maarten. The W side of the bay consists of a narrow rocky peninsula, on the summit of which stands the ruins of Fort Amsterdam.

A dangerous rock lies about 160m SE of the peninsula.

A prominent radio mast stands about 137m SSW of Fort Amsterdam. A small radio tower, with an aero light (18°02.5'N., 63°06.7'W) located on top of the control tower at the airport, was reported to be prominent.

Between the entrance points the bay is clear of dangers, but its head is bordered by a flat shelf, with irregular depths 1.9 to 3m, extending from 0.2 to 0.3 mile offshore. The depths over the shelf are liable to change.

A light is shown from **Fort Amsterdam** (18°01'N., 63°04'W.). It has been reported (2001) that Fort Amsterdam Light is extinguished 4 hours after sunset.

The A.C. Wathey Pier, about 700m in length, extends SW from the coast about 0.5 mile N of Point Blanche.

A.C. Wathey Pier

Anchorage.—Anchorage can be taken, in 11m, midway between the two entrance points with Point Blanche bearing 110°. When there is no swell, anchorage can be taken farther N, in about 8.2m, with the extremity of the W entrance point bearing 270°, distant 0.5 mile, but vessels should not proceed farther inshore.

Caution.—Restricted anchorage and fishing areas lie near the approach to Great Bay, as best seen on the chart.

8.21 Philipsburg (18°01'N., 63°03'W.) (World Port Index No. 11370) stands on a narrow bank of sand, which separates the head of Great Bay from an inland salt pond. It is the principal town and government seat of the Dutch part of the island.

For berthing information refer to the table titled **Phillipsburg—Berth Infomation**.

Pilotage is compulsory. Pilots board at the halfway point between Point Blanche and Fort Amsterdam. The pilot can be contacted on VHF channel 12. Vessels should request a pilot 24 hours in advance. The pilot boards in position 18°00'22.8"N, 63°04'09.0"W.

St. Martin Harbormaster is available on VHF channel 12 or 16 and via “Saba Radio” for telephone connection to the harbor office.

Anchorage is in the Great Bay Harbour. A pilot is not required for anchoring. The minimum approach depth is 11m; the minimum depth alongside 9.1m.

Phillipsburg—Berth Infomation

Berth	Length	Depth	Remarks
A.C. Watherly Pier (South)	670m	—	Cruise ships (main cruise vessel pier). Berthing available for two cruise ships on each side.
A.C. Watherly Pier (North)	440m	—	Cruise ship. Can accommodate two cruise ships.
Tender Jetty	120m	6.0m	Four finger piers can accommodate six tenders with a 5.0m draft.
Captain David Cargo Quay	540m	—	Containers and ro-ro. Located E of the cruise ship pier. Has a dredged depth of 10.5m.

Cole Bay Oil Terminal

8.22 Cole Bay Oil Terminal (18°01'N., 63°05'W.) (World Port Index No. 11372) lies about 1.7 miles WNW of Great Bay. It is an exposed bay on the S coast of Sint Maarten identifiable by conspicuous tanks and a combination power plant and desalination facility.

The terminal consists of two berths at the mouth of the bay. For berthing information see the table titled **Cole Bay Oil Terminal—Berth Infomation**.

Anchorage with good holding ground is available 0.5 to 1.0 mile S of the mooring complex.

Cole Bay Oil Terminal—Berth Infomation

Berth	Length	Depth	Remarks
West Berth	—	9.5m	Three mooring buoys
East Berth	—	10.0m	Four mooring buoys

8.23 Simson Baai (18°02'N., 63°06'W.) lies about 3 miles WNW of Great Bay and is entered between Pelikaan Punt and a point about 1 mile to the WNW.

The bay affords anchorage, with the best berth being midway between the entrance points; in a depths of 8.2m.

This anchorage is reported to be exposed to the ground swell. Two mooring buoys are located in the N central part of the bay. In the NE corner of the bay a boat channel leads into a large lagoon, which is frequently closed. A dangerous wreck is found just N of the E entrance to the bay. Prinses Juliana Airport lies on the NW side of Simson Baai.

Anchorage is prohibited off the W end of the runway while the airport is in operation. A light is shown from the control tower of the airport.

On the NW coast of Ile Saint Martin, **Pointe du Cannonier** (Pointe Basse Terre) (18°04'N., 63°09'W.) is low and sandy, with a submerged spit extending 0.7 mile to the W.

Caution should be taken rounding the point at night as the high land of the interior gives the point the appearance of being farther off than it really is. By day and in clear weather, the edge of the spit is easily visible.

Caution.—Two wrecks lie about 1 mile W of the airport light and one wreck lies about 1.5 miles S of the airport light. Several submerged wrecks lie within 550m of the mooring buoys in the inner bay.

8.24 Baie du Marigot (18°04'N., 63°06'W.) lies about 2.5 miles E of Pointe Basse Terre and is entered between Pointe Falaise and Pointe Arago, 1.7 miles ENE.

Baie Marigot is divided into three bights by small projections. On the NE projection, which is located about 1 mile S of Pointe Arago, is a hill 61m high, on the summit of which stands the ruins of Fort de Marigot.

The bight between Pointe Arago and the fort is known as Baie de la Potence. The SW projection, 0.8 mile WSW of Fort de Marigot, rises to Morne Rond, a prominent hillock 16m high. Mont Diamant, 275m high, is a prominent hill one mile ESE of Morne Rond, near the N end of the short W chain of the central mountains of the island.

Mont de Marigot, with an elevation of 178m stands 0.3 mile NW of Mont Diamant and must not be mistaken for it. The bight between Morne Rond and Pointe Falaise is known as Baie Nettle.

A radio tower stands 0.2 mile SSW of Fort de Marigot.

8.25 Marigot (18°04'N., 63°05'W.) (World Port Index No. 11360), the capital and port of entry for the French part of Saint Martin, lies SE of the ruined fort. A light is displayed

WSW of the fort.

A concrete pier, protected by a curved breakwater extending about 280m W, at which ships drawing up to 3.5m can berth, projects NW from the point on which Fort de Marigot stands. A vessel should approach the pier with the light ahead bearing 143°.

A pier, situated about 0.75 mile NNE of the Marigot concrete pier at Port de Galisbay, extends about 200m WSW and has been reported to accommodate vessels of 170m in length in a depth of 5.5m alongside.

Two SBMs, best seen on the chart, lie close E and NE of Pointe Falaise.

Anchorage.—Baie de la Potence, about 0.5 mile N of Marigot Light, affords good shelter to coasters from all but W winds, which rarely blow with strength. Several mooring buoys are located in the bay.

This bay is clear of dangers in its N part, with depths of over 4m from 0.1 to 0.2 mile offshore. In the S part a shoal, with a depth of 2.4m, lies 0.3 mile N of Marigot Light.

Baie Grande Case, three miles NE of Baie du Marigot, provides anchorage for small vessels, in 5.5 to 7.3m.

A stranded wreck lies about 0.2 mile N of Fort de Maigot as seen on the chart.

Saint Barthelemy

8.26 Saint Barthelemy (17°54'N., 62°50'W.), a French island, lies about 11 miles SE of Saint Martin, and is separated from it by Saint Barthelemy Channel. The coasts of the island are very irregular and indented by many small bays separated from one another by precipitous rocky promontories.

The island can be identified by a group of hills, which lie close together on its E side. The N and E coasts of the island are boarded by a coral reef which is always visible.

The coasts of Saint Barthelemy are very dangerous at night, particularly its N side, off which there are a number of islets and rocks. This side should always be approached with greatest caution. Marine nature reserves have been established around Saint Bethelemy, as best seen on the chart. Fishing with nets, traps, and underwater fishing is prohibited.

Saint Barthelemy Channel is about 5 miles wide between the off-lying dangers on either side and may be freely navigated by day, but at night it is dangerous, as the depths of from 22 to 25.6m are so regular, that they give no indication of the proximity of the rocks on either hand.

Rocher Table (17°58'N., 62°56'W.) lies 4.5 miles NW of the NW extremity of Saint Barthelemy. The island is steep-to on all sides and almost barren. An islet lies close NE of Rocher Table. Mancel (Groupers), SW of Rocher Table, is a small group of nearly barren islets with steep sides. A number of low-lying rocks lie on a reef that extends SW from Groupers.

Ile Fourchue (17°58'N., 62°54'W.) is the largest and highest of the islets NW of Saint Barthelemy. The islet has five pointed hillocks which from a distance appear as separate islets.

Anchorage, sheltered from the prevailing winds, may be taken by small vessels with local knowledge, in the bay on the SW side of the Ile Fourchue. A marine reserve has been established up to approximately 700m around the circumference of Ile Fourchue. Vessels must remain clear of this area as the designated restricted area.

A dangerous rock lies about 0.2 mile WSW of the S extremity of the island. Several wrecks, with a depth of 22m, lie between Ile Fourchue and the Island of Groupers. Local knowledge is required.

Landing can be effected on a sandy beach in the NE corner of the bay.

8.27 Ilot Boulanger (17°57'N., 62°52'W.) lies about 1.5 miles E of Ile Fourche. The islet is small, barren and rocky. Ile Pele (Ile Navire) lies 0.2 mile farther E.

Ships should not attempt to pass between these islets. Ilot Baril de Boeuf, a small black rock, lies about 1.5 miles W of the NW extremity of Saint Barthelemy.

Ile Chevreau and Ile Fregate are two high islets, covered with grass and bushes, which lie off the N coast of Saint Barthelemy. Ile Toc Vers is a pointed islet located 0.7 mile E of Ile Fregate The passage between the two islets should not be attempted. Ilot La Tortue, which is flat and rocky, is located about 0.5 mile NW of the NE extremity of Saint Barthelemy.

Ile Coco is rocky with a wooded summit and lies 0.5 mile S of the S coast of Saint Barthelemy.

Caution.—Nature reserves have been established around Saint Barthelemy, Ile Fourchu, Ile Fregate, and Ile Toc Vers. The area limits are best seen on the chart.

8.28 Gustavia (17°54'N., 62°51'W.) (World Port Index No. 11380) is the capital and principal port of Saint Barthelemy. The port lies on the W coast of the island.

Gustavia

Tides—Currents.—The tidal rise in the port is small and influenced by the wind.

Depths—Limitations.—On the NE side of the basin, the Main Dock, with a length of 80m and a depth of 5m alongside, provides 6 berths and a ro-ro facility. The Fish Dock is at the SE end of the Main Dock.

On the SW side of the basin, there is a privately-owned quay and two small jetties.

The port basin shows depths of less than 5m, shoaling about 0.1 mile from its head.

Aspect.—A light is shown on Fort Gustavia, which stands on the N side of the port.

Pilotage.—Pilotage is not compulsory but should be requested through the port. Requests for a berth must be placed at least 48 hours in advance of ETA.

Contact Information.—The harbor may be contacted, as

Fort Gustavia Light

follows.

1. VHF: VHF channel 12
2. Telephone: 590-590-276697
3. Facsimile: 590-590-278154
4. E-mail: plaisance@portdegustavia

Anchorage.—Anchorage is available, in a depth of 13m, with Fort Gustavia Light bearing 108°, La Baleine Light bearing 200°, and the NE tangent of Gros Ilets bearing 147° as indicated on the chart.

Anchorage can be obtained, in a depth of 11m, with Fort Oscar, 0.2 mile SW of Fort Gustavia, bearing 133° and La Baleine bearing 225°.

Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo must anchor 0.7 mile N of Le Pain de Sucre.

Inner anchorages, with a least depth of 4.9m, is available to the E of Gros Ilets. This anchorage is sheltered from the prevailing winds but is exposed to the SW and W, and is unsafe during the hurricane season.

It is reported that anchorage is prohibited in the fairway to the inner port.

Caution.—Several dangers lie in the approach to Gustavia. Gros Ilets lie on a reef 0.4 mile WNW of Fort Oscar. La Baleine, a small rock, awash, and marked close W by a lighted beacon, lies about 0.2 mile W of Gros Islets; a 5m patch lies 91m S of La Baleine.

The passage between La Baleine and Gros Ilots has a least depth of 9.1m. Les Saintes are three low rocky islets about 0.2 mile SW of Fort Oscar and lie on a reef which extends 0.1 mile NNE from the center islet. A stranded wreck lies close NE of Les Saintes. A wreck lies about 140m N of the outermost islet of the a Baleine Des Gros Islets.

A restricted area, where anchorage is prohibited, lies ESE of the Les Petits Islands and close S of Anse de Grand Galet.

Vessels are urged to contact the local authorities for the latest information on this port before planning a voyage here.

A marine sanctuary, the boundaries of which are best seen on the chart, lies in the approach to the harbor.

Saba

8.29 Saba (17°38'N., 63°14'W.), which is a public body of the Netherlands, is a prominent island, located about 26 miles SW of Saint Barthelemy. The island rises nearly perpendicularly from the sea, but Mount Scenery, its 870m high summit, which is reported to be visible for 30 miles on a clear day, is usually enveloped in clouds. The island is a mass of rugged mountains, with deep precipitous ravines.

The coast forms virtually no bays or bights, and the mountains fall off so steeply into the sea that there is nothing that can be called a beach.

Two conspicuous radio masts stand on the island at the summit of Mount Scenery and on Paris Hill. A light is exhibited at Saint John's, 0.5 mile ENE of Fort Bay.

There is a small harbor in Fort Bay, which provides good shelter from the prevailing NE wind and E swell.

A breakwater projects 91m from the shore of the harbor. The N side of the breakwater is quayed with depths of 7.3m alongside its outer end shoaling to 3.4m at its root. A pilot is available if requested in advance.

Anchorage.—Anchorage may be obtained off Fort Bay, in Ladder Bay. There is good temporary anchorage off Fort Bay about 0.1 mile from the head of Fort Bay breakwater, in a depth of 15m, good holding ground, but the anchorage is exposed to E winds.

There is a good temporary anchorage in Ladder Bay, when the weather is good, in depths of 17 to 22m, with the stone steps at Ladder Landing bearing 152° about 0.2 mile. This anchorage is generally considered the most suitable for a prolonged stay. Anchorage is also available in Wells Bay close W of Torrens Point, in 22 to 27m, sand bottom. The bank is steep in this area and a kedge anchor is advised to prevent swinging.

Caution.—A rock, awash, lies about 0.3 mile WSW of Torrens Punt. A prohibited anchorage area lies off the W coast of the island between Tent Point and Ladder Bay as shown on the chart. A large restricted area lies centered on Saba Bank, about 16 miles SW of Saba, and can best be seen on the chart.

Saba Bank

8.30 Saba Bank (17°25'N., 63°25'W.) is an extensive bank, with its NE side lying about 2.7 miles SW of the island of Saba. From here the bank extends about 34 miles SW, with a least reported depth of 7.3m located about 9 miles SW of Mount Scenery. A depth of 8.2m lies about 10 miles S of the island.

The E side of the bank is fringed with a ridge of living coral, sand and rock, nearly 30 miles in length. The depths over the ridge range from 11 to 35m.

Westward of this ridge, except for a few 16.5m and 18.3m coral patches near the S side of the bank, and a 16.4m patch near the W end of the bank, the bottom is clear white coral sand with depths of from 21.9 to 36.6m, gradually increasing towards the edge of the bank, but ending abruptly in depths of

Saba

54.9m.

In depths of under 20m, the bottom can be distinctly seen. The current over Saba Bank is reported to be negligible.

Caution.—Reports have indicated that shoal patches, with less water than charted may be encountered on Saba Bank. Deep-draft vessels, particularly those drawing 12m or more should remain outside of the 100m curve where possible.

It is reported that oil rigs working on Saba Bank are very well lit but that they use large off-lying buoys which are not lit.

A wreck, with a minumum depth of 7m, is reported to lie in position 17°26.8'N, 63°35.4'W.

Sint Eustatius

8.31 Sint Eustatius (17°29'N., 62°59'W.), a small underdeveloped Dutch island having public body status within the Netherlands, has its N extremity lying about 14 miles SE of the island of Saba. The island is dominated by an extinct volcano near its SE extremity.

The island is devoid of trees except for the slopes of the volcano. A group of rugged hills are located in the NW part of the island.

Caution.—Vessels navigating off the W side of Sint Eustatius are advised to keep a good look out in order to avoid fish pots, up to 3 miles off the coast. The waters around Sint Eustatius between the high-waterline and the 30m depth contour have been designated as a nature reserve, the Statia National Marine Park. With the exception of the designated anchorage areas, anchoring is only allowed with written permission from the local authorities. For further information, see www.statiapark.org.

An SBM is located about 1.2 miles WSW of the N point of Sint Eustatius; a submerged oil pipeline extends ESE to the shore. Submarine cables are located SW of Gallows Bay and may be best seen on chart.

Mariners must report on any communicable disease which may have occurred on board, prior to arrival. Clearance will normally be granted when the pilot boards.

8.32 Oranjestad (17°29'N., 62°59'W.) (World Port Index No. 11390) is located in Oranjestad Baai, on the SW side of Sint Eustatius. A culvert appearing like a set of stairs descends the hill fronting Oranjestad, and is conspicuous from SW. It may be identified by a conspicuous white flagstaff inside the walls of a fort, which fronts the town.

The town sits on a flat plain, between and lower than the hills mentioned above. A steep-to hill, with a switchback road cut into it, fronts the town. Storm signals are displayed by day only and are identical to U.S. storm signals.

Tides—Currents.—Currents have been observed at the jetty up to a rate of 2.5 knots N, and 1.2 knots S, their maximum rates occurring at springs. Depths of 20.1m lie between Saint Eustatius and Saint Christopher.

Depths—Limitations.—There are channel depths of 9 to 12m over a width of 228m.City is protected by a breakwater, and stands at the S end of Oranjestad Baai. This pier, is 100m in length marked by a light at its head, it extends WSW of the coast in Gallows Bay just S of the town.

Sint Eustatius—Fort Orange

Oranjestad—Tumble Down Dick Bay

A jetty, with depths alongside of 19m extends 0.5 mile WSW from the S side of Tumble Down Dick Bay 1.5 miles of the N point of Sint Eustatius. A light is exhibited at the head of the jetty. A platform, pipeline, and two mooring buoys are located close N of the jetty. For berthing information see the table titled **Oranjestad Harbour—Berth Infomation**.

Aspect.—A light is exhibited, at an elevation of 40m, at Oranjestad.

The approach is free of charted dangers.

Pilotage.—Pilotage to and from the jetty is compulsory. An ETA is required 72 hours, 48 hours, and 24 hours in advance. Pilots, equipped with VHF channel 14 or 16, are available 24 hours and board 2 miles seaward of the jetty.

Regulations.—The terminal should be contacted by VHF for berthing and anchoring instructions about 4 hours prior to the arrival of the vessel. There are two tugs available. A restricted area has been established for the Statia Terminal SPM. The area is between the parallels 17°30'N and 17°31.5'N and the meridians of 63°00'.50”W and 63°02'.00”W. Vessels may not enter or maneuver within the restricted area without a Pilot and or a Mooring Master aboard, unless given specific instructions from the crude oil storage terminal control station. General mooring and hose connection operations are to be reviewed by the terminal manager.

Anchorage.—There are a few rocky spots, which should be avoided but, generally speaking, the bottom is sandy and the holding ground good.

It is reported that an uncomfortable swell often runs in the bay.

The best anchorage is about 0.4 mile offshore, in a depth of 18m, sand, with the SE church bearing 073° and the SW extremity of the island in line with Brimstone hill, Saint Christopher, bearing 131°.

Oranjestad Harbour—Berth Infomation

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Oranjestad Town					
Pier	25m	1.5m	—	—	Supplies and tourist.
Quay	47m	—	—	—	Supplies, tourist, and inter-island traffic.
Spillway ramp	—	—	—	—	Ro-ro. Supplies, tourists, and inter-island traffic.
Pier NE	90m	4.0m	—	—	Dolphins increase berthing length to 133m. Supplies, tourists, and inter-island traffic.
Pier SW	62m	4.3m	—	—	Dolphins increase berthing length to 105m. Supplies, tourists, and inter-island traffic.
Statia Oil (Tumble Down Dick Bay)					
Barge Dock	32m	8.0m	—	—	Dolphins increase berthing length to 99m. Supplies and clean products.
Floating hose	—	9.0m	—	—	Clean and dirty products.
Station #1					
Floating hose	—	16m	106.7m	14.3m	Petroleum products
Station # 2 E Berth					
Floating hose	—	16.0m	213m	—	Petroleum products.

Oranjestad Harbour—Berth Infomation					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Station # 2 W Berth					
Berth No. 1 (South Face)	33m	—	276m	28.7m	Petroleum products.
Berth No. 2 (North Face)	33m	18.5m	241m	16.7m	Petroleum products.
Statia SPM TankerBerthing					
SPM	—	64m	415m	28m	Petroleum products (17°31'N., 63°01'W.)

Three anchor berths, designated A, B, and C, are located as best seen on the chart.

Caution.— A stranded wreck exists on the shore in the N part of the bay SSE of Fort Royale.

Saint Christopher (Saint Kitts)

8.33 Saint Christopher (Saint Kitts) (17°20'N., 62°45'W.), of volcanic origin, and lies about 6.5 miles SE of Saint Eustatius. The island is nearly divided into two parts at its SE end, being connected by a narrow neck of sand.

Mount Liamuiga (Mount Misery) (17°22'N., 62°48'W.) rises conspicuously to form the summit of the rugged central ridge at the NW part of the island. The summit is usually covered with clouds.

Further SE a radio mast stands at the summit of Ottleys Hill. A light is shown from a tower 2 miles E of Monkey Hill just E of the airport. Brimstone Hill, 2.5 miles SW of Mount Misery, is prominent and easily identified by fortifications on its summit.

Sandy Point Village is situated about 1.5 miles NW of Brimstone Hill. A short pier, on which a light is exhibited, lies at the N end of the village. A church, having a yellow tower with a red top, stands about 0.5 mile SE of the pier.

Saint Christopher—Mount Liamuiga and Sandy Point Village

Anchorage.—The best anchorage lies off the village, in depths from 9 to 11m. Good marks for anchor bearing are reported to be the village church and a short pier which shows a light.

Temporary anchorage can be taken in Old Road Bay, 2.5 miles SE of Brimstone Hill, in depths of 16.5 to 18.3m, a short distance SE of the village, and about 0.3 mile offshore.

Small craft can find good anchorage in Ballast Bay 0.6 mile NNE of **Rock Point** (17°14'N., 62°39'W.), in depths from 2.7 to 5.5m, sand, and also in the bay 0.4 mile NNW of Horse Shoe Point, in a depth of 5.5m, sand bottom.

Majors Bay, on the E side of Horse Shoe Point, provides sheltered anchorage for small craft at the N end of the bay, in a depth of about 4.6m.

Caution.—Caution is advised as the hydrography is incomplete around Saint Christopher and Nevis.

8.34 Basseterre (17°18'N., 62°43'W.) (World Port Index No. 11400) is the capital of Saint Christopher and is situated on the SW side of the island, at the head of Basseterre Bay. The bay forms an open road-stead and is free from dangers, except for two dangerous wrecks, best seen on the chart.

Depths—Limitations.—Saint Kitts Deep Water Port, has a main berth, which at the SW end. For berthing information see the table titled **Basseterre—Berthing Facilities**.

Aspect.—Conspicuous objects include the white chimney of a sugar factory, 86.3m high, about 0.5 mile NNE of the E end of the town; the obelisk of the War Memorial about 0.2 mile NE of Fort Thomas Light; and a sugar warehouse, on the E side of the bay, 0.4 mile N of Fort Smith.

Pilotage.—Pilotage is not compulsory. The boarding ground lies 1 mile SSE of Port Zante Cruise Terminal.

Vessels should send their ETA 24 hours prior to arrival. Tugs are not available, but a launch can be used to assist in berthing.

The port can be contacted, as follows:

1. VHF: VHF channels 6, 12, 14, and 16
2. Telephone: 1-869-465-8121
   1-869-465-8122
   1-869-465-8123
3. Facsimile: 1-869-465-8124
   1-869-466-2258
4. E-mail: info@scaspa.com

Anchorage.—Anchorage can be taken in 14.6 to 16.5m, sand, with the conspicuous obelisk bearing 306°, distant 0.7 mile.

Basseterre

Port Zante Cruise Terminal

Good anchorage for small vessels may be found, in depths of 9.1 to 11m, with the cupola on the Treasury building bearing

The Narrows

The Narrows

8.35 The Narrows (17°13'N., 62°37'W.) is the name given to the channel between the SE end of Saint Christopher and the NW extremity of the island of Nevis. The channel is about 1.7 miles wide and is navigable by vessels drawing up to 5.5m with local knowledge.

Good anchorage can be obtained in the W part of the channel, in a depth of 11m, with Mosquito Bluff bearing 022°, and the N extremity of Nevis bearing 087°, good holding ground.

Basseterre—Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Basseterre-Cargo Port			
Cargo Berth	122m	—	Container and general cargo.
Basseterre Deep Water Port			
Main Berth (Southwest end)	121m	9.0m	General and bulk cargo. With berthing dolphin, can accommodate vessels up to 270m in length.
Ferry Terminal	188m	2.1m	Daily service to Charlestown.
Ro-Ro Berth	116m	5.4m	Containers and barges.
Private Wharves			
Coast Guard Pier	68m	3.6m	—
Sugar Factory Pier	90.9m	2.4m	Cargo handling.

Basseterre—Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Port Zante Cruise Terminal			
Eastern Berth	242.4m	9.0m	Cruise vessels.
Western Berth	242.4m	9.0m	Cruise vessels.
Inner Berth	242.4m	6.3m	Small cruise vessels.
Tanker Terminals			
Shell CBM Berth	181m	5.1m	Three mooring buoys.
Texaco CBM Berth	181m	6.0m	Two mooring buoys.

Nevis Peak

Nevis

8.36 **Nevis** (17°09'N., 62°34'W.), a British island, lies almost 2 miles SE of Saint Christopher, and is of volcanic origin. Nevis Peak rises in the center of the island and is mostly cloud covered. Hurricane Hill (Round Hill) stands on the N side of the island and is easily identified, being large, and rising to a peak.

Nevis is reef-fringed except for a short stretch on the NW side and should not be approached in depths of less than 20m unless proceeding to the anchorage off Charlestown.

A light is exhibited from off Dogwood Point approximately 2.7 miles SSE of Fort Charles.

8.37 **Charlestown** (17°08'N., 62°37'W.) (World Port Index No. 11410), the capital of Nevis, is situated on the W coast of the island. A concrete pier, projects 118m from the coast, with a depth of 8.5m alongside. Landing steps on the N side of its head projects abreast the town.

A prominent radio mast stands near the root of the pier. Two oil tanks, are situated close S of the root of the pier.

Pilotage.—Pilots board about 2 miles S of Charlestown.

Signals.—A pennant is displayed when winds between 28 and 33 knots are expected. A red flag with black center is dis-

Charlestown—Main Pier

played when winds between 34 to 63 knots are expected. When a hurricane is expected two red flags with black centers are displayed; at night red flares are used. All signals are displayed from the Belfry, approximately 1.5 miles NNE of the root of the pier.

Anchorage.—During the prevailing NE winds, anchorage can be taken 0.5 mile W of the pier off Charlestown, in 9.1 to 11m.

Caution.—In has been reported (1992) that two mooring buoys, about 90m apart, lie about 0.1 mile offshore from a petroleum tank farm, 0.8 mile SSE from Fort Charles Radio Station Light in the vicinity of Long Point.

An ODAS buoy has been positioned about 63 miles SW of Nevis.

8.38 Redonda (16°56'N., 62°21'W.), a barren rocky islet, lies about 15 miles SE of Nevis.

Redonda stands on a detached bank with depths on it between 43.9 to 54.9m.

The bank extends 9 miles N and 4 miles SW of the islet. The only landing place is a small pier on the S side.

Anchorage.—Anchorage can be taken, in 32.9 to 36.6m, sand, about 0.3 mile NW of the pier.

Pinnacle Rock lies 0.2 mile off the SE side of Redonda.

Redonda

Montserrat

8.39 Montserrat (16°45'N., 62°12'W.) lies about 11 miles SE of Redonda. The island presents a rugged and uneven appearance from seaward. A number of peaks, wooded to their summits, are sometimes enveloped in clouds.

The highest peak which has an elevation of 914m is attained near the S end of Soufriere Hills. The coasts of the island are bold and steep-to.

The 20m curve lies in places within 0.2 mile of the island. Depths of less than 12.8m extend nearly 0.5 mile W from Bransby Point, the W extremity of the island.

Tides—Currents.—Tidal currents along the coast attain a rate of about 0.5 knot, except off the N and S extremities, where the W currents attain rates of up to 2 knots but the E currents are weak.

Aspect.—Two lights for the use of aircraft are exhibited in the vicinity of Blackburne airport on the E coast 1.5 miles ENE of the summit of Center Hill.

Radio masts stand 1.5 miles NNE of the summit of Center Hill.

8.40 Little Bay (16°48'N., 62°12'W.) is situated on the W coast of the island about 0.5 mile S of Rendezvous Bluff. Little Bay is currently used as Montserrat's main port of entry following the destruction of the port of Plymouth by volcanic activity.

Depths—Limitations.—A 95m-long concrete jetty extends SE from shore. The inner berth has alongside depths of 1.5 to 6.7m; the outer berth has alongside depths of 4.2 to 7.6m. It has been reported that the jetty can accommodate cargo, ro-ro and ferry vessels. It is advised to verify water depths with the port authority prior to arrival.

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

1. VHF: VHF channel 16
2. Telephone: 664-491-2791
3. Facsimile: 664-491-8063
4. E-mail: monpa@candw.ms

Little Bay

Anchorage.—There are deep and open anchorages available as best seen on the chart.

Prohibited anchorage areas are located at Potato Hill Reef (16°48.0'N., 62°12.4'W.) and Carr's Bay Reef (16°47.1'N., 62°12.7'W.).

8.41 Plymouth (16°42'N., 62°13'W.), once the capital of the island, is situated on the SW side of the island. The city of Plymouth was destroyed in 1997 by volcanic ash.

The port of Plymouth is closed until further notice due to volcanic activity. All traffic is now routed through Little Bay, 6 miles N of Plymouth, about 0.5 mile S of Rendezvous Bluff, a prominent headland.

Plymouth

Anchorage.—The recommended anchorage for large vessels is in 16.5m, about 0.5 mile offshore, about 1 mile WNW of the town. Small vessels can anchor anywhere off the W side of the island, including Cars Bay, Old Road Bay, and Fox Bay.

There is a prohibited anchorage off Plymouth, the limits of which can best be seen on the chart.

Caution.—Due to continued volcanic activity on the island of Montserrat, mariners are advised to avoid the area. The area W of Montserrat is subject to heavy ash falls. It is reported (1997) that a delta is forming on the E coast in the vicinity of position 16°43.1'N, 62°07.6'W. Toxic gases and abnormally high seas may be expected S of Montserrat.

It was reported (2004) that due to volcanic activity, an exclusion zone has been established on the E and S coasts to a minimum distance of 2,000m off the present shoreline.

Barbuda

8.42 Barbuda (17°38'N., 61°48'W.) lies about 58 miles ESE of Saint Barthelemy. The island is low, sandy, and scantily wooded on its N, S, and W points.

A hotel, partly obscured by tall shrubs and visible from a considerable distance under favorable condition, stands on Cocoa Point. It has been reported (1992) that another hotel, with a water tower and a red roof, had been constructed close to the point.

Martello Tower, partly ruined and difficult to identify because of the surrounding trees, stands near the beach about 2 miles E of Palmetto Point; under favorable conditions, the tower is visible from a considerable distance.

Monserrat delta forming from volcanic activity

Barbuda—Martello Tower

Barbuda—The Highlands (background)

About midway on the E coast, a two mile stretch of cliffs, rise to a plateau called The Highlands, which is the highest part of the island. It stands out well and is a prominent feature.

Caution.—Palmetto Point is reported to be extending S.

8.43 Codrington (17°38'N., 61°49'W.), the only settlement on the island, is fronted by a shallow lagoon which occupies about all the W part of the island. Depths in the lagoon are from 1.5 to 3.7m. In the village is a church; and in front of the village is a landing wharf.

Barbuda is administered from Antigua, to which it is linked by radiotelephone; there is a government office and a police station on Barbuda.

There is an airstrip immediately S of Codrington from which there are flights daily to Antigua. Another airstrip at Cocoa Point is privately owned.

Reefs, which dry in some places, fringe the E side of Barbuda, 0.5 to 0.7 miles offshore. Cobb Reef, a continuation of the reef on the E side of the island, lies up to 1.5 miles offshore and fronts a foul bight between Hog Point and Goat Point, the N extremity of Barbuda.

Caution.—Caution is advised when passing N of Barbuda because of the low N end and the fronting reefs are fully 7 miles N of the Highlands, which should not be taken for the N end.

The greater part of the W coast of the island is a low sandy ridge of land which separates the lagoon at Codrington from the sea. Numerous detached coral heads on which the sea does not break, extend up to 2.5 miles off the NW end of the island Goat Reef lies at the N extremity of the coral patches, and extends about 2.5 miles N of Billy Point.

The S side of Barbuda is the most dangerous and must be approached with caution for soundings are of little help. Palmetto Point, the SW extremity, was reported to have extended nearly 1 mile SW.

Between Cocoa Point and Spanish Point, at the SE part of Barbuda, a bank extends about 2 miles S from the coast.

Palaster Reef, nearly awash and always visible, is on the outer edge of the bank.

8.44 Codrington Bank (17°28'N., 61°47'W.), in the middle of which there is depth of 9.4m, extends about 4.5 miles S of the extremity of Dodington Bank.

Two banks, with depths of 14.6m and 13.1m, lie 3 miles W and 3.7 miles WSW, respectively, of the S end of Codrington Bank.

A shoal, with a least depth of 13.1m, lies about 3 miles E of the S end of Codrington Bank.

There may be less water than charted on the banks and shoals described above.

A dangerous wreck is situated off the E coast in position 17°38'35"N, 61°44'10"W.

A depth of 9.1m has been reported in position 17°45'12"N, 61°50'45"W.

Codrington Shoal, with a least depth of 4m lies 5 miles SSE of Palmetto Point. Dodington Bank, 5.5 miles SE of the same point shows a least depth of 4.6m.

A depth of 3m lies about 1.5 miles S of Dodington Banks.

Good anchorage may be obtained on the S side of the island, in a depth of about 10.1m, with **Palmetto Point** (17°35'N., 61°52'W.) bearing 293°, and Martello Tower bearing 012°, distant about 1.2 miles.

When approaching this anchorage, care must be taken to keep Martello Tower bearing not less than 012°, in order to avoid Codrington Shoals.

Anchorage.—During prevailing winds, good anchorage can be taken, in 11m, about 3 miles off the W side of Barbuda. The anchorages are exposed to rollers from November to May.

A small boat harbor, consisting of a wooden wharf, is situated on the W side of an L-shaped neck of reclaimed land about 0.7 mile E of the Martello Tower.

It is the only port of entry into Barbuda and the main landing place for boats plying between Antigua and Barbuda.

Sand from a sand-mining operation carried on between the Martello Tower and Palmetto Point is loaded at a terminal situated at the seaward end of the reclaimed neck of land. A sand-loading chute situated on the spit looks similar to a crane.

Antigua

8.45 Antigua (17°05'N., 61°47'W.) lies with its NW extremity 24 miles S of Barbuda. Saint John's, on its NW side, is the capital and the only town of importance.

The island is of moderate elevation and its heights, which are more or less confined to the SW part, are seldom obscured. Boggy Peak, the highest on the island, is conspicuous and is identified by a lighted radio mast on its summit.

Antigua is deeply indented on almost every side, this is particularly so on its NE side where there are many bays and creeks navigable by small vessels. The island should be approached with great caution as less water than charted may be encountered.

The N coast of Antigua is fronted by a line of coral shoals, best seen on the chart. Boon Channel lies between the shoals and the coast, offering an approach to North Sound, Parham Sound, and Parham Harbour.

Diamond Bank, Salt Fish Tail, and the other dangers in the approach channel are described in paragraph 8.51.

Boon Bay (17°10'N., 61°49'W.) and Port Royal Bay lie between Boon Point and Beggars Point, about 1.7 miles E.

The shores of Boon Bay are low, rocky and fringed by shoals. A chain of irregular hills extends about 2 miles SE of Boon Point.

Mount Pleasant, the highest, has an elevation of 134.7m and may be identified by its flattened summit. Judge Bay is the only place in the area where a landing can be made.

Hodge Hill, 46.9m high, with a tower on it, lies about 0.2 mile W of **Beggars Point** (17°10'N., 61°48'W.) and is prominent.

There is a prominent hotel situated about 0.3 mile S, and another hotel about 0.2 mile W of the same point.

A wind turbine, with an elevation of 168m stands on New Winthorpes hill 0.3 mile SE of the summit of Mount Pleasant. Prickly Pear Island, which shows a light, lies less than 0.5 mile NNE of Beggars Point.

Jarvis Shoal (17°12'N., 61°49'W.) lies about 1.5 miles NW of Beggars Point. Horse Shoe, a reef, which is awash at LW, lies about a mile E of Jarvis Shoal.

Kettle Bottom Shoals forms the E part of a chain of reefs and shoals which extend around the N side of Antigua to a position close NW of Bird Islet Reef.

Long Island (17°09'N., 61°45'W.) lies to the SW of Bird Islet Reef. The island is low, but has some trees on its W side. Three Fathom Bank, about 1.7 miles NE of Long Island, has a least depth of 5.5m.

Four Fathom Bank, the outermost danger, lies about three miles NE of Long Island, and has a least depth of 4.1m.

8.46 Parham Sound (17°09'N., 61°47'W.) is approached from Boon Channel, between a reef extending N of Beggars Point (Hodge Point) and **Ward Shoal** (17°11'N., 61°47'W,.) with a least charted depth of 0.9m. Horse Channel offers access to Boon Channel and Parham Sound, but is unmarked, and not recommended.

The sound offers anchorage for vessels with local knowledge, clear of the shoals, shoal patches, and named dangers, best seen on the chart. The holding ground within the sound is reported to be good, and protected from rollers.

A jetty, with a length of about 107m and depths of 7.3 to 7.6m alongside its outer part, extends E from **High Point** (17°09'N., 61°47'W.). Shoal water lies 0.1 mile N and S of the jetty. A considerable swell is experienced at the jetty during periods of strong winds.

High Point is a liquefied gas terminal, normally used by tankers. Ro-ro facilities are reported to be available.

8.47 Parham Harbour (17°08'N., 61°46'W.) is entered between the point situated one mile SE of High Point and Crabs Point, about 1.2 miles E. A T-headed pier projects 0.1 mile from the shore, 0.5 mile SSW of Crabs Point.

The pier has a depth of 6.1m alongside its head. This jetty has bulk handling facilities for cement and facilities for ro-ro vessels. It is approached from Parham Sound by dredged channel, 91m wide and marked by buoys, which leads close SW of Maiden Island. The channel has a least depth of 4.9m.

Anchorage can be taken by vessels with local knowledge, in 12.8m, in North Sound about 0.4 mile E of Maiden Island.

Caution.—The anchorage area, with a submerged pipeline in its vicinity, is located E of Maiden Island and is best seen on the chart. Vessels should anchor in the center of the anchorage area and maintain a safe distance from the pipeline. The harbor can accommodate coasters with a draft of 4.0m, but the approaches are narrow and intricate, limiting vessels in length.

8.48 Guaina Island (17°07'N., 61°44'W.) lies with Nibbs Point, its SW extremity about 1.5 miles S of North Sound Point. A coral reef extends about 1.7 miles N from the N extremity of Guaina Island. Numerous islets and islands lie on this reef.

Between Guaina Island and Indian Town Point, about 2.5 miles SE, the coast is irregular and is indented by two bights, Guaina Bay and Mercers Creek Bay (Belfast Bay).

Both bights are well sheltered by the islets and reefs extending across their entrances, and have sufficient depths for coastal vessels, but the channels are intricate and the approaches dangerous.

Between Indian Town Point and Man of War Point, about 2.2 miles SSE, reefs extend in an almost direct line. A conspicuous white house stands on Friars Head, 1.7 miles SSW of Man of War Point.

Nonsuch Bay (17°04'N., 61°41'W.) is entered between Man of War Point and York Island, about 1 mile SW.

The bay is completely protected by reefs, which nearly dry, and is a secure harbor. Entrance is difficult and should not be attempted without local knowledge. In the harbor there are general depths of from 9.1 to 14.6m.

8.49 Willoughby Bay (17°02'N., 61°44'W.) is entered between Hudson Point and Isaac Point about 2.5 miles WSW.

The bay affords anchorage for vessels of moderate size, but it is so dangerous that it is seldom used. The entrances are narrow and intricate. A light is shown on Cape Shirley, situated about 2 miles SSW of Willoughby Bay.

Mamaro Bay is entered between the W entrance point of Willoughby Bay and **Indian Point** (Standfast Point) (17°00'N., 61°44'W.), the extremity of a projection, about 0.5 mile S. It was being developed as a holiday resort and yacht marina.

Anchorage.—A bar, with a least depth of 2.5m, lies across the mouth of the bay. A channel across the bar leads into the bay and is marked by spar buoys.

The bay affords safe anchorage in soft coral sand for small craft except in very strong E or S winds. Depths are generally between 3 and 4m. After passing the inner pair of buoys, small craft may anchor as convenient or head for the large wooden jetty.

A T-headed wooden jetty affords 22 berths for yachts up to 45m in length; moorings are available for larger craft.

English Harbour (17°00'N., 61°46'W.) is entered between Charlotte Point and Berkeley Point. The entrance channel to the harbor is about 91m wide, with depths of 5.5 to 7.3m.

Range lights lead into the harbor. The port authorities may be contacted by VHF.

Anchorage.—Good anchorage for small vessels can be obtained in Freeman Bay, with Freeman Point bearing 353° and Berkeley Point bearing 265°, in a depth of 7m. Large vessels may anchor, in a depth of 27.4m, 0.3 mile SSW of Berkeley Point.

8.50 Falmouth Harbour (17°01'N., 61°47'W.) lies about one mile W of English Harbour. The harbor affords anchorage

English Harbour

for a few vessels drawing up to 3m draft, but is seldom used except by small craft.

Range lights, each shown from a wooden pile, are situated at the head of the harbor: the front light is exhibited, at an elevation of 11m, about 1 mile NNE of Black's Point, the E entrance point; the rear light stands 290m NNE of the front light.

Johnston Point (17°02'N., 61°53'W.), the SW extremity, is low and rocky. A small islet lies close off the point. The point and the islet are difficult to make out except from the NW and SE.

From Johnson Point to Pearns Point, about 3.2 miles NNW, the coast is dangerous to approach because of a coral ledge which extends up to 1.7 miles offshore.

Depths.—Limitations.—There are depths of 11.6m and 14m, 2.7 and 3.7 miles WSW; there is a depth of 11.6m about 2 miles SW of Johnson Point.

Isolated pinnacles with depths over them as little as 11m extend nearly 10 miles WNW from Johnson Point.

Five Island Harbour (17°06'N., 61°53'W.) is entered between Pelican Point and a point faced by a distinctive red cliff, about 1 mile to the S. This harbor, though exposed to rollers, affords secure anchorage, during the prevailing winds to vessels drawing up to 4.9m.

There are depths of from 3.7 to 5.5m in the harbor, but Cook Shoal, a small rocky head, with a least depth of 2.7m, lies nearly in the middle of the entrance, about 0.5 mile SSE of Pelican Point.

8.51 Across the N approach to Saint John's Harbour lies an extensive coral reef from 1 to 2 miles off the N coast of Antigua.

Salt Fish Tail, with its E end about 1.5 miles NNE of **Boon Point** (17°10'N., 61°50'W.), the extremity of the island, extends 3.5 miles W and on it are numerous coral heads which dry in places. The reef can clearly be seen under favorable conditions.

Diamond Bank, 0.5 mile W of Salt Fish Tail, is separated from it by Diamond Channel. On it lies a coral ledge on which, though it is awash, the sea seldom breaks; when conditions are right the bank shows clearly as discolored water.

A disused metal observation tower 9m in height, reported (1996) destroyed, stands on a sunken barge lying on the W edge of the coral ledge.

A broad ridge, with depths of less than 15m, extends over 3 miles W from the coral ledge, and from it rise numerous pinnacles with depths of less than 12m.

Bannister Bank, with a least depth of 5.2m, lies 0.7 mile S of Diamond Bank.

Great Sister lies 1.2 miles WSW of Weatherills Point, 1 mile SW of Boon Point, at the W end of a ridge extending from the coast. It is a rocky islet, 12m high, with bushes on it and is easily identified.

Little Sister, a group at rocks 1m high, is also located on the ridge which is steep-to at its N and W edges; depths of more than 10m are found within 0.2 mile of Great Sister and Little Sister.

Saint John's Road, which lies between Great Sister and Goat Hill, 2.5 miles SSW, is encumbered by Warrington bank over which there is a least depth of 1.6m. The bank is marked by buoys on its N and W sides, and the sea may break on it in W or N winds.

There is a channel, 0.2 mile wide with depths of more than 10m, between the E end of Middle Ground, on which Warrington Bank lies, and James Ground, the shallow shore bank fringing the islands E coast.

In the approaches to Saint John's Harbour from S or W lies **Sandy Island** (17°01'N., 61°55'W.), marked by a light, partly covered with stunted trees and shrubs.

There is a boat channel, with a depth of 5.6m, between the coral reef on which Sandy Island lies and Weymouth Reef, 0.1 mile SW. A wreck stranded on this reef was fitted with a radar reflector.

Numerous shoals, with depths from 11 to 19m, lie in the approaches from WSW to WNW up to 10 miles from Sandy Island.

Jolly Harbor (17°04.3'N., 61°53.2'W.), a small craft harbor with modern facilities, is a port of entry. A lighted beacon situated about 0.3 mile SSE of Pearns Point marks the S side of the entrance. The dredged channel leads ENE and SE and has a reported depth of 4.0m (2002). Vessels with a draft over 3.2m should contact the marina for depth information prior to entry.

Saint John's Harbour (17°07'N., 61°51'W.)

World Port Index No. 11430

8.52 Saint John's Harbour is the capital and largest city of Antigua. It is the chief commercial port of Antigua and is safe from strong winds except hurricanes. It is exposed to swell, which, at times, can make berths at the deep water wharf uncomfortable.

Depths—Limitations.—The principal approach to Saint John's Harbour for ocean-going vessels is from NW, though smaller vessels of suitable draft may approach from SW through Sandy Island Channel.

Fort James Light, in alignment with the cathedral spires bearing 110° leads clear of the dangers in the vicinity of Sandy Island.

Great Sister, steered for on a bearing of 055°, leads through the center of Sandy Island Channel, and close aboard an 11m

Saint John's Harbour

Saint John's Harbour—Boggy Peak (lighted radio mast)

patch. It should be borne in mind that similar depths exist further seaward, and over the bank extending from the mainland. This channel should only be used by vessels with local knowledge.

A vessel of shallow draft may approach the harbor from N through Diamond Channel, between Diamond Bank and the W extremity of Salt Fish Tail, 0.5 mile E,. The E edge of Great Sister in line with the ruins of Denfields Mill, 3 miles S, bearing 176° leads through the channel passing close E of the least depth of 5m in the fairway.

Alternatively, the vessel may approach W of Diamond Bank with Fort Barrington in line with Mount Thomas, 1.5 miles S, bearing 173°.

In view of the proximity of shoal water with coral pinnacles neither of these tracks is recommended without local knowledge and neither should be attempted at night.

Boon Channel, entered N of Great Sister, leads round the N point of Antigua into Parham Sound, about 5 miles E, becoming narrow and tortuous at its E end.

Saint John's Harbour is approached through a buoyed channel about 90m wide.

The deep water harbor, and the turning basin, were dredged to a least depth of 10.7m. Range lights, in line bearing 113°, mark the dredged cut.

At its E end, the dredged channel opens out into a turning basin 366m wide.

East of the turning basin a buoyed area, dredged to a depth of

St. Johns Antigua Deep Water Terminal

8.5m, leads to Heritage Quay and Nevis Street Pier, which were developed to accommodate cruise ships.

It is advised that the sea island structure not be approached via the channel from the S between Middle Ground and James Ground. The swell and prevailing winds may compel the use of tugs. For berthing information see the table titled **Saint John's Harbour (Antigua) —Berthing Facilities**.

Aspect.—Boggy Peak (17°02'N., 61°52'W.), soon to be renamed Mount Obama, and the highest on the island.

Mount Thomas, 4 miles NNW; and Goat Hill, 1.5 miles farther NNW, can be identified easily.

Saint John's Harbour may be identified from the offing by the cathedral, a massive white building with two tall towers, their tops at an elevation of 50m.

Southeast of the city is a small flat wooded ridge of moderate elevation with a distinct peak at each end. Scott Hill, near its NW end, about 2.5 miles SE of **James Bluff** (17°08'N., 61°52'W.), is 97m high, while Belmont Hill, 0.5 mile SSE of Scott hill, is 117m high; the former is more rounded and less well defined, but both are prominent.

Saint John's Harbour (Antigua)—Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Basseterre Deep Water Port			
Deep Water Terminal	336m	10.6m	General cargo and ro-ro. Can berth up to three vessels simultaneously.
Heritage Quay North	152m	9.9m	Cruise ships. Dolphins lying 60m and 100m W of pier extend the berthing length to 210m.
Heritage Quay South	152m	9.9m	Cruise ships. Dolphins lying 60m and 100m W of pier extend the berthing length to 210m.

Saint John's Harbour (Antigua)—Berthing Facilities			
Berth	**Length**	**Depth**	**Remarks**
Nevis Street Pier North	136m	10.7m	Cruise ships. Dolphins lying 30m and 130m W of pier extend the berthing length to 300m.
Nevis Street Pier South	136m	9.0m	Cruise ships. Dolphins lying 30m and 130m W of pier extend the berthing length to 300m.
West Indies Oil Company Terminal	236m	10.6-12.5m	Consists of an alongside berth and a conventional mooring buoy.
Sea Island Jetty (Oil/LPG) Berth			
Jetty	60m	9.7m	Oil/LPG. The berth consists of a steel and concrete jetty flanked by dolphins joined by a catwalk. Vessels are berthed starboard side-to on the S side.
Sea Berth	—	15.0m	Oil/LPG. The berth consists of four mooring bouys attached to the end of a pipeline extending 236m from the coast.

Fort James Light is exhibited from Fort James close N of James bluff. For berthing refer to the **Saint John's Harbour (Antigua) Berthing Facilities** table.

Pilotage.—Pilotage is compulsory and should be ordered through the vessel's agent at least 48 hours prior to arrival. Pilots for the inner harbor may be boarded off the sea buoy, while pilots for the oil terminal board about 2 miles NE of Sandy Island.

The harbor pilot may be contacted on VHF channel 16, while the berthing pilot may be reached on VHF channel 6.

Contact Information.—The harbor authorities may be reached on 2182 kHz or VHF channel 16.

The oil terminal (call sign: Marine Center) may be reached on 2182 kHz or VHF channel 16.

Anchorage.—Saint John's Road offers excellent anchorage, clear of the oil terminal, in general depths of 14m. Tankers and vessels intending to bunker should anchor N and NW of Warrington Bank.

South of Warrington Bank comfortable berths may be found, in depths of 12m, good holding ground, between 0.8 and 1.2 miles ENE of Fort James Light.

An outer anchorage, for vessels with a draft of 16.5m, lies in position 17°10'N, 61°54'W, about 2 miles NE of Sandy Island.

Caution.—The range has been reported (1995) to be difficult to distinguish during the day; the front range light is also reported (1995) to be obscured at night by an intense white light.

Guadeloupe

8.53 Guadeloupe (16°15'N., 61°30'W.) is a French possession and consists of two large islands, Basse-Terre and Grande-Terre, and several off-lying island dependencies.

Winds—Weather.—The hurricane season normally runs from July to November and has caused significant storm damage in Guadeloupe in the past. During the hurricane season vessels must be moored.

Basse-Terre, the W island, is a rugged mass of lofty ridges and peaks which traverse the island NNW to SSE as a chain of almost inaccessible mountains.

La Soufriere, a volcano near the SE end of Basse-Terre, constantly emits smoke, and flames are frequently visible.

Near the center of the range rise two adjacent mountains named Les Mamelles.

A conspicuous television tower stands on the NW peak of **Les Mamelles** (16°11'N., 61°45'W.). Grande-Terre, the island, is comparatively low with two chains of hills.

Le Moule

Tides—Currents.—Between Guadeloupe and Antigua the current is W. Between Guadeloupe and Montserrat it is NW. In the vicinity of La Desirade Island, the current is NW with a considerable rate and W off the SW point of the island, attaining rates of two knots.

From time to time lesser depths than charted are reported in the deep water channel between Antigua and Guadeloupe.

A decade ago, two banks were known to exist. The N bank, entered about 13 miles S of **Cape Shirley** (17°00'N., 61°45'W.) had known depths of 69 to 90m.

The S bank, about 9 miles NNW of Pointe de la Grande Vigie, the N extremity of Grande-Terre, Guadeloupe, had known depths of 66 to 100m.

8.54 Pointe de la Grande Vigie (16°31'N., 61°28'W.) is

Guadeloupe—La Soufriere

the N extremity of Grande-Terre. The point has been reported to give good radar returns up to 20 miles. Anse Sainte-Marguerite, about 8 miles SSE of Pointe de la Grande Vigie, is an open roadstead encumbered by reefs.

Le Moule (16°20'N., 61°21'W.) is the only port on the NE side of Grande-Terre. The port is partly sheltered by reefs, but the anchorage space is very limited. From the month of October to the end of March, the port is unsafe.

A directional light is situated on the E side of the harbor, abreast the town. A light is shown on the shore of the harbor in front of the town.

By day, the harbor may be identified from its position in relation to the tall chimney of Duchassaing sugar factory situated about 1.2 miles SW of the W light, and to the conspicuous chimney 0.8 mile ESE of the same light.

A water tower stands 0.3 mile NW of the latter chimney. The port is little used except by coasters. Entry should not be attempted without local knowledge. The coast from Le Moule to Pointe des Chateaux, about 11 miles SE the E, is incompletely surveyed and steep-to.

From Pointe des Chateaux the coast trends about 17 miles W to Pointe Caraibe. This part of the coast is composed of sandy beaches fringed with coral and separated by irregular pointed crags. Coral reefs extend in places up to one mile offshore.

Saint Francois (16°15'N., 61°16'W.), a small port, lies about 6 miles W of Pointe des Chateaux. The port is used by small craft with local knowledge. The church in the town is conspicuous.

A directional light is exhibited from a metal framework tower on a white base, at the head of the harbor. The directional light leads through the channel in a depth of about 4m.

A jetty extends about 61m SW from the point S of the church. A light is exhibited at the head of the jetty.

During NE winds, anchorage can be obtained, in depths of from 11 to 11.9m, in a bottom of sand and broken shells, about 0.5 mile S of the town.

There is a yacht harbor, protected by breakwaters, 0.5 mile E of Saint Francois. It is approached through Passe Champagne, a channel dredged to a depth of 5m which leads to a basin dredged to 2.5m.

8.55 Sainte Anne (16°14'N., 61°23'W.) lies about 7 miles WSW of Saint Francois. W of the village there is a wooded bluff, at the foot of which stands a square tower.

Pointe-a-Pitre from SE

Small vessels can obtain anchorage, in a depth of 4.9m.

The entrance to the bay is encumbered by a chain of reefs through which there are two passes.

Grande Passe, the E, has depths of 8.2m, but is only about 30.5m wide. The depths in Petite Passe are less than 4.6m.

A vessel should enter Grande Passe, steering for the ruined tower of Plaisance mill in line with the E extremity of the square tower, bearing 329°.

The channel is marked on its NE side by a lighted buoy moored at the entrance to Grande Passe and by a lighted buoy moored 0.2 mile SSE of the shoal.

Petit Cul-de-Sac Marin (16°13'N., 61°34'W.) is a large bay that lies between the SW side of Grande-Terre and the E side of Basse-Terre. The bay is entered between Ilet du Gozier and the mouth of the Riviere Goyave, 6 miles SW.

The bay is encumbered by numerous dangers. The harbor of Pointe-a-Pitre is located in the NE bay area.

Depths—Limitations.—Mouchoir Carre, about 2.5 miles WSW of Ilet du Gozier, consists of two coral patches, on which lie several heads with depths from 2.9 to 4.9m. Mouton Vert consists of several coral patches, with depths of between 3.3 to 5.8m, located about 1 mile SSW of Mouchoir Carre.

Caye a Dupont (16°09'N., 61°33'W.), awash, lies about 1 mile S of the shallowest part of the NW patch on Mouton Vert. A conspicuous wreck was reported on the N side of the cay.

A shaol, almost awash, extends 1 mile NE from the mouth of the Riviere Goyave. Dangers extend E from Caye Martinique and Caye a Dupont, as may best be seen on the chart.

Pointe-a-Pitre (16°14'N., 61°32'W.)

World Port Index No. 11450

8.56 The port of Pointe-a-Pitre is well-protected and considered to be the best in the French Antilles. The town is the commercial center of Guadeloupe. Pointe-a-Pitre is not considered to be a safe haven in a hurricane.

Depths—Limitations.—The port can accommodate vessels up to 350m long at the container terminal in Bassin Jarry Sud though normally maximum length is restricted to 200m because, with a fresh breeze, the narrow entrance channel can be difficult for large vessels. The maximum draft allowed is 10m.

The channel through the harbor, as far as Bassin Jarry Sud, was dredged to a depth of 11m. It is marked on either side throughout its length by buoys.

Passe Ouest, the principal channel through Petit Cul-de-Sac Marin to Pointe-a-Pitre, in which there are depths greater than 10m, passes SW of **Mouchoir Carre** (16°11.2'N., 61°31.7'W.). It is 3.5 miles long from Lighted Buoy PP to the harbor entrance.

Passe Est, the channel from Lighted Buoy PP passing NE of Mouchoir Carre, is about 0.75 mile shorter, but has depths of

only 7.8m. The channel is marked by range lights, in line bearing 348°.

It is reported that the port can accommodate cruise vessels up to 70,000 dwt; a new cruise ship and passenger terminal known as Centre St. John Perse has been constructed in conjunction with the redevelopment of the port. For berthing refer to the table titled **Pointe-a-Pitre—Berth Information**.

Pilotage.—Pilotage is compulsory for ships over 50m long. Pilots board in the following positions:

1. Vessels approaching from the S—position 16°08.5'N, 61°30.0'W.
2. Vessels approaching from the E—position 16°10.0'N, 61°30.0'W.
3. Vessels with a draft of less than 7.4m—In the vicinity of Lighted Buoy MC.

The pilots can be contacted, as follows:

1. VHF: VHF channel 12
2. Telephone: 1-590-590-836818
   1-590-590-834137
   1-590-690-394255 (mobile)
3. Facsimile: 1-590-517-47624
4. E-mail: pilotage.guadeloupe@gmail.com

Regulations.—Vessels shall inform the Captain of the Port, by radio, of their ETA at Lighted Buoy PP 24 hours in advance; the ETA should be confirmed 1 hour in advance.

Anchorage.—The anchorages within Petit Cul-de-Sac Marin require local knowledge, therefore a pilot may prove beneficial.

Mouillage de Fleur d'Epee is located W of the harbor entrance range, and S of Ilot a Couchons. The area, clear of the shoals shown on the chart shows depths of 11.2 to 24m, bottom quality not stated.

A waiting anchorage is located E of the range line, but reports have stated that the area is not recommended due to the proximity of shoal water.

Mouillage de Goyave is situated NNE of the village of Goyave. Vessels anchor, in a depth of 6.7m, about 0.25 mile SE of the edge of **Ilet Tome** (16°09'N., 61°34'W.).

Anchorage is prohibited in an area S of **Ilet du Gosier** (16°12'N., 61°29'W.) due to submarine cables, as shown on the chart.

Four designated anchorages are centered at the following positions:

1. 16°12.5'N, 61°32.2'W.
2. 16°12.4'N, 61°32.5'W. (Tanker)
3. 16°12.2'N, 61°32.2'W.
4. 16°12.3'N, 61°31.1'W. (Coasters)

Caution.—It is reported (2008) that dredging operations, marked by four beacons, are in progress S of Grande-Terre about 4 miles E of Le Gosier. A partially submerged wreck lies about 450m E of the Pointe-a-Pitre entrance buoy and about 70m W of the coast near the 2m depth curve.

Pointe-a-Pitre—Berth Information

Berth	Length	Draft	Remarks
Port Bustamante			
No. 1	151m	7.5m	Cruise vessels
No. 2	177m	9.0m	Cruise vessels
No. 3	283m	9.0m	Cruise vessels
No. 4	283m	9.0m	Cruise vessels
No. 5	320m	9.0m	Cruise vessels
No. 6	320m	9.0m	Cruise vessels
No. 7	150m	8.3m	Break bulk, coastal, and ro-ro
No. 8	150m	8.3m	Break bulk, coastal, and ro-ro
Port De Jarry			
No. 9	140m	7.7m	Petroleum/bulk
No. 9 bis	—	4.8m	Barges/coasters
No. 10	50m	7.2m	Tankers, LPG, and bitumen
No. 11 (1)	150m	8.3m	Sugar and grain
No. 11 (2)	150m	8.6m	Bulk cargo and containers
Ro-ro Pier	—	8.5m	Stern ramp 24m in width
No. 12	188m	11.6m	Container and ro-ro
No. 13	160m	11.6m	Container and ro-ro
No. 14	240m	11.6m	Container and ro-ro
West Terminal Berth	475m	14.5m	Containers

Pointe-a-Pitre—Berth Information			
Berth	**Length**	**Draft**	**Remarks**
Other Berths			
Folle Anse (M.G.)	78m	9.0m	Sugar/ferry
Basse-Terre	212m	9.5m	Ro-ro

8.57 Grande Cul-de-Sac Marin (16°20'N., 61°35'W.) is the bay on the NW side of Guadeloupe that separates Grande-Terre from Basse-Terre. The bay is encumbered by islets and reefs and should not be entered without local knowledge.

The Riviere Salee flows between Basse-Terre and Grande-Terre and separates Grande Cul-de-Sac Marin to the N from Petit Cul-de-Sac Marin to the S.

Port Louis (16°25'N., 61°32'W.) (World Port Index No. 11470) is an open roadstead on the NE side of Grande Cul-de-Sac Marin. The church steeple in the town is conspicuous, as is a mill E of the town.

A light, concrete framework tower, 10m in height, stands near the shore about 137m NW of the church.

Anchorage may be obtained, in a depth of 11.9m, with the church steeple bearing 090°, and the mill seen between the steeple and the town pier.

Anse Bertrand (16°29'N., 61°31'W.) lies about 3.5 miles NNE of Port Louis. It is small sandy cove almost closed by rocks on which the sea always breaks.

A light is shown from the head of the cove. On the E side of the cove there is a black chimmey, and a church with a yellow tower, both are conspicuous.

During the summer months vessels may anchor off the cove in 10m, sandy bottom with some coral.

8.58 Baie de Sainte Marie (16°07'N., 61°34'W.) is entered between the month of the Riviere Goyave and a point about 2 miles S. Three distinctive red cliffs stand at the head of the bay. There is a small pier at the village situated at the end of the bay.

Vessels may obtain anchorage, in a depth of 4.9m, mud, about 0.15 mile off the above small pier. There are three passes leading to the anchorage, but local knowledge is necessary. Pilotage may be obtained from the pilot station on Ilet du Gosier.

Pointe de la Capesterre (16°03'N., 61°34'W.) lies three miles S of Baie Sainte Marie. The point is formed by the delta of the two branches of the mouth of the Grande Riviere de la Capesterre, which discharges through a pebble beach.

A conspicuous church with a red roof stands S of the point. A water tower stands 1 mile WSW of the point.

Between the point and Grande Pointe (Pointe a la Taste), 6 miles SSW, the depths are irregular and vessels should give this part of the coast a berth of at least 1 mile.

Anse des Trois Rivieres (15°58'N., 61°39'W.) lies about 1.5 miles W of Grande Pointe. A prominent church with a square yellow tower stands on the shore of the bay. There is a small pier for boats at the head of the bay. A light is shown near the village of Trois Rivieres.

Grande Anse (15°58'N., 61°40'W.) lies 1 mile WSW of Anse des Trois Rivieres. The bay is fringed by a gravel beach on which a prominent chimney stands.

Anchorage may be obtained, in a depth of 10m, sand and rocks, about 0.2 to 0.3 mile offshore.

8.59 Pointe du Vieux-Fort (15°57'N., 61°43'W.), the SW extremity of Basse-Terre, consists of dark rock, is steep-to and clear of dangers. A large rock stands close S of the point. There is a small pier at a village, 0.5 mile N of the point. A light is shown on the point.

Basse Terre (16°00'N., 61°44'W.) (World Port Index No. 11460), is the seat of government of the island and a port of entry. The roadstead off the town offers no shelter from S and W winds. The current in the roadstead generally sets NW or SE; it may attain a rate of two knots.

There is a mooring buoy at the port entrance W of the quay.

Aspect.—The peak of La Soufriere is among the first landmarks sighted from the offing, but it is often obscured by clouds. On closer approach, the steeple of the cathedral is conspicuous.

Basse-Terre Church

A statue and cross stand on the tower of the church. A light is shown in the mooring area and can best be seen on the chart.

Depths—Limitations.—A concrete pier with depths of

from 10.1 to 11m alongside, is situated abreast the town. The pier is 304m in length and is capable of handling vessels of up to 300m long, with a draft of 8.8m.

Pilotage.—Pilotage is compulsory for vessels inbound over 120m long and outbound vessels over 160m long. Pilots come from Pointe-a-Pitre and require 24-hour notice before arrival. The pilots may be contacted through the port authority on VHF channel 8, 12, or 16.

Anchorage.—Anchorage is available, in 70m, with the cathedral bearing 085°, distant 0.7 mile.

The starboard anchor should be let go first, then the port anchor, so the ship will head SE toward Huelmont, from which direction violent squalls are sometimes experienced.

A good berth for large vessels is in 32.9m, with the town cathedral bearing 105°.

There is a yacht marina, protected by breakwaters, at the mouth of the Riviere Sens,1.25 miles SE of the light at Basse-Terre.

Caution.—A firing danger area extends 3.75 miles seaward from close N of Pointe de Riviere des Peres to close N of Pointe des Habitants.

8.60 Anse a la Barque (16°05'N., 61°47'W.), a cove, about 6 miles NNW of Basse-Terre, offers shelter, except in W winds, to small vessels in depths of 9.1 to 10.1m.

A light is shown on the N entrance point of the cove. Another light is shown on the head of the cove.

Caution.—Two wrecks have been reported (2003) to lie about 1 mile NW of Anse a la Barque Point Light.

8.61 Anse de Bouillante (16°08'N., 61°47'W.) lies 2.5 miles N of Anse a la Barque. The bay can be identified by the yellow cliffs on its N side. A village stands at the head of the bay. A large conspicuous building stands N of the village. Vessels can anchor, in 20.1m, about 0.2 mile offshore, a short distance S of the village.

Anse de Pigeon (16°10'N., 61°47'W.), entered N of Pointe a Lezard, offers anchorage, in 20.1m, about 0.2 mile offshore abreast village at the head of the bay.

Ilets a Goyaves, two rocky islets, lie 0.75 mile offshore 1.5 miles NNW of Pointe a Lezard. A television tower standing 2.5 miles ENE of Ilets a Goyaves makes a good landmark.

Pointe Noire (16°15'N., 61°49'W.) lies about 5 miles N of Ilets a Goyaves. The point is formed by black rocks.

Pointe Ferry, about 1.5 miles N of Pointe Noire, is flat and wooded.

Anse Ferry, on the N side of Pointe Ferry, affords anchorage, in a depth of 14.6m, sand, about 0.2 mile offshore.

Anse Deshayes (16°18'N., 61°48'W.) lies 2 miles N of Pointe Ferry. A white church with a red belfry stands at the head of the bay.

Anchorage may be found, in a depth of about 23.8m, sand, with the church bearing 100°, distant 0.5 mile.

Pointe Allegre (16°22'N., 61°45'W.), the N extremity of Basse-Terre, is low and wooded. Foul ground fringes the point. A group of islets lie about 2 miles W and NW of the point.

8.62 La Desirade (16°19'N., 61°03'W.) lies about 5 miles ENE of the E extremity of Grande-Terre. The passage between the two islands is clear and deep. The N side of the island is precipitous and steep-to but rock fringed. The S side is mostly reef fringed to 0.2 mile offshore.

A light is exhibited at an elevation of 50m, from a white structure, 19m in height situated near the E extremity of La Desirade. Le Mouton is small rock, with a depth of 1.5m, and is located about 0.3 mile SE of the SE extremity of the island. The sea usually breaks over it.

Baie Mahault (16°19'N., 61°01'W.) lies on the S side of the island, about 1 mile WSW of Le Mouton.

Range lights stand at the head of the bay and when in line on a bearing of 327° lead into the bay. The bay is accessible only to small craft with local knowledge.

Grande Anse (16°18'N., 61°05'W.) lies 3.75 miles WSW of Baie Mahault. Vessels anchor outside the reefs about 0.4 mile offshore with SW extremity of La Desirade bearing 270°.

When approaching the anchorage care should be taken to avoid two 10.1m shoal patches located about 1 mile and 1.75 miles, respectively, SW of Pointe du Desert.

A directional light is exhibited from a stone structure at Grande Anse. The white sector of the light leads through the reef in a channel marked by buoys.

A light is exhibited from a mast on the head of the jetty. Radio masts stand close to a church. Anse du Galet, located on the W side of La Desirade, offers shelter in all seasons.

8.63 Iles de la Petite Terre (16°10'N., 61°07'W.) consist of two low sandy islands and lie about 5 miles SSE of the E extremity of Grande-Terre. The passage between them has a least depth of 19m and is clear of dangers.

A light is shown on the E end of the island. The channel between the two islands, which can only be entered with local knowledge, is about 0.1 mile wide at its narrowest part.

A nature reserve, as shown on the chart, completely surrounds the islands.

Anchorage.—Vessels should anchor clear of the nature reserve. During S winds, vessels may obtain anchorage N of Terre de Bas in depths of about 16m. During NE winds, anchorage may be taken S of Terre de Bas, in depths of about 12 to 14m. Caution should be taken to anchor clear of Baleine du Sud,0.4 miles SSW of Petite Terre Light, and the shoal patches extending over 1 mile S from the W end of Terre de Bas.

Marie Galante

8.64 Marie Galante (15°55'N., 61°16'W.) lies about 15 miles SSW of the E extremity of Grande-Terre. Grosse Pointe, the N extremity of the island, is a salient rocky point. Between this point and Pointe Sarragot, 4 miles SE, the coast is cliffy. To the S the coast is fringed with reefs in some places up to 0.5 mile offshore.

Pointe du Gros Cap (15°54'N., 61°13'W.), the SE extremity of the island, can be identified by a conspicuous rock close offshore of the point.

Between the village of Capesterre, situated about 1.25 miles SW of Pointe du Gros Cap, and that of Grand-Bourg, situated about 5.5 miles farther W, the coast is fringed for almost its entire length by reefs and rocks extending about 1.25 miles offshore. Several houses may be seen, and for the most part are built about halfway up the bluffs. An aero radiobeacon is found seaward of the coastal road near Pointe des Basses.

8.65 Grasnd-Bourg (15°53'N., 61°19'W.) lies on the SW side of Marie Galante. The fort and the hospital on the NW side of the town, and the church with its belfry on its NE side, are all prominent landmarks. A conspicuous lighted TV tower stands about 1 mile N of the town. Lighted buoys mark the edge of the reefs in the approach to the pier from the W.

Grand-Bourg

A T-shaped jetty, abreast the middle of the town, extends 152m SSW from the shore. The head of the jetty is 36m long, and can accommodate a maximum draft of 3m. A light is shown on the head of the jetty.

A new L-shaped jetty has been constructed parallel to, and 0.1 mile E of the pier.

Anchorage.—Anchorage for vessels over 3.3m in draft must be taken outside the reefs, in 10.1 to 20.1m, on a narrow ledge which is steep-to on the outer edge. A vessel should approach steering for the belfry in line with the edge of the breakers marking the NW end of the reefs SW of the town, bearing about 045°, and anchor on this bearing, in a depth of 14.6m.

8.66 Baie Saint Louis (15°57'N., 61°20'W.) lies about 4.5 miles N of Grand Bourg and is entered between Pointe Folle Anse and Pointe du Cimetiere, about 2.25 miles NNE. A light is shown from the town. Northeast winds cause a slight swell in the bay.

A T-headed jetty, about 182m long, with a depth of about 9.8m at its head, extends WNW from Pointe Folle Anse. Mooring buoys lie off the head of the pier.

Saint Louis (15°57'N., 61°19'W.) stands at the head of Baie Saint Louis. The village consists of several streets running inland, with a few houses N of them near the above light. There is a pier off the village for small craft.

Anchorage, in 6.7 to 7.6m, good holding ground, can be taken W of the village, about 0.5 mile offshore. When approaching the anchorage, ships should keep at least 1 mile offshore.

Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo must anchor 0.7 mile WNW of Saint Louis. A prohibited anchorage exists within 1.25 miles of two submarine cables which are laid across the S end of the bay.

An obstruction, consisting of a replacement cable, is laid along the 10m depth contour from the vicinity of position 15°58.0'N, 61°19.7'W to position 15°59.3'N, 61°19.3'W.

Ilet du Vieux Fort (16°00'N., 61°19'W.) lies on the coastal bank about 0.4 mile offshore and about 1.5 miles NNE of Pointe du Cimetiere. The islet is low and covered with bushes. The passage between the islet and the shore should only be used by vessels with local knowledge.

Ilet du Vieux Fort

Iles des Saintes

8.67 Iles des Saintes (15°51'N., 61°37'W.) are located with Gros Cap, the W extremity of the group, about 6.75 miles SSE of Pointe du Vieux Fort, Guadeloupe. The group consists of six islands lying close together.

Terre de Haut (15°52'N., 61°35'W.), the E island of the group, rises to its summit Mont Rossel at its SW end.

The passage between this island and Terre de Bas, is about 0.5 mile wide and clear of dangers. There is a prohibited anchorage between the two islands.

Caution.—It is reported (2010) that two wrecks lie about 135m and 270m SSW of Maison Blanche and about 360m NW of Terre de Haut within the approach sector to the port. The vicinity of the wrecks is marked by two buoys.

The NW side of Terre de Haut is indented by three bays. A submarine cable lies around the perimeter of Morne penninsula at the W end of Terre de Haut and extends about 2.25 miles NNW. Additional cables extend across Canal Des Saintes to the S shore of Guadeloupe.

Baie du Marigot (15°52'N., 61°35'W.) is the N bay. A stone building, Fort Napoleon, stands on the summit of a hill on the W side of the bay. The head of the bay is foul. A stranded wreck lies in the center of the bay about 145m SW of the shipyard pier.

Les Saints anchorage, the middle bay, is sheltered by Ilet a Cabrit and affords good anchorage.

Anchorage is prohibited for vessels over 1,600 gt carrying hydrocarbons or dangerous cargo.

Anse a Cointe is the SW bay and can be identified by a cross

Terre de Haut

which stands near the S end of the bay.

8.68 Bourg des Saintes (Terre de Haut) (15°52'N., 61°35'W.), lies at the head of Les Saintes Anchorage. A large conspicuous cross, which is illuminated at night, stands S of the village church. Close N of the church is a conspicuous white house.

A light is shown near the root of the village pier. A radio mast, marked by obstruction lights, may be seen in the vicinity. A lighted buoy marks a shoal off the village. The buoy has been reported missing (2000).

There is pier, 30m long, where small vessels, drawing about 3m, can berth at the village. A jetty, about 99m in length, is located close W of the ro/ro terminal at the S end of the village.

Anchorage.—Anchorage is available, in depths of 14.6 to 16.5m, with the church spire in the village bearing 155°, and La Baleine, a white rock 0.6m high bearing 353°. Anchorage is prohibited for vessels over 1,600 gt carrying hydrocarbons or dangerous cargo.

8.69 Pointe de Bois Joli (15°51'N., 61°36'W.), the SW point of Terre de Haut, consists of piled rock. This side of the island is very irregular and indented by a number of coves, separated by rocky points. La Redonde, a rocky islet, lies 137m S of the S extremity of Terre de Haut.

Pointe de Bois Joli

Strong winds cause heavy tide rips and a fairly strong W current between La Redonde and the S side of Terre de Haut. Between La Redonde and Pointe de Bois Joli, a bank, with a depth of 5.8m, extends about 0.3 mile off the coast of Terre de Haut.

Grand Ilet (15°50'N., 61°36'W.) lies about 0.5 mile S of La Redonde. La Coche, a low islet, lies about 0.5 mile W of Grand Ilet. Les Augustins, a group of large steep rocks surrounded by foul ground 0.13 mile WNW of La Coche, is separate from it by a passage with a least depth of 10m in the fairway. The fairway between Les Augustins and Terre de Bas is clear of dangers.

Ilet a Cabrit (15°52'N., 61°36'W.) lies off the NW side of Terre de Haut. The three extremities of the island are dominated by conical hills. Close N of the westernmost hill is a conspicuous tower shaped rock.

La Baleine du Large, a rock with 0.4m depth and over which the sea breaks in heavy weather, lies about 0.2 mile NNW of La Baleine. A lighted buoy marks the W side of this shoal.

8.70 Terre de Bas (15°51'N., 61°38'W.) is generally hilly and the greater part of its coasts are cliffy and rocky. Gros Cap, the SW extremity of the island, consists of a high cliff. A swell is experienced off this coast, but anchorage can be taken during good weather on the narrow shore bank.

Pointe a Vache (15°52'N., 61°38'W.) is the N extremity of Terre de Bas. Le Pate is a jagged islet and lies about 0.5 mile E of Pointe Vache. The fairway between the rock and the point is about 0.1 mile wide.

Pointe du Fer-a-Cheval, the E extremity of the island, is high and wooded. Two coves lie close W of the point.

Pointe Sud, the S extremity of the island is prominent with precipitous cliffs.

Isla Aves

8.71 Isla Aves (15°40'N., 63°36'W.), a Venezuelan possession, nearly 0.3 mile long in a N to S direction and 0.5 mile wide, lies 100 miles SW of Montserrat. It rises to an elevation of 3m at its N end. The sea breaks across the center of the island in anything more than a moderate swell.

The island is formed of coral, overlaid with sand which supports some vegetation. Birds abound and the island is a protected nature sanctuary.

An oil rig in the style of a Texas tower, with a light and a radar reflector, stands on the island. The structure on top of the tower is the size of an average house. The platform is approximately 19m high. The tower is a manned Venezuelan Coast Guard Station (call sign: Simon Bolivar Coast Guard Station.

It has been reported that, the island is a good radar target, up to 30 miles. A jetty with a depth of about 2.7m alongside its head, projects about 91m W, 0.7mile from the S end of the island.

It can be approached from W in a least depth of 2.4m.

There are patches with depths of 1.4m and 1.5m over them 0.7mile SW and 137m NW, respectively, of the jetty head.

Coral reefs, drying and below-water with depths of less than 30.5m, extend 1.5 miles S of the island and to a lesser distance in other directions. The limit of the coral is normally visible in daylight.

Isla Aves Light and Coast Guard Station

A racon transmits from Isla Aves.

In moderate weather, landing can be made in the center of the W side of the island, where there is a narrow sandy beach extending to the LW line.

Vessels without local knowledge should not approach the island within 1.8 miles, but if necessary to anchor an approach from SSW is recommended.

Regular depths of about 15.2m should be found between 1.5 miles and 0.4 mile from the shore. A lookout for coral heads is essential. It should be possible to select a suitable patch, free from coral visually.

The recommended anchorage is with the light bearing 077°, distant 0.3 mile, in a depth of 5.3m. There is a 2.8m patch 0.1mile ENE of this position. In 1994, the mast was reported not to exist.

Caution.—It has been reported that much of the island was washed away during a hurricane years ago (1997), leaving two sand cays bordered by coral reefs, with a pool between. Numerous reports indicate that small uncharted shoals and depths dirffering from charted depths exist in the vicinity of Isla Aves. Mariners are advised to exercise caution and deep-draft vessels, particularly those drawing more than 12.2m should keep outside the 200m contour where possible. All the above information should, therefore, be used with caution.

A coral bank, 2 miles in diameter, lies 10 miles S of Isla Aves. The least known depth over the bank is 21.9m, but it is possible that lesser depths exist and deep draft vessels are advised to keep well clear of the area. Another patch, with a depth of 7.3m has been reported about 3.7 miles SE of Isla Aves.

Dominica

8.72 Dominica (15°25'N., 61°20'W.) lies with Cape Capuchin on its N coast about 13 miles SSE of the E extremity of Grand Islet, Iles des Saints. Dominica is an island with lofty rugged mountains which extend its full length from N to S and are usually obscured by clouds.

The island has been reported to give good radar returns up to 25 miles from its E coast. There are several good, but open roadsteads on the W side of the island, the principal of which is Roseau, though the best is Prince Rupert Bay.

Winds—Weather.—Vessels in the vicinity of the island should watch out for heavy squalls which come off the high land and through the deep valleys. These squalls blow with great force during the strong trades.

Off Soufriere Bay and the valley of the River Layou are the most dangerous areas. Calms are frequent during the light trades.

Tides—Currents.—West of the island the tidal currents are weak and are masked by the currents and wind drifts. For several days the set may be N or S, parallel to the coast, the rate in some places being two knots.

On the E side the tidal currents are regular, but the effects of the N ocean currents causes the N tidal currents to be stronger and of a longer duration than the S tidal currents.

Off Pointe Peine the N current attains a rate of 1.5 knots. Off the NE side of the island it attains a rate of two knots, but the SE tidal current is barely perceptible.

Aspect.—Cape Capuchin lies at the W end of a 2 mile stretch of cliffs forming the N coast. The cape has been reported to give good radar returns up to 15 miles. From this cape the W coast trends 2 miles S to Douglas Point, the N entrance point to Douglas Bay.

There is a conspicuous blue house on the hillside at the N end of Douglas Bay. Prince Rupert Bluff Point lies about 1.5 miles SW of Douglas Point. The bluff is on the W end of a peninsula which forms the N side of Prince Rupert Bay.

Caution.—Marine nature reserves have been established on the NW and SW coasts of the island, as follows:

1. Scotts Head Soufriere Marine Reserve includes the waters of Soufriere Bay (15°13'N., 61°23'W.) and the adjacent waters extending SW to a point S of Scotts Head Village.
2. Cabrits Marine Reserve includes the waters of Douglas Bay and Prince Rupert Bay.

Anchoring and mooring without permission is prohibited. Fishing and the dumping of garbage or otherwise polluting the marine environment is also prohibited.

8.73 Prince Rupert Bay (15°34'N., 61°29'W.) is entered between Prince Rupert Bluff Point and Point Ronde (Rollo Head), about 3 miles to S.

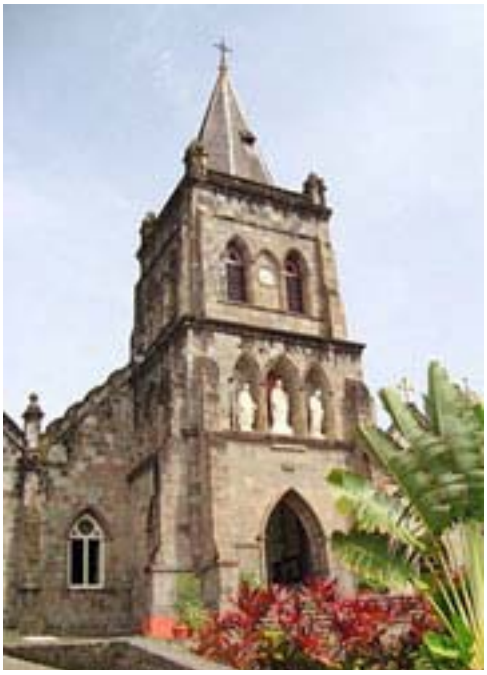
At the head of the bay stands the small town of **Portsmouth** (15°34'N., 61°28'W.) (World Port Index No. 11530). The gray spire and red roof of the Catholic Church in the town is conspicuous.

The white Methodist Chapel, E of the Catholic Church, is prominent from offshore. There are two jetties and a prominent warehouse 1 mile S of Portmouth.

There are several stranded wrecks situated offshore in the vicinity of the port.

Cabrits Cruise Ship Terminal, is located in the N part of the bay on the S side of Prince Rupert Bluff Point; the berth is 100m long and has a depth of 15m alongside. Cruise vessels up to a length of 300m, with maximum draft of 10.6m and a size of 80,000 gt, can be accommodated with the use of dolphins.

Longhouse Jetty, used for working general cargo, is 62m in length with depths alongside of 3.6m; the jetty can accommo-



Portsmouth—Catholic Church

date vessels up to 91.4m in length and a maximum draft of 3.3m.

Prince Rupert Bay affords the best anchorage in Dominica, being generally clear of dangers and protected from all but W winds.

Anchorage may be taken about 0.3 mile off the coast, between Portsmouth and the Picard Estate, about 1 mile S, in depths of from 9.1 to 18.3m, as shown on the chart.

8.74 **Grande Savane** (15°27'N., 61°28'W.), about 6 miles SSE of Point Ronde, is the largest area of sloping land on the W side of Dominica. It has very little vegetation and is usually very parched.

The coast for about 4 miles N of Grand Savane is steeper and more rugged than that immediately S of it. A light is exhibited close SE of Point Ronde at Barbers Block near the summit of Morne Espagnol.

A light is shown S of the town of Salisbury about 0.5 mile SE of Grande Savane.

The **River Layou** (15°24'N., 61°26'W.), which discharges close S of the town of Saint Joseph about 3.5 miles SSE of Grande Savane, is the largest in the island. From the W its entrance is easily identified by the lowness of the land. A radio mast, marked by lights, stands 0.5 mile NE of the mouth of the River Layou.

Anchorage can be taken, in 14.6 to 18.3m, about 0.2 mile N or S of the river mouth. The N anchorage is the one most frequently used. The bay is exposed to N and W winds.

Roseau (Woodbridge Bay) (15°18'N., 61°24'W.)

World Port Index No. 11520

8.75 The port of Roseau comprises Woodbridge Bay and Roseau Roads. Woodbridge Bay lies N of Roseau. It is backed by tablelands that are intersected by ravines. The tablelands are much lower than Morne Daniel and Morne Bruce, N and S of them, respectively.

A radio mast stands 0.5 mile SSE of Morne Daniel.

Depths—Limitations.—Woodbridge Bay Ocean Berth is located near the center of Woodbridge Bay and is the longest and deepest berth.

Roseau—Main berth

Roseau Harbor

Vessels up to 244m long can be accommodated at Main Wharf. A cruise ship terminal, with a loading platform 48m long and connected to shore by a walkway, extends SW from shore between three lighted dolphins close NW of Fort Young.

Aspect.—Morne Bruce (15°18'N., 61°23'W.) is a tableland, 144.8m high, and rises close E of the town. On its summit are several old military buildings.

Fort Young, close to the shore at the S end of the town, is slightly higher than the other buildings in its vicinity, and at its W corner there is a prominent flagstaff. The Catholic Church spire in the town is prominent. The Wesleyan Church spire which is white-washed, is also conspicuous. A good landmark is the red bridge which crosses the river at its mouth.

Woodbridge Bay—Pier Facilities			
Wharf	**Length**	**Depth**	**Draft**
Main	152m	10.9m	—
Ro-Ro	—	8.8m	—
Schooner	45m	2.9m	—
Cruise Ship	—	9.6m	—
Tanker			
White Oils (Rockaway)	—	—	5.4m
Belfast	—	—	8.8m
LPG	—	—	7.3m

Pilotage.—Pilotage is compulsory for vessels over 100 gt. Pilotage is available for anchorage on request. Vessels should send a request for pilot and ETA 48 hours in advance.Tankers should include their drafts and cargo details in the message. Vessels should establish VHF contact with the pilots 2 hours prior to arrival.

The pilot boards about 1 mile W of the mouth of the Roseau River and may be contacted on VHF channel 12, 14, or 16 and by radiotelephone.

Pilotage is also available here for **Woodbridge Bay Terminal** (15°18.5'N., 61°23.9'W.); Rockaway Anchorage, about 1 mile N of Woodbridge Bay; and **Belfast Anchorage** (15°21.7'N., 61°24.8'W.).

Anchorage.—Vessels wishing to anchor while awaiting a berth, or to obtain Customs clearance, should do so either between the S limit of the restricted area in Woodbridge Bay and the mouth of the Roseau River, or between the Import Jetty and a line drawn 200° from Fort Young Light.

There is an anchorage, in 42m, good holding ground, 0.75 mile NW of Fort Young.

A restricted area is established and may best be seen on the chart. Vessels should not enter this area without permission of the Port Manager.

A vessel weighing anchor at the SW corner of the area fouled a large mooring buoy and cable which were cut free and dumped in deep water.

A tanker terminal is reported to be available, about 2.5 miles N of Roseau. A hose is floated to vessels at anchor.

The mooring buoy charted in Woodbridge Bay is used by water tankers.

Caution.—Anchorage off the town is treacherous and cannot be recommended due to the narrowness and steepness of the bank, which, combined with an E wind, has resulted in vessels drifting to seaward during the night.

8.76 Point Michel (15°15'N., 61°23'W.) lies about 2.5 miles SSE of Roseau. A conspicuous church stands on the point, along with a tower.

Vessels may anchor 0.15 mile off the point, but care should be taken as the depths increase so suddenly that within 100m they may change from 18.3 to 54.9m.

Soufriere Bay (15°13'N., 61°23'W.) lies about 2 miles S of Point Michel. The bay is not recommended as an anchorage because of the steep-to shore. Small craft have to secure to the shore after anchoring.

Scotts Head (Cap Cachacrou) forms the S entrance point of Soufriere Bay, and is also the SW extremity of Dominica.

A lighted radio mast stands on the head. Shoal water, including several rocks with depths of 1.8m or less over them, extends 0.25 mile W from Scotts Head.

The character of the NE part of Dominica presents distinct contrast to that of any other portion. On this side, the land descends less abruptly from the mountains, and the depths offshore indicate continuation of this gradual slope, there being depths of less than 182.9m about 3.5 miles offshore.

8.77 Point Jaquet (15°38'N., 61°26'W.) is the N extremity of Dominica. Pointe La Sole lies about 7 miles ESE of Point Jaquet, and the reef extending NW, protect an anchorage for small vessels.

The depth at the anchorage is 7.3m, but the maneuvering space is limited so that vessels are steadied by the use of hawser to shore.

Crompton Point is the NE extremity of Dominica and lies 1 mile ESE of Pointe La Sole. A aero radiobeacon is situated about 2 miles S of Crompton Point at Melville Hall airfield.

Captain Scott's Rock, on which the sea breaks heavily, lies about 3 miles SSE of Crompton Point.

Pagua Bay (15°31'N., 61°17'W.) lies about 1 mile S of Captain Scott's Rock. The bay affords landing partially protected by a reef, which extends about 0.2 mile SE from its NW side. A radio tower, marked by obstruction lights, stands near the coast 1.75 miles S of Pagua Pointe.

Saint David Bay (15°26'N., 61°16'W.) lies about 5 miles SSE of Pagua Bay. The bay offers anchorage to small craft with local knowledge in the lee of the S entrance point. During N winds a heavy sea sets in, and the anchorage is only safe with winds from S of ENE.

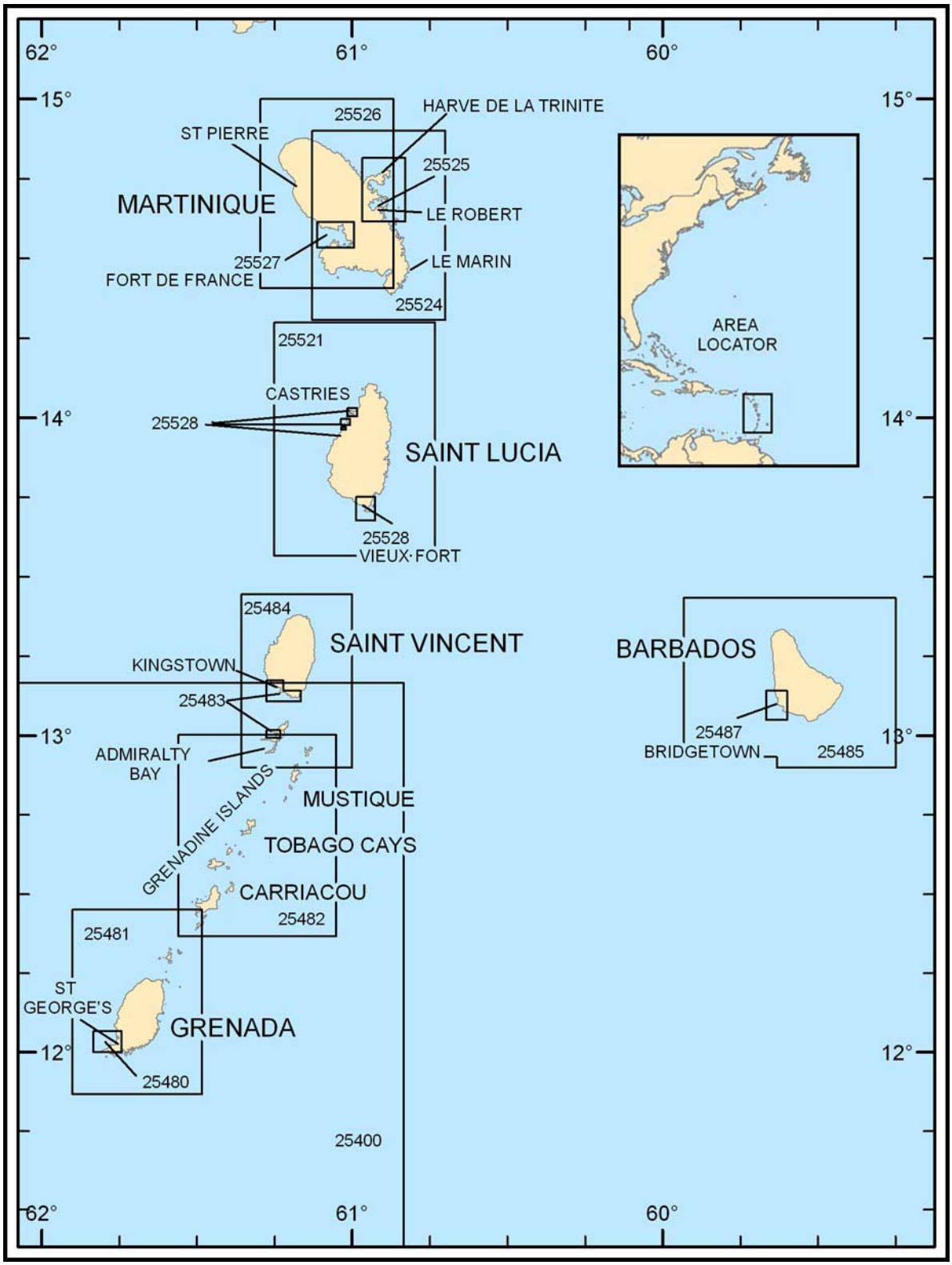
8.78 Point a Peine (15°24'N., 61°15'W.) lies about 2.25 miles SSE of the S entrance point of Saint David Bay.

The point is the SE extremity of a promontory. On the N side of this promontory lies Grand Marigot Bay, and on its S side is Petit Soufriere Bay. La Plaine, situated on a rounded point about 3 miles S of Rosalie Point, the S entrance point of Petit Soufriere Bay, is the most level part of this side of the island. A church stands on the point.

Grand Bay (15°14'N., 61°19'W.) lies about 6.5 miles SSW of La Plaine and is entered between Carib Point and Tanama Point.

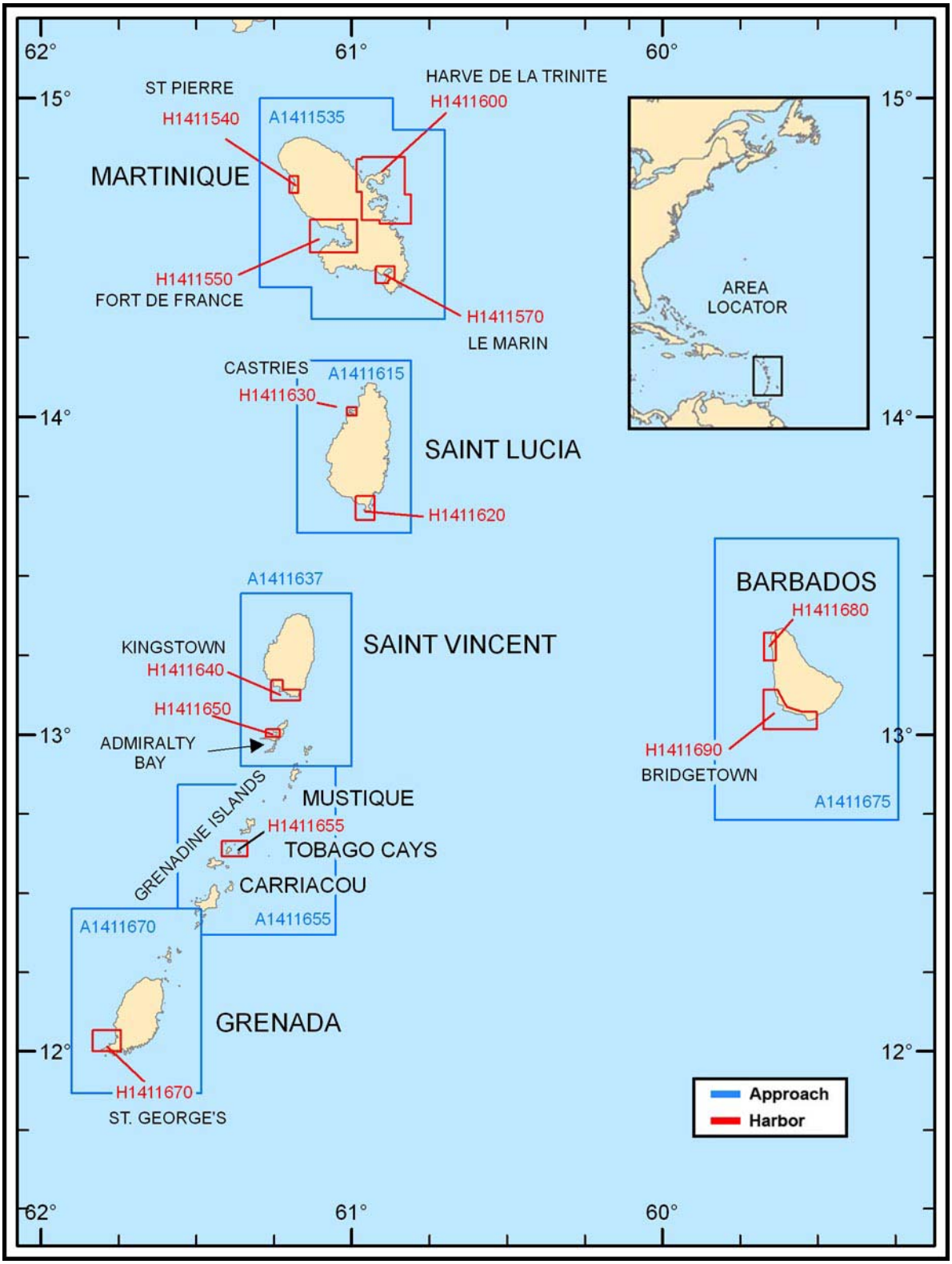
Dominica-Martinique Channel (15°07'N., 61°12'W.), separating Dominica and Martinique, is about 22 miles wide, and is deep and free of dangers.

A bank, with a reported least depth of 73.2m, lies about 20 miles E of the S end of Dominica. The currents in the passage set W at an average rate of 1 knot.



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

SECTOR **9** — CHART INFORMATION



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SECTOR 9 — DNC LIBRARY INFORMATION

SECTOR 9

THE WINDWARD ISLANDS AND BARBADOS

Plan.—This sector describes the Windward Islands and the island of Barbados. The descriptive sequence is from N to S, from Martinique to Grenada, and then E to Barbados.

General Remarks

9.1 The Windward Islands are high and mountainous. The Grenadine Islands and Barbados are of moderate elevations. Most of the islands are wooded.

Vessels can pass about 2 miles off either side of these islands, as the banks on which they lie are fairly steep-to.

The E side of Martinique must be given wider berth as the chain of barrier reefs lies up to about 2.75 miles offshore.

Vessels passing among the Grenadines must avoid the shoal heads which lie on the island banks, and also must guard against the current, which is strong in the narrow channels between the islets and islands within that group.

The passages between the major islands are deep. Saint Lucia Channel, lying between Martinique and Saint Lucia, and the channel lying between this latter island and Saint Vincent, are the two more important passages between the Windward Islands, as both are wide, deep, and clear of known dangers.

Winds—Weather.—The trade winds of this area are almost constant throughout the year. Moving in a clockwise direction around the Azores high, they produce throughout the year a predominant wind regime that varies between NE and SE, depending on the location and season. The tendency is for predominantly NE winds in autumn and winter and more E winds in the spring and summer months.

There is in general an increase in the force of these winds from mid-summer through the winter and a falling off in velocity in spring and early summer.

Wind speeds average 8 to 12 knots in most localities. The strongest breeze of the day usually occurs at 1400, with a speed two or three times that occurring during the predawn hours.

Squalls, usually accompanied by thunder and lightening, are common and are most frequent in the vicinity of land.

Where the coasts are backed by mountains, cold air in these squalls may rush down the mountain sides and move out over the harbors with sufficient force to damage small boats. These storms usually occur in the summer months and are preceded by sultry weather and high variable winds.

Temperatures are of secondary importance over the region of this sector.

Within the limits of the Windward Islands, air temperatures over coastal areas average about 24° to 27°C in summer.

Temperatures above 35°C seldom occur. The average air temperature over the sea is near that of the sea surface but may range from 17°C to higher values.

The rainfall regime in this area is divided into the dry season from January through April or May and the rainy season covering the remainder of the year.

Summer is the wet season with frequent heavy showers interspersed with periods of fair weather and sunshine.

Winter is the dry season with low amounts of cloud cover and light showers. Over open waters heavy and prolonged showers seldom occur.

In summer, thunderstorms are numerous with the frequency varying considerably from place to place. The number is greatest over the large islands and particularly in mountainous sections.

During the dry winter season, thunderstorm activity is less frequent.

All of the islands covered by this sector N of about 10°N are liable to be affected by hurricanes. The average frequency with which hurricanes affect the various islands of the West Indies increases N.

At Barbados, the expectation is one hurricane in 26 years while in Martinique, the expectation is about one in 5 years.

At Martinique there have been periods of over 30 years without a hurricane; however, occasionally there have been two hurricanes within 1 year. The majority of the hurricanes which affect these islands originate farther E in the Atlantic.

Hurricanes usually occur from June through November, with September having the greatest amount, followed by August and October.

The islands mentioned in this sector are all subject to earthquakes and volcanic eruptions.

Tides—Currents.—The surface currents covered in this sector are governed primarily by the South Equatorial Current.

Current velocity and direction vary only slightly with the seasons and generally set W or NW. The greatest variations in the current pattern result from winds and storms.

Water passing through the channels between Martinique, Saint Vincent, Grenada, and Trinidad is mainly derived from the South Equatorial Current. The current through these passages is normally stronger than that through the more N ones.

In general, vessels approaching Barbados, Saint Vincent, or Grenada from the NE will meet an increase of current strength S of 14°N.

Currents and tidal currents of a local nature are described with the island features.

Martinique

9.2 **Martinique** (14°40'N., 61°00'W.), a very mountainous island, is easily identified by three outstanding peaks towering above the main mountain chain that traverses it in a NW and SE direction. Montagne Pelee, a conspicuous volcano, stands in the NW part of the island, and can be seen from a distance of 45 miles during clear weather.

Montagne du Vauclin, in the SE part of the island, provides a good mark for vessels approaching from the S or SE. Vessels bound for ports on the E side of the island will find Presqu'ile de la Caravelle a good landfall. A light stands on the hilltop of the NE pennisula of Presqu'ile de la Caravelle.

Tides—Currents.—Currents in the vicinity of Martinique are much influenced by the Equatorial Current. Off the N and

Presqu'ile de la Caravelle Light

extremities of the island the set is generally to the W. Off the E coast a N set may attain a velocity of 3 knots during SE winds.

On the W side of the island off Saint Pierre, the set may be either N or S. The stranding of several large and fast vessels, in recent years, has been due to underestimating the strength of the currents.

Caution.—Seaplanes operate along the W and S coasts of Martinique. Vessels should not impede take off and landing of the seaplanes. Vessels are not to anchor in the vicinity of seaplane operating areas as shown on the chart.

9.3 Cap Saint Martin (14°52'N., 61°13'W.) is a rugged steep-to headland forming the NW extremity of the island.

There are no known dangers off this part of the coast, except Ilet la Perle (Rocher La Perle), a steep-to rock, 26.2m high, lying about 1.75 miles SW of Cap Saint Martin.

The village of Le Precheur, identified by a church with two square, yellow towers, stands 2.5 miles S of Ilet la Perle. A light is shown close to the village.

Rade de Saint Pierre (14°45'N., 61°11'W.) extends from the mouth of the Riviere des Peres, about 3.75 miles SE of Le Precheur, to the village of Le Carbet. Between these locations, the coast is almost entirely composed of sandy beaches. Several stranded wrecks are found along this coast as shown on the chart

This stretch of coast may be approached without risk, but it should be kept in mind that a vessel may be set either N or S of her course by the current which may run in either direction in this area.

The best anchorage in the area lies 0.3 mile SW of Pointe Sainte-Marthe and 0.2 mile offshore, in depths of 38.4 to 40.2m, taking care to avoid a wreck with a depth of 22m, best seen on the chart. The bottom in this part of the roadstead is less steep than elsewhere.

Vessels should not anchor farther out, and should take care not to anchor farther S, where the water is very deep and the bottom rocky and uneven.

Caution.—Caution is advised as numerous wrecks are situated within the 100m curve along this stretch of coast.

9.4 Saint Pierre (14°44'N., 61°11'W.) is a small open port and a first port of entry. The cathedral, a gray building with two towers, is very prominent. On Pointe Sainte Marthe, at the S end of town, stands a prominent white statue on a column.

A tunnel close SW of the above point is conspicuous from the N.

Pilotage.—Pilotage is compulsory for vessels over 50m in length. At least 2 hours advance notice is required to be made with Fort de France for a pilot to meet a vessel arriving at Saint Pierre. Pilots are not available at night.

A small jetty, where landing can be effected, is situated about 0.5 mile N of Pointe Saint Marthe. Some white mooring buoys for the use of lighters and barges, are situated about 137m WNW of the head of the jetty.

Le Carbet (14°42'N., 61°11'W.) is a village situated about 2 miles S of Saint Pierre. In it stands a conspicuous church. Morne Vert rises to an elevation of 521.8m about 2 miles ENE of the village. A mast, 100m in height, marked by red obstruction lights, stands near the coast, 3 miles SSE of Le Carbet. An L-shaped jetty extends from the coast out to the 10m depth contour about 0.3 mile S of Le Carbet.

Fond Capot (Fond Belle Fontaine) (14°40'N., 61°10'W.) lies 3 miles SE of Le Carbet. A petroleum pier extends 140m WSW from the coast. A platform, with dolphins nearby, situated on the sides of the pier, can accommodate vessels up to 15,000 gt, with a draft of 9.1m. Pilots for Fond Belle Fontaine come from Fort de France and is compulsory. Pilots board either at Fort de France or 1 mile NW of the berth.

Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo may not close within 1 mile of the coast except for direct access to the pier.

9.5 Baie de Fort de France (14°34'N., 61°04'W.) is entered between Pointe des Negres and Ilet a Ramiers, about 3.5 miles to the SSE. The depths in the bay are very irregular and its shores are indented by a number of coves.

Fort de France is built on the N side of the bay on low, level ground. Fort Saint Louis stands on a small promontory, which extends about 0.3 mile S from the SE portion of the main part of town.

Fort Saint Louis

The principal deep-water berths lie in Baie des Tourelles, where large vessels can be accommodated.

Moderate size vessels use the basin N of these berths, and small vessels use the berths in Baie du Carenage.

Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo may not close within 1 mile of the coast except for direct access to the pier from Cap Enrage, 1 mile SE.

Fort de France (14°36'N., 61°05'W.)

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9.6 Fort de France, the capital and principal commercial center on Martinique, is a well-protected harbor providing shelter to all classes of vessels.

Fort de France

Winds—Weather.—See paragraph 9.1 for further information. Vessels intending to berth should arrange to do so before 0600, or after sundown, to avoid the winds.

Tides—Currents.—See paragraph 9.1 for further information.

Depths—Limitations.—Shoals, banks, and other dangers encumber Baie Fort de France, and may best be seen on the chart. Two recommended tracks proceed from seaward, and offer access to various portions of the bay.

The N track passes S of Point des Negres, N of **Banc de la Vierge** (14°35'N., 61°05'W.) and offers an approach route to Fort de France, and associated anchorages. The S track passes between **Banc Mitain** (14°35'N., 61°04'W.) and **Banc de Gros Ilet** (14°34'N., 61°05'W.), which serves as an approach channel for Cohe du Lamentin, Mouillage de la Riviere Salee, and Mouillage des Tres Ilets.

It is reported (2008) that the shoals extend beyond the S limits of the buoys marking Banc du Fort Saint Louis.

The N track, as charted, passes over depths of less than 20m about 0.75 mile SW and 0.5 mile SSW of Fort Saint-Louis. Passe du Carenage, passes between Banc du Fort Saint-Louis, and Banc de la Carriere and is marked by range lights, in alignment bearing 004°. The least charted depth is 10.4m.

The S entrance track into the bay has a least charted depth of 16.4m through Passe de Trois Ilets, where it branches NE and SE.

Fort de France

The NE branch, to Cohe du Lamentin, passes several buoyed shoals and gradually decreases to depths of less than 10m. The track to Mouillage des Trois Ilets gradually shoals to depths of

10m. The channel to Mouillage de la Riviere Salee passes close aboard unmarked shoals, with depths ranging from 10.6 to 1.5m. Local knowledge is strongly recommended.

The harbor is divided into two basins; Baie des Tourelles at the E side, and Baie du Carenage at the W side.

Vessels with a single screw and no bow-thrusters are limited to a length of 180m. Vessels with twin screws and bow-thrusters are limited to a length of 250m. There are facilities for cruise, passenger, container, ro-ro, general cargo, and fishing vessels.

At Pointe des Carrieres, close E of the harbor entrance, a T-head pier serves as a combination bulk-petroleum terminal. Tankers are berthed during daylight hours only and the use of steel wires is prohibited.

Two dolphins standing W of the pier head and three mooring buoys to the NE enable this berth to accommodate tankers up to 120,000 dwt, with a maximum length of 300m and a maximum draft of 15m. The line of the berth is 071°.

The obligatory approach channel for vessels over 1,000 gt carrying hydrocarbons or dangerous cargo is defined as the direct route closet to 090° from 7 miles off the coast to the waiting zone and tanker anchorage shown on the chart. For berthing information refer to the **Fort de France—Berth Information** table.

Fort de France—Berth Information

Berth	Length	Depth	Remarks
Fort de France Cruise Terminal—Pointe Simon			
East Berth	270m	10.0m	Passenger vessels (See Note).
West Berth	200m	10.0m	Local passenger vessels.
Baies Des Tourelles Terminal			
East Berth	640m	12.0m	General, bulk, and ro-ro.
South side (new)	130m	7.0m	Ro-ro
Tourelle Cruise Terminal			
Principal Berth	320m	11.0m	Cruise vessels.
Annexe Berth	180m	9.0m	Cruise vessels.
Grand Port Maritime de la Martinique (GPMLM)			
Le Quai des Grands	180m	9.0m	Cruise vessels and freighters.
West Quay	160m	7.0m	Passenger vessels.
The Hydrobase			
Ro-Ro	130m	7.0m	Ro-ro with ramp of 21m width.
North Hydrobase	—	12.0m	Continuous length of 640m. Vehicles, solid, containers, and liquid bulk.
South Hydrobase	—	12.0m	Continuous length of 640m. Vehicles, solid, containers, and liquid bulk.
Pointe Des Carriers Terminal			
Fertilizer berth (new)	130m	10.0m	Fertilizer.
Pointe Des Grives Terminal			
Principal Berth	460m	13.0m	Containers.
Annexe Berth	160m	7.0m	Containers.
La Farge			
Ore Jetty	110m	10.m	Can accommodate vessels up to 120,000 dwt with an loa of 300m. Gypsum, limestone, and iron ore.
Tanker Berths (GPMLM)			
Bitumen Berth	150m	4.5-5.5m	Crude oil imports.
S.A.R.A. MBM	—	15m	Petroleum products.
Old Navy Pier	175m	7.6m	—

Fort de France—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Power Plant Pier	165m	10.0m	Maximum loa of 120m. Petroleum products.
Sara Cohe	39m	9.3m	Maximum loa of 120m. LPG and petroleum products.
Note.—There are two mooring dolphins, located 67.5m and 117.5m off the SW end, for use at both the cruise berths, and a single mooring dolphin 115m off the NE end. Vessels up to 70,000 tons, with a maximum loa of 270m and a maximum draft of 10.0m, can use the offshore side. Vessels with an loa up to 200m and a draft of 10m can use the inshore side.			

Aspect.—The most prominent objects are the hospital buildings close N of the town, and the large buildings of a college 0.2 mile W of the mouth of Riviere Madame. A square clocktower, about 0.3 mile N of the river mouth is also prominent. Above the town on the slope of the hill about 0.3 mile SSE of the hospital stands a chapel. The basilica of Balata, with a conspicuous dome, stands on the heights above Fort de France, 3.5 miles NNW of Pointe de la Carriere, the E entrance point of Fort de France harbor. The dome is about 27.4m in height, and has an elevation of about 305m.

Pilotage.—Pilotage is compulsory for vessels greater than 50m loa as well as for all vessels carrying hydrocarbons or dangerous materials proceeding to the port or to an anchorage.

Deep draft vesse board the pilot seaward of a line drawn from Cap Enrage, just N of Pointe des Negres, and **Cap Salomon** (14°31'N., 61°06'W.).

Pilots will also board 0.5 mile S of Pointe des Negres. If pilots are unavailable, vessels should anchor in Mouillage des Flamands.

Vessels less than 100m may enter the port and anchor without a pilot if they anchor W of a line that joins Fort Saint Louis and Pointe du Bout.

Vessels should send their ETA message and information through their agent 48 hours and 24 hours in advance of arrival.

The message should include, the vessel's name and flag, tonnage, length, beam, arrival draft, date and time of arrival, the number of crew aboard, and any dangerous or toxic cargo carried.

Vessels must obtain permission from the harbormaster before entering the port.

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

1. VHF: VHF channels 13 and 16
2. Telephone: 1-596-596-632-088
3. Facsimile: 1-596-596-638-190
4. E-mail: station@pilotage-martinique.com

The harbormaster can be contacted as follows:

1. VHF: VHF channels 12, 13, and 16
2. Telephone: 1-596-596-702-073
   1-596-596-702-373
3. Facsimile: 1-596-596-730-659
4. E-mail: capitainerie-fort-de-france.dde-martinique@developpement-durable.gouv.fr

The port can be contacted as follows:

1. Telephone: 1-596-596-590-000
2. Facsimile: 1-596-596-713-573
3. E-mail: port@martinique.port.fr

Anchorage.—Anchorage in Mouillage des Flamands is available with the spire of the chapel above the town bearing 041°, and the S extremity of Fort Saint-Louis bearing 094°.

Fort de France

Another good berth is with the clock tower bearing 014°, and the S extremity of Fort Saint-Louis bearing 088°.

A small prohibited anchorage area lies off the W side of Fort Saint-Louis, as may best be seen on the chart.

Mouillage de la Dillon farther E offers anchorage, in charted depths of 21 to 27.5m, clear of the shoals.

Cohe du Lamentin offers anchorage in a depth of 8m, about 0.25 mile off **Pointe du Lamentin** (14°36'N., 61°01'W.).

Mouillage de la Riviere Salee offers anchorage E of Gros Ilet, in a depth of 13m.

Mouillage des Trois Ilets is said to offer better shelter than Mouillage des Flamands or Cohe du Lamentin during the winter, but suffers from excessive heat in summer.

The charted area offers depths of 10.9 to 15.4m, but isolated shoal patches exist here, which may best be seen on the chart.

Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo must anchor in the tanker anchorage located 2 miles S of Pointe des Negres. An explosive ordnance dumping ground is located SE of the tanker anchorage area as best seen on the chart.

Directions.—Local knowledge is highly recommended for the approach to, and the channels within, Baie de Fort-de-France.

To enter the bay, keep the spire of the chapel, on the slope of the hill above the town bearing more than 027°, which leads W of all dangers.

To enter Mouillage des Flamands from NW, Pointe de Negres should be rounded at a safe distance, keeping N of Banc de la Viergie, and the wreck close SW of it.

A vessel approaching from the S and by day should steer for the chapel mentioned above, bearing 041°.

At night, steer with Fort Saint Louis Light bearing 073°, and well open of Point des Negres Light.

It is reported (2011) that the dayboards of the forward and after range markers are red and black with a white and black metal frame.

Caution.—A seaplane landing area is situated off the S shore of the bay, and may best be seen on the chart.

A large prohibited anchorage area containing submarine cables lies across the E portion of Baie de Fort-de-France, and may best be seen on the chart.

It has been reported (2008) that new pier construction is in progress on Banc de Carrieres, E of Baie des Tourelles.

9.7 Local magnetic anomalies have been reported in the vicinity of the S extremity of **Cap Salomon** (14°30'N., 61°06'W.). The cape forms the W end of a rugged promontory. A lighted radio mast stands 2 miles ENE of the cape. Morne Larcher (Morne du Diamant) rises steeply to a peak and lies 4 miles SE of the cape. Three small bights indent the coast between Cap Solomon and a steep-to rounded unnamed point, 4 miles SE of Cap Solomon.

Rocher du Diamant (Diamond Rock) (14°27'N., 61°03'W.), a prominent islet with almost vertical sides, 176m high, stands 1.5 miles SE of Morne du Larcher. Banc du Diamant, a small coral shoal with a least depth of 7.9m, lies about 0.75 mile ESE of the islet.

Grande Anse du Diamant, a foul bay, lies about 1 mile N of the rock. A submerged pipe extends SSW from the coast to about 0.75 mile into the center of the bay.

The coast between Grande Anse du Diamant and Pointe Borgnesse, about 7 miles ESE, is boarded by reefs with depths of less than 5.5m which extend up to 0.75 mile offshore.

Temporary anchorage can be taken in the bight which lies SE of the village of Sainte Luce, about 1.75 miles NW of Pointe Borgnesse. Care should be taken to avoid Caye de Sainte Luce, which lies on a bank 0.5 mile S of the village.

9.8 **Cul-de-Sac Marin** (14°27'N., 60°53'W.) is a small bay entered between Pointe Borgnesse and Pointe du Marin.

The harbor is restricted by reefs, especially near the entrance, but the water is so clear, that the dangers are usually clearly visible.

Le Marin (Marin) (14°28'N., 60°53'W.), a small town, stands at the head of the bay. Three chimneys W of the town are conspicuous. A light is shown from Pointe Marin.

Pilotage for the bay is available during daylight hours only and is compulsory for vessels carrying hydrocarbons or dangerous cargo, irrespective of loa, and all vessels over 50m loa bound for the port or anchorage. It is available from Fort de France with 2 hours notice. Pilots board about 1 mile SW of Borgnesse Point. Vessels should not approach closer than the pilot station.

Anchorage can be taken, in a depth of 22m, good holding ground, with Pointe Marin bearing 222°, distant about 0.4 mile, and Piton Creve-Coeur, a hill, bearing 105°. Do not attempt to enter or leave Cul-de-Sac Marin at night.

Ilet Cabrits (14°23'N., 60°52'W.), a low islet, lies off the S coast of Martinique and shows a light on its N end. The islet is fringed by a shoal reef. Two rocks lie 0.3 mile W of the islet. The coastal bank in this vicinity is steep-to, its edge being marked by the change in water color.

A stranded wreck is situated close SW of Ilet Cabrits in approximate position 14°23'N, 60°53'W.

The reef passes through the dangers off-lying the E coast of Martinique will be described first, thence the anchorages they lead to.

Vessels are reminded that pilotage is compulsory for Martinique and is available from Fort-de France. All of the passes and anchorages require local knowledge.

Table au Diable (14°23'N., 60°52'W.) is a rock on the coastal bank about 0.3 mile E of Ilet Cabrits. A local magnetic anomaly exists in the vicinity.

The coast between Table au Diable and Pointe Macre, about 6 miles NNE, provides no anchorage of any importance. The fringing reefs do not extend more than 0.5 mile offshore and are marked along their outer edges by breakers.

9.9 **Pointe du Vauclin** (14°34'N., 60°50'W.), about 5.5 miles NNW of Pointe Macre, is the termination of a spur of Montagne du Vauclin. The spur ends in a rugged hill on the point. The town of La Vauclin lies at the head of a bay, S of the point.

Between Pointe Macre and Pointe Caracoli, about 17.5 miles NNW, the coast is extremely irregular and fringed by dangerous off-lying barrier reefs.

Several passages lead through these reefs to sheltered harbors and anchorages, but local knowledge is essential. Vessels should keep at least 3 miles seaward of the barrier reefs along this stretch of coast.

Passe de la Pointe du Vauclin, with a least depth of 8m, is entered between Cayes du Vauclin, about one mile E of Pointe du Vauclin, and Cayes du Sans Souci, close N.

A buoy is moored 1 mile ENE of Pointe du Vauclin and marks the N extremity of Cayes du Vauclin.

A light is exhibited from a tower, situated on a point of land 1.25 miles SSW of Pointe du Vauclin. The white sector of the light leads close N of the buoy moored 1 mile ENE of Pointe du Vauclin.

Passe du Brigot (14°33'N., 60°48'W.) is entered between Cayes du Vauclin and Cayes Pariadis, about 0.4 mile SSE. The pass is obstructed by several dangerous patches and should not be attempted without local knowledge. The extremity of Cayes Pariadis is marked by a buoy.

Passe du Vauclin (14°31'N., 60°48'W.), at the S end of the barrier reef, is entered between Cayes Pariadis and Cayes du Macabou, about 0.5 mile W.

There are several detached shoals in the pass which should not be attempted without local knowledge. A cay 0.75 mile within the entrance to the pass is marked on its S side by a buoy.

Passe de Caye Pinsonnelle (14°36'N., 60°49'W.), entered about 1.5 miles NNE of Pointe du Vauclin, leads between Caye Pinsonnelle and Cayes du Sans-Souci to the S. There is a least charted depth of 7.9m in the fairway. This passage requires local knowledge.

Passe de Caye Mitan (14°39'N., 60°50'W.), entered between Caye Pinsonnelle and Caye Mitan to the N, leads NE of the reefs which extend N from Ilet Bouchard and Ilet Thiery. This pass is used only in good weather by small vessels with local knowledge. During bad weather vessels use Passe de Caracoli.

9.10 Passe du Loup Garou (14°40'N., 60°51'W.) is entered between Caye Mitan and Loup Garou, about 1.25 miles N. Loup Garou is almost awash and Loup Marseillais, about 0.3 mile to the W, has a least depth of 2.7m.

The N extremity of Ilet des Chardons, in range 272.5° with the spire in Le Robert, leads through the entrance of the pass. Two wrecks, bearing 080° at 1.8 miles from Pointe de la Rosa, along with a 3.1m patch, lie close S of the range line.

There are several heads of the barrier reef, almost awash and dangerous, which lie between Loup Garou and Pointe Caracoli.

Passe de Caracoli (14°45'N., 60°52'W.), the principal channel through the barrier reef, is entered between Pointe Caracoli and the 9m shoal about 0.5 mile SSE. A buoy NW of the shoal marks the passage. The sea breaks heavily on this shoal during strong winds, but in calm seas its position is indicated by the whitish color of the water.

Pointe Caracoli (14°45'N., 60°52'W.), the E extremity of Presqu'ile de la Caravelle, is a prominent rocky bluff. A coral reef extends about 0.3 mile E from the point. A light is shown 1 mile NNW of the pointe.

Presqu'ile de la Caravelle (14°45'N., 60°55'W.) extends about 5 miles ENE from the general line of the coast. This peninsula is prominent with a ridge extending along its entire length. A TV tower stands on the summit of the ridge. The S coast of the peninsula is indented by a number of bays, fringed with coral reefs on which the sea breaks.

Baie du Francois (14°38'N., 60°53'W.) lies about 2 miles W of Ilet Oscar (Ilet Bouchard). It consists of a fishing port and a commercial facility for handling sugar.

It affords anchorage for vessels of medium draft. Two narrow, difficult channels lead through several reefs which obstruct the entrance leading into this anchorage.

Local knowledge is required.

A number of lighted buoys mark the channel to the anchorage. The best anchorage lies S of Ilet Lavigne in a depth of 12.8m, good holding ground.

During fine weather, a vessel with local knowledge can approach Baie du Francois through Passe de Caye Mitan.

Pilotage.—Pilotage is compulsory. At least 2 hours notice of arrival is required by the pilot station at Fort-de-France for the provision of a pilot.

9.11 Havre du Robert (14°40'N., 60°54'W.) lies along the N side of a peninsula terminating to the E in Pointe de la Rose. The approach channel from the N pilots board 0.6 mile SE of Point Caracoli while using **Passe de Caracoli** (14° 45' N., 60° 52'W.), which is the principal channel through the barrier reef and the only channel recommended in bad weather. From the S Pilots board about 3.5 miles SE of Ile Petit Piton and should pass through the **Passe de Caye Mitant** (14° 39' N., 60° 50'W.).

The irregular shores of the harbor are fringed by coral reefs which extend from 0.25 to 1 mile offshore in places.

A number of buoys mark the dangers in the harbor and can best be seen on the chart.

Pilotage.—Pilotage for the harbor is compulsory for vessels over 50m in length arriving or anchoring. Pilots come from Fort de France. Two hours notice is required.

Regulations.—Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo are prohibited from entering the harbor.

Anchorage.—The best anchorage for moderate sized vessels is in the NW part of the harbor, in depths of 10 to 11m, W of Ilet Petite Martinique, which stands 1 mile ENE of Pointe Fort.

Vessels loading sugar in the SW part of the harbor anchor, in a depth of 9.1m, with Pointe Royale in range with the N extremity of Ilet des Chardons in alignment bearing 075°.

Small craft with local knowledge can anchor, in depths of 12.8 to 16.5m, good holding ground, in most of the numerous sheltered coves which indent the shores of Havre du Robert.

Passe du Loup-Garou (14°40.3'N., 60°50.6'W.) is prohibited to navigation.

Caution.—A dangerous wreck lies 2 miles E of the approach to the harbor which renders passage Passe du Loup-Garou unsafe.

9.12 Le Robert (14°41'N., 60°57'W.), a sugar exporting center, stands at the head of Havre du Robert. No berthing facilities are available. All cargo is handled by lighters at the anchorages.

Baie du Galion (14°44'N., 60°55'W.) is bordered on its side by Presqu'ile de la Caravelle and is entered between Pointe Brunel and Pointe Banane, about 1.25 miles SSW.

Pilotage.—Pilotage is compulsory for the bay. Pilots are available from Fort de France with 2 hours advance notice.

Anchorage.—The best anchorage in Baie du Galion, sheltered from all winds, can be taken with Pointe Brunel bearing 111° and the television tower on Morne Tartane bearing 013°. Depths range from 8.2 to 9.1m.

Anchorage can also be taken, in a depth of 9.1m, about 0.3 mile off the E side of Ilet du Galion.

9.13 Pointe du Diable (14°47'N., 60°53'W.) is the N extremity of Presqu'ile de la Caravelle. A light is shown 0.5 mile SE of the point.

Between Pointe du Diable and Rocher Pain de Sucre, 7.25 miles WNW, the coast is fronted by a coral bank, over which, in places, there are depths of less than 9.1m, but access to the numerous havens is not difficult. A submarine cable extends.5 mile N of Pointe of Bibi, W of Baie de Tartane.

From Rocher Pain de Sucre the coast trends about 9.5 miles WNW to Pointe du Macouba, the N extremity of Martinique. This part of the coast is free of dangers. There is no bay or cove along this stretch of coast which affords shelter from the heavy swell which usually prevails.

Rocher de la Caravelle is a rugged, barren, and steep-to rock located about 1.75 miles NNE of Pointe du Diable. Its pointed summit, covered with guano, gives it the appearance of a vessel under sail. It is an excellent landmark for vessels making this part of the coast in daylight.

Loup de Sainte Marie (14°48'N., 60°59'W.), a small bank with a least charted depth of 9.6m, lies 1.5 miles ESE of Rocher Pain de Sucre. During NE or ENE winds, a heavy sea

sets across this bank and may break at times.

Between this bank and Pointe du Diable, a chain of coral patches with depths of less than 9.1m fouls the approach to Havre de la Trinite. The depths over these patches are very irregular and during fresh winds the sea breaks over some of them. Deep-draft vessels must not cross this chain. In fine weather, the shoal spots are indicated by the color of the water.

9.14 Havre de la Trinite (La Trinite) (14°45'N., 60°58'W.) is easy of access and provides shelter from the prevailing winds. The town of La Trinite stands on the SW side of the bay. Alongside berthing is not available to ocean-going vessels. All cargo is handled by lighters at the anchorage.

On approaching the bay, a statue about midway along its E side is conspicuous. The ruins of a windmill stand about 0.5 mile NNE of the statue.

Pilotage.—Pilotage is compulsory. Vessels must give 2 hours advanced notice of their arrival to Fort de France for the services of a pilot. Pilots board vessels 0.7 mile NE of Ilet Saint Aubin. Pilots will not take vessels in at night.

Regulations.—Vessels over 1,600 gt carrying hydrocarbons or dangerous cargo are prohibited from entering the harbor.

Anchorage.—Vessels obtain anchorage in the outer part of the harbor, in a depth of 16.5m, with the ruins of the windmill bearing 123° and Pointe Sainte Catherine bearing 210°.

When proceeding to the inner part of the harbor, anchorage can be taken, in a depth of 10m, with the above windmill bearing 078° and the E side of Ilet Sainte Aubin bearing 349°.

Directions.—The harbor should be approached from NW passing either side of **Loup Sainte Marie** (14°48'N., 60°59'W.) though the E channel is to be preferred as the dangers are buoyed. When approaching this shoal Rocher de la Caravelle should be kept bearing more than 091°, and Pointe Pain de Sucre (Rocher Pain de Sucre) less than 271°.

To pass E, when the ruined tower of Beau Sejour mill bears 154°, open NE of Ilet Saine Aubin, it should be steered for.

To pass W keep Beau Sejour mill, bearing 145°, open SW of the Ilet Sainte Aubin, which will lead about 0.25 mile SW of Loup Sainte Marie.

Whichever channel is used, when Ilet Sainte Marie bears 265°, a vessel will be inside the banks and may steer to pass 0.5 mile E of Ilet Sainte Aubin.

Caution.—A dangerous wreck lies 0.2 mile off the conspicuous statue.

Saint Lucia

9.15 Saint Lucia (13°55'N., 60°58'W.) is mountainous and for the most part wooded. Its volcanic peaks rise to considerable elevations, and are seldom entirely clear of clouds. Mount Gimie, the highest peak on the island, stands on the S half of the W part of the island. The coast of the island is exposed to the full impact of the Atlantic Ocean and does not offer any secure anchorages.

On the W side of the island there are several safe bays and harbors. Port Castries is the principal harbor.

Winds—Weather.—See paragraph 9.1 for further information. In the vicinity of the island, the trade winds blow with high degree of constancy throughout the year.

The island may be affected by hurricanes, but gales are infrequent.

Tides—Currents.—See paragraph 9.1 for further information. It has been found that within a distance of 5 miles of the island the current usually sets N and NW at a velocity up to 2.5 knots. It was reported that a 1.5 knot current sets NE between Saint Lucia and Barbados.

Pilotage.—The pilot boards approximately 3.5 miles W of Port Castries,and can be contacted on VHF channels 9, 16, and 65.

9.16 Martinique-Saint Lucia Channel is 17 miles wide. The channel has general depths of more than 914m, except in its SW part, where depths of less than 183m extend about 4.5 miles N from Saint Lucia. Some isolated patches have been reported.

The prevailing current in the channel is W, tending to the NW. Its velocity is variable. Near the islands it may attain a rate of about 3 knots, but at times it may be almost imperceptible.

9.17 Pointe du Cap (14°07'N., 60°57'W.), the N extremity of Saint Lucia, is steep-to but comparatively low. Several small hills rise in the vicinity.

From this point the coast trends about 1.5 miles ESE to Pointe Hardie, the NE extremity of the island, which is sloping but well-defined. Gros Loup, a group of rocks awash, lies about 0.25 mile ESE of Hardie Point.

Foul ground lies in the small bays S of Hardie Point.

This area should be given a wide berth as it is fronted by the Fous Islets and by some above-water rocks and sunken dangers. Some of the rocks break with the sea.

Esperance Harbor (14°04'N., 60°55'W.), about 2.25 miles SSE of Hardie Point, is a narrow cove suitable only for small local craft. Between this harbor and Cape Marquis, about 1.5 miles SE, the rocky steep-to coast is backed by hills of moderate height.

9.18 Cape Marquis (14°03'N., 60°54'W.) stands at the extremity of Morne Gaiac, a conspicuous peaked hill. A light is shown on Cape Marquis. The coast between this cape and Port Dennery, about 8.5 miles to the S, is mostly bleak and cliffy.

Trou Halhal (13°57'N., 60°53'W.), entered about 3 miles S of Tortue Point, provides good anchorage to small vessels with local knowledge. An islet lies off the S entrance point and some rocks lie off the entrance point.

Fond d'or Bay (13°56'N., 60°53'W.), about 2 miles S of Trou Halhal, is sometimes used as an anchorage by small local craft, but is considered unsafe because of the heavy swell that enters the bay. The S entrance point of the bay has a reef extending about 0.25 mile NE from it.

Port Dennery (13°55'N., 60°53'W.) lies about 1 mile S of Fond d'Or Bay. This bay also affords anchorage to small local craft. An islet and some rocks off the entrance point provide some shelter to this anchorage. A hospital in the village at the head of the bay is conspicuous.

Chapeau Point (13°51'N., 60°54'W.) lies about 3.5 miles S of Port Dennery. It consists of a double point with a remarkable red patch which shows up well in sunlight.

Port Micoud, about 1.5 miles SSE of Chapeau Point, is a good boat harbor, but local knowledge is necessary because of

the narrow entrance channel.

9.19 Savannes Bay (13°46'N., 60°56'W.) lies about 4 miles SSW of Port Micoud. The bay is fouled by reefs and access is difficult. Small vessels with local knowledge frequent the bay. A coral reef fringed by foul ground extends about 0.75 mile offshore for almost 2 miles S of the entrance. The Maria Islands, the largest of which lies at the S end of the above reef, shield the entrance to Anse De Sables.

Moule a Chique (13°43'N., 60°57'W.), a promontory forming the S extremity of Saint Lucia, is a precipitous headland. Cap Moule a Chique, its extremity, rises close to Morne Pavillon, the highest summit of the promontory, close W of which is another peak 220m high, on which stand some ruined buildings. A light is shown on the summit. Ministre Point, is the S extremity of the promontory. A prominent boulder stands on this point.

Fond Blanc (13°42'N., 60°56'W.), about 1 mile SE of Cap Moule a Chique, has a least depth of 11m and should be avoided because shallower depths may exist. There are depths of 21.9 to 25.6m, 3.5 miles S of Cape Moule a Chique. A depth of 155m was reported 6.25 miles SSE of the cape.

Vieux Fort Bay (13°43'N., 60°58'W.) lies on the W side of Moule a Chique and is entered between Mathurin Point and Georgie Point. A light is displayed form Mathurin Point. A wreck and an obstruction lie in the entrance to the bay about 0.5 mile NW of Mathurin Point.

9.20 Vieux Fort (13°44'N., 60°57'W.) (World Port Index No. 11620) stands at the head of the bay close NW of Battery Point.

Vieux Fort Harbor from E

Depths—Limitations.—The container terminal has a length of 182m; depths at the berth were reported (1991) to be 10.7m.

A single jetty, at the S end of the container terminal, has a 152m long berth on each side; depths were reported (1991) to be 10.7m on the N side and 9.8m on the S side.

A ro-ro berth lies adjacent to the S end of the container terminal. It was reported (1993) that the ro-ro berth is preferred over the berth at the container terminal when there is a NE swell.

Aspect.—Lighted beacons, in range 060°, lead to the berths alongside of this pier.

The white dome of the Custom House, 0.1 mile ENE of the root of the pier, is conspicuous, as is the spire of the church in town.

It was reported that works were in progress within the port. The intent is to dredge the harbor area to a depth of 9.7 to 10.7m. Caution is advised.

Pilotage.—Pilotage is compulsory for vessels over 100 gt. The pilot boards about 1.75 miles off Mathurin Point.

Application for a berth must be submitted by the vessel or its agent 72 hours before ETA. The vessel's ETA, draft, and bunker requirements should be sent 48 hours in advance.

Vessels should not approach within 3.5 miles of the port until radio contact has been established. The port and the pilots can be contacted on VHF channel 16.

Anchorage.—Anchorage is prohibited in an area extending 0.7 mile WNW of Mathurin Point and 1 mile SW of the town; this area is best seen on the chart.

Anchorage may be obtained to the NW of the prohibited anchorage area.

9.21 Laborie Bay (13°45'N., 61°00'W.) lies about 2.5 miles NW of Vieux Fort Bay. The entrance to the bay is narrow and at times a swell enters. Anchorage is confined.

A village stands at the head of the bay and there is a small wooden pier with a depth of 2.7m alongside. A reef, on which the sea breaks, lies on the NW side of the bay.

Balembouche Rocks (13°45'N., 61°01'W.), which extend about 0.25 miles offshore, lie 2 miles NW of Laborie Bay. These rocks usually break with any swell. The mouth of the Doree River lies on the NW side of the rocks but is barely visible from seaward.

Anchorage can be taken, in depths of 9.1 to 11m, sand, good holding ground, about 0.5 mile W of the river mouth.

Choiseul Bay (13°47'N., 61°04'W.) lies about 1.25 miles NW of the mouth of the Doree River. The bay provides anchorage, in a depth of 12.8m, abreast the church at the head of the bay. A small pier, with a depth of 4.9m at its head, fronts the village at the head of the bay.

Pitons Bay (13°50'N., 61°05'W.) is entered between Gros Piton Point, the SW extremity of Saint Lucia, and Petit Piton Point, about 0.5 miles NNE.

Two conspicuous peaks back the entrance points. Occasional violent squalls descend from these peaks. The depths off the two points are considerable.

Anse des Pitons is entered close S of Petit Piton Point. Overfalls occur off Gros Piton Point.

9.22 Soufriere Bay (13°51'N., 61°04'W.) is entered about 1.25 miles N of Petit Piton Point. The depths in the bay are too great for anchoring, except for small vessels with local knowledge, who anchor close offshore with their sterns secured to the shore.

The town of Soufriere stands at the head of the bay where there is a concrete jetty, 45.7m long, with a depth of about 5.5m alongside its N side. The jetty was reported to be in a poor state of repair with many steel piles exposed. It is advisable to approach it only in daylight with caution.

Caution.—Anchorage is prohibited in the coastal area between Anse Jambon (13°52'N., 61°05'W.) and Anse L'Ivrogene (13°48'N., 61°04'W.).

Marigot Harbour, a small inlet entered through a narrow channel, lies 0.75 mile NNE of Pilori Point. Anchorage may be obtained by small craft, in depths of from 5.5 to 8.2m, clear of the charted submarine cable. The bottom is soft mud, and the holding moderate.

A T-shaped jetty lies on the SE side of the basin. There are several small jetties on each side of the harbor, off the entrance to the basin.

Grand Cul de Sac Bay (13°59'N., 61°01'W.)

World Port Index No. 11625

9.23 Grand Cul-de Sac Bay is entered between Bananes Point and Ciceron Point, about 0.75 mile NE. Navigation in the bay and its approaches is prohibited except to vessels using the terminal. The oil terminal within the bay, one of the largest in the Caribbean, is able to handle vessels up to 400,000 dwt.

Winds—Weather.—It has been reported that wind velocities are generally lighter at night. About daybreak the wind's speed begins to pick up reaching maximum strength in the late morning to early afternoon, and diminishing around 1600.

Under abnormal conditions, such as a hurricane, vessels will be notified that additional moorings are required. Masters may be instructed to suspend all operations and proceed to sea until normal weather conditions prevail.

Tides—Currents.—Normally, there is a N set off the island's W coast, at rates of 1 to 2.5 knots.

Depths—Limitations.—The approach is clear of dangers and shows a least depth of 27.5m along the approach track.

The port has been reported to handle tankers up to 400,000 dwt, with a maximum draft of 25m. The VLCC berth can accommodate vessels up to 396m loa. A second smaller berth can take tankers up to 50,000 dwt, 228.6m loa and 12.2m draft.

There is a dry cargo dock situated in the SE portion of the bay. This berth can accommodate vessels up to 50,000 dwt, 228m loa and 12.2m draft. Petroleum products can be handled at this berth.

Aspect.—Several additions to the navigational aids marking the bay have been introduced. Vessels are urged to contact the local authorities for the latest information on berths, depths, aids to navigation, regulations, etc. before planning a voyage here.

A safe water buoy is be moored about 0.25 mile NNE of Bananes Point. Two sets of range lights lead into the bay. The Cul de Sac Range, in line bearing 131°, leads SW of the safe water buoy. The Ciceron Range, in line bearing 105.5°, lead into port passing NNE of Bananes Point and SSW of the safe water buoy.

Pilotage.—Pilotage is compulsory and is available 24 hours. Vessels should pass their ETA and request for pilotage at least 72 hours in advance, confirming 48 hours and 24 hours prior to arrival. Final confirmation should be passed 3 hours prior to arrival at the pilot boarding position.

The boarding ground is situated about 3 miles NW of Bananes Point. It is reported that, after boarding the pilot, the recommended track for approach and entry to the bay is 118°. The pilot and terminal operators may be contacted (call sign: Hess Saint Lucia) on VHF channel 16.

Regulations.—Navigation within the bay or approaches to it is prohibited, except to vessels using the terminal.

The local authorities, Hess Oil Saint Lucia Limited, should be consulted for specific terminal regulations. Dirty ballast facilities have been reported to be available.

Anchorage.—The local authorities, and the pilot should be consulted for advice on anchorages. Anchoring in the approaches to or the waters of the port is prohibited.

Permission to anchor in the bay must be obtained from the Terminal Manager.

Port Castries (14°01'N., 61°00'W.)

World Port Index No. 11630

9.24 Port Castries lies about 0.5 mile NE of La Toc Bay and is entered between the SW end of Vigie Promontory and Tapion Rock, about 0.25 mile SSW. Port Castries is the principal port in Saint Lucia.

Port Casties has undergone considerable development and modernization in recent years.

Tides—Currents.—Currents off Vigie Point do not exceed 1 knot and are variable in direction.

From S a vessel should keep Vigie Point bearing more than 070°, in order to clear Tapion Shoal and the shore bank extending from the S entrance point, until the range lights are in line.

Range lights, in line bearing 121°, stand at the head of the harbor. The front light stands on West Wharf 91m S of North Wharf; the rear light stands 0.5 mile ESE of the front light. It is reported (2009) that the range markers are not visible until the ship enters the harbor. The range consists of a forward orange upside down triangle marker with a white center stripe located on the corner of a small shed warehouse and is hard to distinquish from the background. The after range marker is of the same color and design and also blends in with the background.

Depths—Limitations.—In addition to the main wharves at Castries, there are the following:

1. Texaco Oil Terminal is situated at Cocoa Nut Point, 0.5 mile S of Vigie Light, on the SW side of the harbor.
2. A submarine oil pipeline is laid from the point across Cocoa Nut Shoal to a mooring buoy nearly 0.1 mile E. Vessels discharging oil moor to this buoy. A second mooring buoy is located 180m SE of the first buoy. For detailed berthing information see the table titled **Port Castries—Berth Information**.

Port Castries—Berth Information

Berth	Length	Depth	Remarks
Pointe Seraphine Passenge Terminal			
No. 2	122m	36m	Passenger vessels. With mooring dolphins the berthing length is 320m.
No. 3	92m	34m	Passenger vessels. With mooring dolphins the berthing length is 228m).

Port Castries—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Annexe Berth	170m	8.0m	Passenger vessels.
Elizebeth II Dock (Container Terminal)			
No. 1	61m	6.0m	Containers.
No. 2	219m	9.0m	Containers.
No. 3	219m	9.0m	Containers.
No. 4	151m	10.0m	Containers.
No. 5	158m	10.6m	Containers. A ro-ro ramp about 14.6m wide is located at the S end.
No. 6	136m	9.7m	Petroleum products.

Aspect.—Morne Fortune (13°59.8'N., 60°59.5'W.) rises to 260m about 0.5 mile S of Castries; Fort Charlotte stands on it. Two masts stand, one on each side of a hospital, stand 0.4 mile W of the summit.

A promontory, on the N side of the entrance, is a wedge-like ridge rising to 90m at its E end. Vigie Point is its W extremity. Vigie Light stands on the summit of the promontory, with a signal station close by.

Vigie Light (Cape Moule a Chique Light)

A conspicuous radio mast, with a height of 120m stands 91m NE of Vigie Light.

Tapion Rock is located 0.45 mile S of Vigie Point, 14m high and reddish in color, is reported to be difficult to distinguish from seaward. A light stands on the summit of Tapion Rock; it has been reported (2008) that this light may be difficult to see at any time of day or night until close in.

A prominent hotel stands on the S shore of La Toc Bay lying immediately S of Tapion Rock.

Pilotage.—Pilotage is compulsory for merchant vessels over 100 gt. Pilots are available on 24 hours.

Regulations.—Vessels should send their ETA, draft, and request for pilots at least 48 hours in advance of arrival and

Vigie Light (Cape Moulie a Chique Light)

Tapion Rock Light

should not approach within 3.5 miles of the port until radio contact has been established. The pilot boards about 1.5 mile off the harbor entrance on the range line of the channel.

Vessels are not permitted to approach within 100m of any of the berths until pratique has been granted by the pilot. Other port officials board after a vessel has berthed.

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

1. Call sign: Castries Lighthouse
2. VHF: VHF channels 6, 12, 14, and 16.
3. RT Frequency: 2182 kHz and 2146 kHz
4. Telephone: 1-758-457-6100
   1-758-457-6157
5. Facsimile: 1-758-452-76190
6. E-mail: info@slaspa.com

Anchorage.—Vessels can anchor off the harbor entrance as

Port Castries

convenient keeping clear of submarine cables leading to La Toc Bay, S of Tapion Rock. The holding ground SW of Vigie Point is reported to be good.

Inside the harbor a vessel may anchor according to draft, keeping clear of the fairway and of a submarine cable, close within the harbor entrance. The holding ground within the harbor is good, but there is little swinging room. A charted anchorage is found at the head of the harbor.

Directions.—Castries Harbor is entered about 0.35 mile SW of Vigie Point between the shore banks extending seaward from this point and from Tapion Rock. There is a navigable width of 0.1 mile between the 10m curves on each side of the channel.

The channel through the harbor, in which depths from 12.2 to 15.5m were found by survey, leads ESE from the entrance for a distance of nearly 1 mile to the wharves at Castries. It is indicated by range lights consisting of white triangles, poinst up, with an orange stripe down the center. The front light is the easier of the two range lights to see and is located at the NE corner of the warehouse, as indicated on the chart. It was reported (2008) that both range lights were difficult to see as they are mixed in with the colorful landscape of the buildings. The rear light is visible only in the channel.

A vessel approaching from N should steer SW, passing at least 0.2 mile from Vigie Point in order to avoid the shoal bank extending from that point. When Tapion Rock bears 154°, it should be steered for on that bearing until the fairway range lights come into line.

Caution.—Shallow rocky flats and foul ground extend a short distance from most of the points in Port Castries.

The water is usually muddy and the shallows are not easily distinguished.

9.25 Choc Bay (14°03'N., 61°00'W.) is entered between Vigie Point and Labrellotte Point. The bay is fouled by numerous dangers and depths of less than 5.5m extend from 0.3 to 0.75 mile offshore.

A dangerous reef, which breaks, lies in the N part of the bay. A river discharges into the middle of the bay. Rat Island (Rat Islet), with a hospital on it, stands about 0.7 mile WSW of the mouth of the above river.

A prohibited anchorage area encompassing the submarine cables best seen on the chart, about 1 mile wide, extends 2.7 miles NNW and then 2.3 miles NW from the shore of Choc Bay, passing W of Rat Islet. Anchorage is available W of Rat Island, in depths of 11 to 15m.

Rodney Bay (Gros Inlet Bay) (14°05'N., 60°58'W.) is entered between Fourreur Islet and Pigeon Island. A light is shown from Fourreur Island. The village of Gros Islet is located in the NE part of the bay. The entrance to a large yacht harbor lies S of the village and two hotels stand farther S.

The entrance to the harbor has a jetty on both sides. The shape of the N jetty head is worthy of note as it lies very close to the alignment 098° of the range lights for the entrance channel. There is a light at the head of each jetty. In 1993, it has been reported that confusion can occur between the red light on the S jetty and the red brake lights of cars in a parking lot nearby.

The harbor is well-equipped for small craft. The Rodney Bay Marina has 232 side-tie berths, with depths from 10 to 11m between the side-ties.

General depths inside the harbor are reported to be in excess of 2.5m and craft with a keel depth of 3m are reported to have been accommodated.

Anchorage is available in the N part of the bay with Gros Islet Church bearing 101° and the W extremity of Pidgeon Island bearing 355°.

Burgot Rocks (14°06'N., 60°58'W.), two in number, and

about 11.3m high, stands about 0.25 mile off Pigeon Island. East of these rocks the depths are shoal. Tide rips occur in the vicinity of these rocks.

Caution.—Caution should be exercised as shoaling has taken place due to the reclamation work between Pigeon Island and the mainland. Depths may be less than those charted.

Saint Vincent

9.26 Saint Vincent (13°15'N., 61°12'W.), situated with Porter Point, its N extremity, about 23 miles SSW of the S extremity of Saint Lucia, lies almost on the same parallels of latitude as Barbados and about 87 miles W of that island.

The island is mountainous and wooded. The volcano Soufriere rises abruptly from the N end of the W coast of the island. The volcano erupted many years ago.

The coasts of the island are bold and rocky, but in many places there are sandy bays, off which small craft obtain temporary anchorage.

The largest town is Kingstown and is fronted by the principal commercial harbor.

Tides—Currents.—The current sets to the N off Saint Vincent and at a distance of 5 miles or more from the coast the tidal currents are negligible.

Off the SW side of the island, the NW current attains a rate from 1.5 to 2.2 knots. At spring tides, off the same coast, the SSE current attains a rate of 0.7 knot to 2.0 knots. The currents are subject to great irregularities due to wind and current.

The current sweeps around Kingstown Bay and at times attains a rate of almost 2 knots.

9.27 Porter Point, the N extremity of the island of Saint Vincent, is salient, cliffy, and conspicuous. The point has been reported to be a good radar target at distances up to 16 miles.

A group of prominent buildings stand about 0.3 mile W of Porter Point. Owia Bay, about 1 mile ESE of Porter Point, is entered on the W side of Owia promontory.

Owia Light is exhibited, at an elevation of 36m, from a metal framework tower, 6m high, on the promontory.

The bay affords temporary anchorage to small craft during good weather.

Cow and Calves (13°22'N., 61°09'W.) are a chain of rocks, the highest having an elevation of 13.7m, located close off the NE side of the above promontory.

Turema Point (13°20'N., 61°08'W.) lies about 3 miles SSE of Cow and Calves. The coast between this point and Black Point, about 4 miles S, is bordered by boulders on which the sea breaks heavily.

Georgetown, a village about 1 mile N of Black Point, can be identified by its church tower of dark stone.

Yambu Head (13°09'N., 61°09'W.), a conspicuous headland, lies about 6.75 miles SSW of Black Point. Milligan Cay, with a rock close E of it, lies about 2.5 miles SW of Yambu Head.

A lighted radio mast stands about 1.75 miles WNW of Yambu Head.

Milligan Cay Light is exhibited from a metal framework tower, 6m in height, on the SE extremity of Saint Vincent.

Calliaqua Bay (13°07'N., 61°12'W.), located on the SW side of Saint Vincent, can be identified by Duvernette Islet and Young Island on its NE side. A village stands at the head of the bay. The islet has the ruins of fort on its summit and a black, sandy beach.

There are depths of 21.3m in the middle of the bay, shoaling rapidly close to the surrounding shore. The bay provides good anchorage for small craft. The bight N of Young Island offers anchorage to small vessels.

A light is shown on Duvernette Islet. A submarine cable is laid across the channel between Young Island and the mainland.

Caution.—Caution must be used when entering as both sides of the bay entrance are foul. Allowance should be made for the strong W current.

9.28 Cane Garden Point (13°08'N., 61°14'W.), which slopes gently to the sea, is the W extremity of a promontory which lies 1.25 miles NNW of Young Island and separates Greathead Bay from Kingstown Bay. Strong tide rips occur off Cane Garden Point.

Kingstown Bay (13°09'N., 61°15'W.) is entered between Cane Garden Point and Old Woman Point, about 1.25 miles to the NW. The depths in it are considerable throughout, and 0.25 mile off the town of Kingstown at its head, there are depths from 33 to 36.6m. The bay affords good anchorages.

Kingstown (13°09'N., 61°14'W.)

World Port Index No. 11640

9.29 Kingstown is the capital of Saint Vincent and a first port of entry. Alongside berthing facilities are available for large vessels abreast the town. There are depths of 88 to 93m at the entrance.

Depths—Limitations.—For berthing information see the table titled **Kingstown—Berth Information**.

Aspect.—Fort Charlotte, with its conspicuous buildings and flagstaff, is situated on the high ground N of Old Woman Point. A light is displayed from Fort Charlotte. The harbor signal station is also located here.

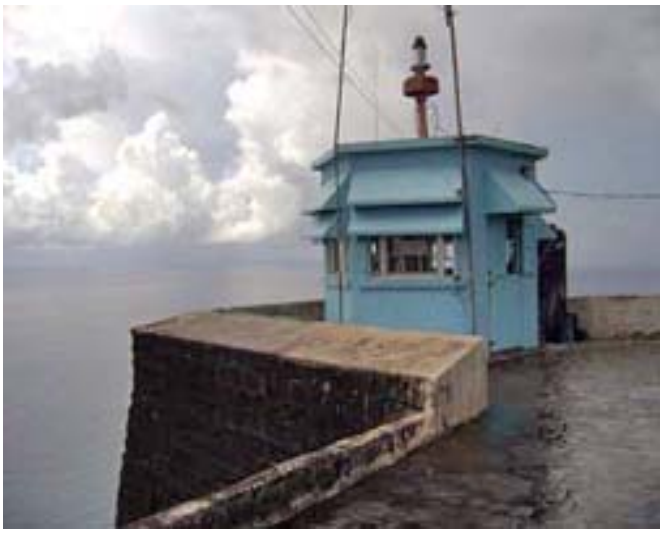
Kingstown—Berth Information

Berth Name	Length	Depth	Remarks
Cruise Ship Terminal			
Cruise Terminal North	260m	11.0m	Passenger vessels up to 70,000 gross tons
Cruise Terminal South	160m	7.0m	Passenger vessels up to 15,000 gross tons with a maximum loa of 100m

Kingstown—Berth Information			
Berth Name	**Length**	**Depth**	**Remarks**
Annexe Berth	170m	8.0m	Cruise vessels
Cargo Piers			
Deepwater Pier	274m	9.7m	Fresh produce, bananas, containers, and general cargo
Campden Park Jetty	100m	12.0m	Containers
Campden Park (Flour Mill)	91m	11.0m	Grain and flour
Tanker Berthing			
Amos Vale Terminal Greathead Bay	95m	10.9m	Tankers and LPG carriers
Amos Vale Terminal Greathead Bay	137m	10.9m	Tankers and LPG carriers
Arnos Vale CBM	—	8.0m	LPG mooring consists of three mooring buoys connected by pipelines to the shore
Other Berths			
Schooner Basin	—	—	Small inter island vessels

The cathedral, with its square white tower near the NW part of town, is also conspicuous. The clock on the tower is lighted at night. A prominent white house with a red roof stands about 0.25 mile S of the town.

Pilotage.—Pilotage is compulsory for vessels over 150 gt proceeding alongside Deep Water Wharf, the berth in Greathead Bay, and the Arnos Vale Oil Terminal. Pilots require 24 hours advanced notice of ETA. Pilots board vessels at the entrance to the bay.



Fort Charlotte Light

Vessels should contact the Signal Station at Fort Charlotte on VHF channel 16 for movement within the harbor.

Contact Information.—The pilots can be contacted as follows:

1. Call sign: ZQS
2. VHF: VHF channels 11 and 16
3. Telephone: 1-784-456-2072
4. Facsimile: 1-784-456-2732

The port can be contacted, as follows:

1. VHF: VHF channels 11 and 16
2. Telephone: 1-784-456-1830
3. Facsimile: 1-784-456-2732

The Signal Station can be contacted, as follows:

1. Call sign: ZQS
2. VHF: VHF channels 11 and 16
3. RT Frequency: 2182 kHz
4. Telephone: 1-784-456-1165

Anchorage.—Vessels can obtain anchorage, in a depth of 36.6m, sand, in the middle of the bay, about 0.3 mile offshore. The holding ground is good.

During the middle of the day, the wind frequently blows down the valleys with great violence. Vessels at anchor should be prepared to pay out a good scope of chain. At night the breeze is light.

Caution.—A dangerous wreck and a stranded wreck are reported in approximate position 13°09'N, 61°14'W.

9.30 Buccament Bay (13°11'N., 61°17'W.) lies about 3 miles NW of Kingstown. A stream discharges into the head of the bay. There are general depths of 47.5m about 91m offshore. Small vessels with local knowledge can anchor, in a depth of 31m, close of the mouth of the stream.

Camden Park Bay and Lowmans Bay, separated by a rocky outcrop, form York Bay, which is entered 1.5 miles SE of Buccament Bay. There are general depths of 29.3m in the middle of the bay, rising steeply close offshore. The seabed and the beach consist of black volcanic sand.

Barrouallie Bay (13°14'N., 61°17'W.) lies about 2.75 miles N of Buccament Bay. Anchorage in the bay is only suitable for small vessels with local knowledge. The bottom on the NW side of the bay is foul. A stream discharges into the head of the bay and close to it is a small pier.

Bottle and Glass Rocks (13°14'N., 61°18'W.) lie about 0.25 mile offshore and on the N side of Barrouallie Bay. A conspicuous pylon stands 0.25 mile NE of the rocks.

The coast between Bottle and Glass Rocks and Chateaubelair Bay, about 4 miles NE, is indented by four small

bays.

Anchorage can be taken in these bays by small craft with local knowledge.

9.31 Chateaubelair Bay (13°18'N., 61°15'W.) is entered between Chateaubelair Islet and Richmond Point, about 1 mile NE. Small vessels can anchor, in depths of 23.8 to 25.6m, about 0.2 mile NE of a concrete pier at the head of the bay.

Wallibu, a small village, stands about 1.5 miles NE of Chateaubelair Islet. Exposed anchorage can be taken off the village, in a depth 31m.

Morne Ronde Point (13°20'N., 61°14'W.), about 1 mile N of Wallibu, appears as a hummock from the S. A village stands close S of the point. Larikai Point is fronted by a chain of rocks extending about 137m from it, and lies about 1 mile NNE of Morne Ronde Point. De Volet Point lies about 1.75 miles NNE of Larikai Point and is prominent.

Cape Rolle (13°23'N., 61°12'W.), bold and prominent, lies about 1 mile ENE of De Volet Point. Booby Rock, lies close inshore, about 0.75 mile ENE of Cape Rolle.

The coast between Cape Rolle and Porter Point, about 1.25 miles E, is indented by some small bays which are exposed and of no commercial value.

The Grenadine Islands

9.32 The **Grenadine Islands** (12°45'N., 61°17'W.), a chain of 100 islands, islets, and rocks, extend for a distance of 52 miles between Saint Vincent and Grenada.

The islands are of moderate elevations, with none exceeding 335m. There are several navigable channels between the islands.

The islands lie on a bank which has general depths of 18.3 to 45.7m. A deep channel, with a least width of 1.5 miles, lies between the N end of this bank and the S end of the bank which extends S from Saint Vincent.

Tides—Currents.—The current almost always sets W in the passage between the Grenadine Islands and Saint Vincent, but in depths of less than 128m on the banks, the E tidal current frequently prevails. When the E tidal current off the NW coast of Bequia sets against a strong trade wind, a heavy confused sea is raised in the passage, as well as off the NW extremity of Canouan Island.

At times the W tidal current, combining with the ocean current, will run through the narrow channels at a rate of about 4 knots. The E current seldom attains a rate of 2 knots, and often it is not more than 0.5 knot.

The Grenadine Islands—North Group

9.33 Bequia (13°00'N., 61°15'W.), the most important and largest of the islands in the N group, lies about 4.5 miles S of Saint Vincent. Bullet, a high rock, lies close E of the N extremity of the island. Spring Bay, small and foul, lies about 1.5 miles SW of Bullet. An area under reclamation (1993) lies about 3 miles E of West Cay.

Friendship Bay (12°59'N., 61°14'W.), a small bight on the S side of Bequia, provides shelter to small craft. A cay is connected with the main island by a reef which forms the W side of the bay. A group of islets lie up to 2.75 miles off the S side of Bequia. The area of these islets provides an open but safe anchorage. The best anchorages are noted on the chart.

Bequia—Port Elizabeth

9.34 Admiralty Bay (13°00'N., 61°15'W.), located on the W side of Bequia, is the principal anchorage of the island. The town of Port Elizabeth stands at the head of the bay. A conspicuous radio mast stands SSE of the town.

Depths—Limitations.—A concrete jetty projects 45m from the town. Its head is 7.9m wide and has a depth of 7m alongside. There are plans to extend this pier. A wooden pier, 91m S of the jetty is 33.5m long and has a depth of 5m at its head. A light is shown from the jetty.

Anchorage.—Anchorage can be taken in the inner part of the bay, in depths of 5.5 to 18.3m, protected from all except SW winds.

Only small vessels should attempt to anchor in the inner part of the bay, where the bottom is sand with patches of coral and mud.

Good anchorage can be found in the outer part of the bay, between 0.3 and 0.5 mile NNE of Belle Point, in depths from 20.1 to 29.3m. The bottom is mostly sand, coral and shell. Small craft can anchor off any of the inner bay beaches.

The recommended anchorage for yachts is near the concrete jetty, where the holding is good.

Off the S of Bequia, anchorage maybe had in the large space between the island, and the islands extending SE from it. Local knowledge is recommended.

Caution.—A dangerous wreck lies about 0.3 mile W of Port Elizabeth Jetty Light.

9.35 Baliceaux Island (12°57'N., 61°09'W.) and Battowia Island are connected by a shoal with a least depth of 3.7m.

Church Cay, bordered by a narrow channel on each side, lies on the S side of this shoal. Only small craft with local knowledge can use these channels.

Battowia Island is high and cliffy. Bullet, a tall rock, lies close off the N end of the island. Another rock, which breaks, lies about 0.15 mile NW of Bullet.

A light is shown from the island's summit. All Awash Island, 68m high, lies about 2.5 miles SSW of Battowia Island.

Baliceaux Island and Battowia Island

Pillories (12°55'N., 61°11'W.) consists of three islets, which lie about 2.5 miles SW of the extremity of Baliceaux Island, with Pillory Rocks charted about 0.5 mile NE of them. A rock awash lies about 0.5 mile SE of the E islet. Single Rock, stands about 0.2 mile S of the W islet.

9.36 Mustique (12°52'N., 61°11'W.) lies about 3 miles SSW of Baliceaux Island. A shallow and foul bay indents the N side of the island.

Double Rock, 9.8m high, lies about 0.25 mile NNE of the NW extremity of Mustique.

A conspicuous stranded wreck lies on a shoal with a least depth of 3m, 0.12 mile NNE of Double Rock. An isolated rock, with a least depth of 3.7m, lies over 91m N of Double Rock. A coral reef extends 91m SW from Double Rock.

Between the reef and the NW extremity of Mustique there is a channel, 0.15 mile wide with depths of 3 to 7m in it.

A channel between the conspicuous wreck and Single Rock has depths in it from 12.2 to 24.1m.

The channels between Mustique and the Pillories require local knowledge due to the strong and unpredictable currents in the channel.

The E side of the island is bordered by a reef which extends up to 0.25 mile offshore. Reefs fringe the W side of the island in many places. The reef off the SW point of the island extended almost 0.3 mile offshore and was reported to be still extending.

Montezuma Shoal, lies about 0.4 mile off the W side of the island. This shoal is extremely dangerous because it does not break in a smooth sea and cannot be seen in time to avoid it. A lighted beacon stands on the SW side of the shoal.

Large vessels can find anchorage, in depths of 20.1 to 27.1m, about 1 mile WSW of Montezuma Shoal, good holding ground. Grand Bay, on the W side of the island, provides anchorage, in depths of 21.9m. A pier, 36m in length, with a depth of 3m alongside, lies on the N side of the bay.

Petit Mustique (12°50'N., 61°12'W.) lies 1.25 miles S of Mustique Island. A rock, just above water, lies about 0.1 mile off the S extremity of the islet.

Savan Island, is the largest and NE of a small group of islets and rocks lying about 1.75 miles SSW of Petit Mustique.

The group are more or less fringed with reefs. Small vessels can take temporary anchorage NW of Savan Island but there is always a swell. Petite Canouan lies 4 miles WSW of Savan Island. A light is shown on Petite Canouan.

The Grenadine Islands—Middle Group

9.37 Canouan Island (12°43'N., 61°19'W.) lies about 3.75 miles SSW of Petite Canouan. The island is of volcanic origin and presents a green appearance, the high land being covered with dense scrub and cacti.

Mahault Bay forms the N side of the island and Charlestown Bay the W side of the island.

Dove Cay, 38.1m high, lies off the SSW part of the island. Anchorage can be taken W of the cay.

Charlestown Bay (12°43'N., 61°20'W.), which indents the W side of the island, provides anchorage for large vessels off the entrance with the NW extremity of the island bearing 015° and the SW extremity bearing 228°, in a depth of about 31.1m. Small vessels can anchor closer inshore, but inside the 27.4m curve the depths decrease rapidly.

Retreat Pier is a wooden structure 61m in length, with a depth of 0.9m alongside its head. A second pier 200m in length is situated 0.2 mile farther E. Lights are exhibited from both pier heads.

A prominent white-topped rock, 0.65 mile NE of Bachelor's Hall Point, stands 91m offshore and is covered with guano. It is a useful mark. Another useful mark is the obstruction lights on the peaks of Taffia Hill and Glassy Hill and on the point 0.1 mile N of Glassy Hill. The navigational aids in the bay should not be relied upon.

Mayreau Island (12°38'N., 61°23'W.) lies about 4 miles SW of the SW extremity of Canouan Island. A number of reefs and cays extend about 3.75 miles E and ESE from the island.

A lighted buoy is moored about 0.5 mile N of the island. Vessels can obtain anchorage, in depths of 11 to 12.8m, off the SW side of the island.

9.38 Catholic Island (12°40'N., 61°24'W.) lies about 1 mile NW of Mayreau Island. A light is shown on the islet.

Dry Shingle, a small sand cay, lies about 0.25 mile ESE of Catholic Islet and are connected by a shallow bank.

A lighted buoy is moored off the SE side of this bank about 0.25 mile ESE of Dry Shingle.

Between Dry Shingle and Mayreau Island there is channel, clear of dangers, with depths of 9.1m in the fairway. This channel is used by vessels of moderate draft coming from the N and bound for the anchorage off the SW side of Mayreau Island. A light is exhibited from a metal framework tower, 3m in height on the summit of Catholic Islet.

Sail Rock is located about 3.5 miles E of World's End Reef.

World's End Reef (12°37'N., 61°20'W.), which dries in places, is the outermost danger of those extending ESE from Mayreau Island. The current sets strongly toward this reef. Egg Reef lies W of the above reef and is separated from it by a narrow channel.

Horse Shoe Reef, lying about 0.25 mile NNW of Egg Reef, lies within the semicircle enclosing Tobago Cays.

Several other reefs, separated by narrow channels, lie between Horse Shoe Reef and Mayreau Island.

Anchorage.—Good anchorage can be taken, in depths of 11 to 14.6m, off the W side of N Tobago Cay. The NW approach to this anchorage is about 0.5 mile wide between the fringing reefs. A pair of range beacons bearing 129° when in line lead to the anchorage.

9.39 Union Island (12°36'N., 61°26'W.) lies about 2 miles SW of Mayreau Island. The island is a dependency of Saint Vincent. The island is of volcanic origin and is covered with coarse grass and scrub. The coast of the island is fringed with reefs which in places extends as much as 0.75 mile offshore.

The channels leading to the anchorages and settlements of this island require local knowledge.

Red Islet (12°36'N., 61°20'W.) lies off the NE coast of Union Island. The island can be identified by the red rock showing through patches of scrub. Palm Island, lies about 1 mile off the SE part of Union Island, and is surrounded by foul ground. A 0.25 mile wide channel, with depths of 7.3 to 25m, leads between Prune Island and Union Island.

A number of lighted buoys mark dangers in this area, some of which may have been removed. Caution is advised.

Frigate Islet (12°35'N., 61°26'W.) is joined to the SE extremity of Union Island by a chain of reefs. A bay on the S side of Union Island is filled with shallow flats. The village of Ashton stands at the head of this bay.

Vessels can take temporary anchorage, in depths of 8.5 to 14.6m, SW of Frigate Islet. Prune Island, about 60m high, lies about 1 mile SE of Union Island.

Foul ground extends up to 0.4 mile off this island, except the W side.

9.40 Chatham Bay (12°36'N., 61°27'W.), the large bight on the W side of Union Island, provides anchorage for large vessels, in a depth of 31.1m, sand. Care should be taken to avoid a shoal which lies 0.25 mile offshore.

Clifton Harbor (12°36'N., 61°25'W.) lies in a bay on the SE side of Union Island. It is protected on its E side by Thompson Reef. A large house stands on the S entrance point. Copper Reef, on the SW extremity of which is a ruined concrete structure, lies in the middle of the harbor.

A concrete jetty, 48.8m long, lies near the Customhouse in the NW corner of the harbor and has a depth of 4.9m at its head.

Range lights are exhibited. The front light is shown from concrete tower on the head of the concrete jetty while the rear light is shown at an elevation of 38m from a concrete beacon on a hillside NW of the harbor. In line the lights bear 327.5° and lead clear of the reefs each side of the W entrance to the harbor.

The N part of the harbor affords secure anchorage to small vessels with local knowledge in depths of 4.9 to 12.2m, sand.

The Grenadine Islands—South Group

9.41 Carriacou Island (12°29'N., 61°28'W.), the largest of the Grenadine Islands, lies 3.5 miles S of Union Island.

The E side of the island is fringed by detached reefs which extend up to 1.5 miles offshore. Watering Bay and Grand Bay, two small bights on the E side of the island, provide anchorage to small vessels with local knowledge.

Little Martinique, with Little Saint Vincent, lies about 2.25 miles E of the N part of Carriacou Island. A small pier with shallow depths stands on the NW side of Little Martinique. Two Cow Cays lie about 1 mile W and 0.75 mile NW of Little Saint Vincent Island.

Fota (12°31'N., 61°24'W.), a rock, and Little Tobago, an islet, lie off the W side of Little Martinique. Sheltered anchorage can be taken, in depths of 9.1 to 18.3m, between Little Martinique and Two Cow Cays. The shoal bank NW of Fota should be avoided.

Tides—Currents.—During May and June, the ocean current in the channels between Carriacou and Little Martinique has been found to set N and W at a rate of 0.5 to 1.5 knots. The NW tidal current combined with the ocean current attains a rate of 3 knots at times.

9.42 Kendeace Point (12°27'N., 61°26'W.), the SE extremity of the island, has a 9.1m patch about 0.75 mile E of it. A lighted radio mast stands about 1.75 miles NNW of Kendeace Point.

The coast between this point and South West Point, about 4.25 miles WSW, is indented by several small foul bays.

Saline Islet (12°26'N., 61°28'W.) lies about 1.5 miles E of South West Point. A detached reef about 1.5 miles long lies close N of this islet. The narrow channel between this reef and Saline Islet provides shelter to small craft with local knowledge.

Frigate Islet lies about 0.75 mile S of Saline Islet. Small craft can anchor off the W side of Frigate Islet about 0.3 mile NW of its SW extremity.

Large Islet (12°24'N., 61°30'W.) lies about 0.4 mile SW of Frigate Islet. An above-water rock lies 0.1 mile off the W end of Large Islet and a 5.5m patch lies almost 0.3 mile S of it. Small vessels can anchor, in a depth of 9.1m, about 0.1 mile offshore in the bay on the NW side of Large Islet.

Bonaparte Rocks (12°24'N., 61°30'W.) lie up to 1 mile SW of the S end of Large Islet. The tidal currents attain a considerable velocity in the vicinity of Bonaparte Rocks and their E side should be given a wide berth.

Tyrrel Bay (12°27'N., 61°29'W.) indents the coast on the N side of the peninsula which terminates in South West Point.

Vessels can anchor, in depths of 9.1 to 27.4m, in the N outer part of the bay.

Pilotage.—Pilotage is compulsory for vessels of more than 200 gt. Pilots may be requested in advance from Grenada Ports Authority.

The shore between Cistern Point and Rapid Point, the end of Carriacou Island, is indented by three bays. Depths of less than 11m lie up to 0.75 mile off this side of the island. Sister Rocks lie about 0.75 mile W of Cistern Point.

Foul ground extends about 0.1 mile SE from these rocks. The channel between these rocks and Cistern Point is deep and clear. It has been reported (1993) that a wreck, with less than 1m of water, lies close S of the foul ground.

9.43 Hillsborough Bay (12°29'N., 61°28'W.) is entered between Jack a Dan and Sandy Islet. A light is exhibited from Sandy Islet. A village stands at the head of the bay.

A jetty, with a depth of 2.4m alongside its head, extends from the shore abreast the village. A church and tower stand at the SW end of the village.

Anchorage.—Anchorage can be taken as charted S of Jack a Dan, in a depth of about 25.6m.

Les Tantes (12°19'N., 61°33'W.) consists of three islets and lies about 5 miles SW of Bonaparte Rocks. An above-water rock lies about 0.2 mile NE of the islet. Anchorage can be tak-

en off the W side of the largest islet. Diamond Islet lies about 1.5 miles WNW of Les Tantes.

Ronde Island (12°18'N., 61°35'W.) lies about 0.5 mile S of Diamond Islet. Reefs fringe the shores in places and extend across the bays on its N and E sides. Small vessels may obtain anchorage off the W side of the island, N of a shoal, which extends N from the S part of the W side of the island. The channel between Ronde Island and Les Tantes is deep and clear. The N current through this channel attains rate of 3 knots at times.

Isle de Caille (12°17'N., 61°35'W.) lies close S of the extremity of Ronde Island. The narrow channel between the two islands has depths of 3.7 to 9.1m. During strong winds the sea breaks in this channel. Small vessels may obtain anchorage under the lee of Isle de Caille.

The Sisters (12°18'N., 61°36'W.), two groups of islets, lie W of the W extremity of Ronda Island. Less than charted depths have been reported W and SW of The Sisters. There is passage between the two groups, and between the group and Ronde Island. London Bridge, a perforated rock, lies about 1.5 miles SSW of Isle de Caille. Some above-water rocks lie up to 0.2 mile SW of London Bridge on a bank with depths of less than 18.3m.

Caution.—A submerged volcano lies about 1.75 miles W of The Sisters. A restricted area, radius 0.8 mile, has been established around this volcano which is named Kick'em Jenny. The restricted area will be expanded to 2.7 miles at times of increased or dangerous volcanic activity. Volcanic activity is not visible or audible until the volcano is in full eruption. Such activity may occur with little or no warning.

Grenada

9.44 Grenada (12°07'N., 61°40'W.) is located with Bedford Point, its NE extremity, about 3.75 miles SSW of Isle de Caille. The island is mountainous and its coastline rugged. The S side of the island is indented by a number of bays.

David Point (12°14'N., 61°40'W.) is the N extremity of the island. The coast between this point and Sauteurs Bay, about 1.25 miles SE, is bordered by shoals which extend up to 0.2 mile offshore. A village stands on the E side of the bay. Irvins Bay, close E of Sauteurs Bay, provides anchorage, in depths of 11 to 13m, about 0.3 mile N of the E entrance point of the bay. This anchorage can be uncomfortable at times due to rolling. Fresh winds blow occasionally from the NNE but with sufficient chain out there is little to fear because the holding ground is good.

The coastline between Irvins Bay and Bedford Point is bordered by shoals which extend up to 0.5 mile offshore.

Sugarloaf Islet (Levera Islet) lies about 0.25 mile N of Bedford Point. Green Islet and Sandy Islet stand 0.5 mile ESE and 1 mile E, respectively, of Bedford Point. Anchorage can be taken W of these islets by small vessels. Bird Islet lies about 2 miles ESE of Sandy Islet.

The coast between Bedford Point and Telescope Point, a small promontory about 5.75 miles to the S, is fringed by a shoal which extends up to 0.75 mile offshore. This stretch of coast is exposed to the full force of the trade winds. During strong winds, the sea breaks in depths of less than 9.1m as it generally does along the entire E and S coasts of the island. Anthony Rock, stands about 1 mile offshore and about 2.75 miles S of Sandy Islet. Telescope Rock lies 0.5 mile E of Telescope Point.

Caution.—Reports have indicated that less water may be encountered on the banks S of Grenada. Deep-draft vessels, particularly those drawing more than 12.2m should remain clear of the 183m curve where possible.

9.45 Grenville Bay (12°07'N., 61°37'W.) and Saint Andrew Bay, separated by Marquis Islet, are foul and should not be entered without local knowledge. During strong NE winds, the sea breaks right across the entrance to Grenville Bay. Grenville lies at the head of Grenville Bay.

The town pier has a depth of 3m alongside its head. A jetty extending SE from the port, approximately 110m in length and 10m in width, has been reported (2011).

Vessels drawing more than 3m can find sheltered anchorage within the outer reefs; those drawing up to 3m can lie in smooth water within the inner reefs. Two white beacons, in range 291°, lead between the outer reefs in the approach to Grenville Bay.

Pilotage.—Pilotage is compulsory for vessels of over 150 gt.

Caution.—Caution is advised, as less water has been reported in the channels of Grenville Bay.

9.46 From Great Bacolet Point to Saint Davids Point, 5 miles SW, the coast is indented by several small bays, which are used by local craft. The intervening coast is fringed by reefs and shoals which extend up to 0.5 mile offshore.

Saint David's Harbor (12°02'N., 61°41'W.), a narrow inlet, is entered between Saint David's Point and the reef extending 0.25 mile from Middle Point, about 0.25 mile NW. Small vessels with local knowledge can enter the inlet.

Westerhall Bay (12°01'N., 61°42'W.) lies about 1.5 miles E of Saint David's Point. The bay provides good anchorage, in a depth of 7.3m, to small craft with local knowledge.

Caliviny Harbour lies at the head of the inlet between Westerhall Point and Point of Fort Jeudy, about 1 mile SW. The harbor should be approached on a NW course, passing midway between the shoals off the side of Westerhall Point and the fringing reef on the side of Point of Fort Jeudy. Small vessels can anchor, in depths of 6.4 to 8.2m, in the E side of the harbor.

Port Egmont (12°00'N., 61°43'W.) is entered between Point of Fort Jeudy and the reefs and shoals extending S from Egmont Point, about 0.75 mile NW. It consists of an inner and outer harbor, connected by narrows less than 91m wide, with a depth of 5.5m in them.

Small vessels can find secure anchorage off the W side of Adam Islet. The detached rocky head, about 137m W of Adam Islet, should be avoided.

Clarks Court Bay (12°01'N., 61°44'W.) is entered between the reefs and shoals extending S from Caliviny Islet and Hog Islet to the W of Point of Fort Jeudy. The bay provides anchorage, in depths of 10 to 14.6m, good holding ground.

Small vessels with local knowledge can obtain good anchorage off the W side of Hog Islet. The channel leading to this anchorage is narrow and should only be attempted during daylight and in good weather.

Mount Hartman Bay (12°00'N., 61°45'W.) lies about 1

mile SW of Clarks Court Bay. Safe anchorage is afforded to small vessels with local knowledge, in depths of 7.3 to 11m.

Prickly Bay (12°00'N., 61°46'W.) is entered between Prickly Point and a point about 0.5 mile NW. There is anchorage, in depths of 11 to 14.6m, S of 2.7m shoal lying about 0.75 mile N of Prickly Point.

True Blue Bay (12°00'N., 61°46'W.) and Hardy Bay, W of Prickly Bay, provide anchorage for small vessels drawing up to 4.6m.

9.47 **Point Saline** (12°00'N., 61°48'W.) lies about 1 mile W of the W entrance point of Hardy Bay and forms the SW extremity of Grenada. Seringapatam Shoal, with a least depth of 6.4m, lies about 0.3 mile SW of the point.

There is always a confused sea in this area. It is recommended that vessels pass W of Seringapatam Shoal.

Good anchorage can be taken, in depths of 9.1 to 11m, about 1.75 miles NE of Point Saline. A light for the use of aircraft is exhibited, at an elevation of 71m, from a radio mast close N of the airfield runway.

Lights are exhibited, each at an elevation of 7m, from Point Saline and from Grover Island, 1.25 miles SE.

Long Point (12°02'N., 61°47'W.), about 2 miles NE of Point Saline, is the outer extremity of a narrow projection.

A shoal, with a least depth of 0.6m, lies about 0.3 mile W of Long Point. A deep narrow passage lies between this shoal and the point, but it is advisable to pass W of the shoal.

Grand Anse (12°02'N., 61°46'W.) lies between Long Point and the entrance to Saint George's Harbour, about 1.75 miles NE. The bay provides sheltered anchorage, in depths of 16.5 to 23.8m.

Fort George Point (12°03'N., 61°45'W.), a bluff headland, is the N entrance point of Saint George's Harbour. Fort George (Fort Rupert), with a signal station, stands on the point. A black church, with a tower at its N end, stands about 0.25 mile NE of the point and a white building with a red roof stands about 0.3 mile of the point, both landmarks are conspicuous.

Saint George's Harbour is entered between Fort George Point and a point 0.25 mile SE which is fronted by a small rock on which is a statue with a prominent white base.

Saint George's (12°03'N., 61°45'W.)

World Port Index No. 11670

9.48 Saint George's is the capital of Grenada and its most important harbor. The inner part of the harbor consists of two basins. Both of these basins are entered through a common entrance. The N basin is available as an anchorage.

Tides—Currents.—Currents are generally weak and variable to the W of the breakwater; however, an unpredictable N or S set up to 2.5 knots can be experienced immediately to the W of the breakwater head.

Swell is particularly noticeable in November and is at a minimum during summer.

Depths—Limitations.—The Carenage contains the main berth, there are berths for smaller vessels on the E and W sides of the N part of The Carenage.

The N basin, or The Carenage, has depths of 9.1 to 20.1m. The S basin, or The Lagoon, has depths of 4.8 to 8.2m and is entered through a short channel that leads SE from The Carenage. There is a yacht marina on the W side of The Lagoon. For detailed berthing information see the table titled **Saint George's—Berth Information**.

Aspect.—The harbor is protected NW by the promontory on which **Fort George** (12°03'N., 61°45'W.) stands. The harbor may be identified by Fort George; by Fort Frederick, which stands at an elevation of 226m, on Richmond Hill; and by the Islander Hotel ruins standing on the summit above the SE entrance.

Two pairs of range lights are exhibited at Saint George's Harbour.

Melville Street Cruise Terminal

The outer pair, for the approach from seaward, stands on the shores of Martin's Bay, on the S side of the entrance. The front light is situated about 0.5 mile S of Fort George Light. The rear light stands 91m SE of the front light. In line, bearing 132°, they lead between the dangers E of Annas Shoal and those extending from Fort George Point.

The inner pair is situated on the slopes at the head of the harbor. The front light stands 0.5 mile E of Fort George Light. The rear light stands 0.25 mile ENE of the front light. In line, bearing 068.5,° they lead into the harbor.

Three Fathom Banks, with a least depth of 4.9m, lies about 0.5 mile WSW of Fort George Point; on the same bank lies Annas Shoal, with a least depth of 4.2m.

Saint George's—Berth Information

Berth	Length	Depth	Remarks
Melville Street Cruise Ship Terminal			
Cruise Pier	375m	16.0-19.0m	Dolphins and catwalk make up 100m of the berthing length

Saint George's—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Inner Harbor (Carenage)			
Inner Harbor	335m	8.4-9.5m	General service area, offering berthing for cruise, ro-ro and cargo vessels
Other Berths			
Schooner Berth	85m	4.3-5.8m	Schooners and small vessels
Tanker Berthing			
Queens Park Tanker Terminal	—	7.9m	Consists of two mooring buoys off the mouth of the St. Johns River

Pilotage.—Pilotage is compulsory for vessels of more than 200 gt and is available 24 hours. Pilotage should be requested 24 hours prior to arrival and 3 hours prior to departure. The pilot boards, as follows:

1. Vessels proceeding alongside—0.5 mile N of Annas Shoal.
2. Vessels anchoring—1 mile W of the point at Fort George Point.

Contact Information.—Port control (call sign: J3YA) and the pilots (call sign: J3YB) may be contacted on VHF channel 16.

Anchorage.—The banks of Saint George's Harbour afford good anchorage. The anchorage is situated at position 12°02'N, 61°46'W.

In order to keep the outer approaches clear, vessels should not anchor on or near the 132° range line within 0.3 mile of the outer lighted buoy.

Small vessels can anchor closer inshore about 0.2 mile WNW of the Fort George flagstaff. Shoaling has been reported in the vicinity of this anchorage.

There is good anchorage, in 14.6 to 18.3m, 0.5 mile NW of Fort George.

There is good anchorage for vessels of moderate draft, in a depth of 20.1m in Grand Anse, with the Fort George flagstaff bearing about 030°, distant about 1 mile.

Vessels of moderate length can anchor, in 20.1m, abreast Fort George in The Carenage.

9.49 Grand Mal Bay (12°04'N., 61°45'W.) lies about 1.5 miles N of Fort George Point.

The Grand Mal Tanker Terminal is located 1.5 miles N of the town. The berth consists of 2 mooring buoys connected to a shore side terminal by a submerged fuel pipeline that extends from the shore at the head of the bay and is marked by buoys at its outer end. Depths are 9.1m at the berth and will accommodate tankers with drafts as deep as 8.8m Caution is advised, as information on this terminal is not reliable at present. Shoaling has also been reported in the vicinity.

Good anchorage can be taken on either side of a deep area in the central part of the bay.

Halifax Harbor (12°07'N., 61°45'W.), an open roadstead, lies about 2.25 miles N of Grand Mal Bay. Anchorage can be taken as charted, in depths of 9.1 to 12.8m.

Caution.—Power transmission lines span both arms of the bay from the S entrance point NE to the dividing headland and then NNW to the shore. The vertical clearance of the S power line was reported (2005) to be about 18m; the vertical clearance of the N power line might be somewhat lower.

Gouyave Bay lies about 3.5 miles NNE of Halifax Harbour. A village stands at the head of the bay. Anchorage can be taken, in a depth of 12.8m about 0.2 mile SW of the village.

Saint Marks Bay (12°12'N., 61°42'W.) lies about 2.25 miles NE of the village on Gouyave Bay. Vessels may anchor, in depths of 18.3 to 20.1m, about 0.2 mile offshore. The bay is exposed to N winds.

Crayfish Bay and Du Quesne Bay, with Du Quesne Point between them, are entered about 1.25 miles and 2 miles NE of Saint Marks Bay.

Both bays provide anchorage to small vessels. Vessels anchor, in depths 11 to 12.8m, about 0.3 mile offshore on the shore bank between Du Quesne Point and David Point, the N extremity of Grenada.

Barbados

9.50 Barbados (13°10'N., 59˝32'W.), the easternmost of the Windward Islands, stands about 80 miles ESE of the S extremity of Saint Lucia. A deep valley traverses the S part of the island E to W dividing it into two parts.

All of the dangers which lie in the vicinity of the island are contained within or adjacent to the 20m curve, which lies between 0.25 mile and 1.5 miles offshore. There are no off-lying dangers.

A conspicuous lighted radio mast stands on Mount Misery. A TV mast, also lighted, stands about 1 mile ESE of Mount Misery.

The ocean current in the vicinity of the island generally sets to the W, but may vary between NW and N, as its velocity and direction is influenced by the wind.

North Point (13°20'N., 59°37'W.), the N extremity of the island, is a cliffy headland backed by level ground which extends about 1 mile S and then begins to rise again.

The coast between North Point and Pico Teneriffe, about 3.5 miles SE, consists of cliffs which are bordered by a shoal bank extending up to 0.25 mile offshore.

From Pico Teneriffe the coast extends about 12.5 miles SE to Kitridge Point, the E extremity of the island. A coral reef, on which the sea breaks, extends from 0.25 to 0.5 mile offshore.

The coast between Kitridge Point and the S extremity of the island, about 9 miles to the SW, is fringed by coral reef broken

Kitridge Point Light

by several passes. A boat passage lies between this reef and the shore reef.

9.51 **Cobblers Reef** (13°07'N., 59°26'W.), which breaks even in the finest weather, is the NE part of this barrier reef and has two passages through it. In the vicinity of Kitridge Point, the outer edge of the reef lies 0.5 mile offshore, extending up to 1 mile offshore off Palmetto Bay, 0.7 mile farther S. The prevailing current sets toward Cobblers Reef.

Conset Bay, about 9 miles SE of **Pico Tenerriffe** (13°17'N., 59°35'W.), a prominent hill, affords shelters to boats. It should not be attempted without local knowledge.

East Point Light

A conspicuous dish aerial stands approximately 2 miles WNW of **Conset Point** (13°11'N., 59°28'W.).

The E end of the island is about 30.5m high and continues flat for about 2 miles inland, when it begins to rise.

East Point Light is exhibited, at an elevation of 65m, from a round stone tower, 30m in height, situated on Ragged Point, about 1.25 miles NW of Kitridge Point.

The Shallows (12°59'N., 59°28'W.), a bank about 6 miles in extent with a least depth of 60.4m, lies about 5 miles SE of the S extremity of Barbados. Easterly sets with a heavy W swell can set up turbulent seas over this bank.

9.52 **South Point** (13°03'N., 59°32'W.), the S extremity of the island, consists of bold rocky cliffs. The barrier reef terminates about 0.75 mile SW of the point. A light is shown on the point. Storm signals are shown from the light structure.

South Point Light

A lighted aero tower stands about 3 miles NE of South Point Light. The light on the tower is shown when aircraft are about to land.

Oistins Bay (13°03'N., 59°33'W.), which shows a light, lies close NW of South Point. The bay affords anchorage to small vessels, in depths of 9.1 to 18.3m. The reefs off South Point should be given a wide berth when nearing this anchorage. Cables and aids to navigation have been added in Oistins Bay and can best be seen on the chart.

Trader Bank (13°03'N., 59°39'W.), about 0.75 mile in extent, and with a least depth of 36.6m, lies with its shallowest part about 2.5 miles SW of Needhams Point. Two large hotels, one with prominent arches on its top, stand on Needhams

Point.

A dangerous wreck lies about 0.5 mile SE of Needhams Point.

Bridgetown (13°05'N., 59°37'W.)

World Port Index No. 11690

9.53 The port is situated on reclaimed land on the NW side of the town, at the N entrance point of Carlisle Bay.

The port has modern alongside berthing facilities for all classes of vessels. Vessels are advised to enter or leave the harbor during early morning or the evening to avoid the fresh E wind which usually blows from 1 hour before sunrise to 1 hour before sunset.

Tides—Currents.—Currents are generally weak and variable to the W of the breakwater; however, an unpredictable N or S set of up to 2.5 knots can be experienced immediately to the W of the breakwater head.

Swell is particularly noticeable in November and is at a minimum during summer.

Depths—Limitations.—Bridgetown Deep Water Harbor has several commercial berths. A shallow basin E of the harbor basin was dredged to a depth of 6.1m and offers berthing to inter-island vessels.

The Carenage is the old harbor works within the city of Bridgetown. A coral bank and several shoal heads lie within the N portion of Carlisle Bay, which may be avoided by keeping the Holiday Inn bearing less than 133°. Local knowledge is highly recommended. The basin is available for vessels with a draft of less than 3m.

Needham's Point, located about 0.75 mile SSE of Deep Water Harbor, is an offshore multi-point mooring. For berthing information see the table titled **Bridgetown (Deep Water Harbor)—Berth Information**.

Bridgetown (Deep Water Harbor)—Berth Information

Berth	Length	Depth	Remarks
Breakwater Berthing			
Outer Breakwater Berth	522m	11.5m	Cruise vessels.
Inner Breakwater Berth	307m	11.5m	Bulk, sugar, and molasses.
Port of Bridgetown			
No. 1	152m	9.8m	Naval vessels.
No. 2	183m	11.0m	Containers. Continous length of 615m.
No. 3	183m	11.0	Containers. Continous length of 615m.
No. 4	215m	11.0m	Containers. Continous length of 615m.
NO. 5	65m	11.0m	Containers. Continous length of 615m.
Other Berths			
Inner Harbor	156m	6.0m	Inter island vessels.
Bulk Handling Wharf	183m	13.0m	Grain. Consists of steel piling and four breatsing dolphins at N end of the port.
Arawak Cement Works	121m	9.0m	Cement. A T-shaped dock with the head having a length of 145m with an alongside depth of 9.1m.
Sugar	307m	9.8m	Sugar and molasses.
Tanker Berths			
Esso Oil	244m	11.6m	Petroleum products. A T-shaped jetty that extends 122m from shore close SE from the breakwater. The head of the jetty 85.0m in length and has an alongside depth of 13.2m.
Needhams Point Tanker Terminal	193m	11.6m	Petroleum products. The berth consists of three mooring buoys connected by a submarine pipeline to shore.
Oistins Bay Tanker Terminal	172m	11.6m	Petroleum products. The berth consists of three mooring buoys connected by a submarine pipeline to shore.
Black Rock Tanker Terminal	122m	7.5m	Petroleum products. The berth consists of three mooring buoys connected by a submarine pipeline to shore.
Spring Garden Tanker Terminal	103m	4.9m	Liquified gas. The terminal, located 2 miles NW of Spring Garden Point, is connected to shore by a floating pipeline marked by floats.

Courtesy of Mary Sadecki

Bridgetown Barbados Coast Guard Station

Aspect.—The three sugar-loading towers on the SE part of the breakwater and the bulk sugar storehouse SE of the harbor are conspicuous. Other useful navigational aids are the two most conspicuous silver aluminum chimneys located at the power station in position 13°05'N, 59°37'W. Range lights on yellow boards, in line bearing 088°, can be seen when entering or leaving Bridgetown Harbor, and are best seen on the chart.

It has been reported (2009) that an L-shaped breakwater extends from the grain terminal and flour mill peninsula. The breakwater extends about 46m WSW, then another 46m SE and encloses the Barbadian Coast Guard facilities.

A number of other good landmarks can best be seen on the chart.

Kettle Bottom Shoal (13°07'N., 59°38'W.), which dries in places, lies at the N end of Spring Garden Anchorage. Pelican Shoals, which dry in patches, lie on the coastal bank S of Spring Garden Anchorage. Both shoals can be marked by significant breakers and dry during July and August.

Long Shoal, a detached bank with a least depth of 6.9m, lies 0.75 mile WSW of Spring Garden.

Pilotage.—Pilotage is compulsory and is available 24 hours. Ships may enter during daylight only but may depart at night. The pilot boards, on the port side of the vessel, 0.8 mile WNW of Breakwater Head Light.

The Carenage

Vessels should send their ETA and request for pilotage as early in the voyage as possible. Requests for pilotage on Saturday should be presented before 1100 on Thursday, while Sunday pilotage should be requested before 1400 on Friday.

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

1. Call sign: 8PB
2. VHF: VHF channels 6, 12, and 16

Courtesy of Mary Sadecki

Bridgetown Grain Terminal and Flour Mill

Conspicuous Sugar-loading Towers

Bridgetown Deep Water Harbor

3. Telephone: 1-246-430-4782

Tugs can be contacted on VHF channels 6 and 16.

Regulations.—Arriving yachts contact the signal station, and request permission to enter the commercial harbor, to clear customs.

Signals.—The port signal station is situated on the breakwater fronting the harbor.

The following signals are displayed from a flagstaff on the signal station on the elbow of the breakwater:

1. Port open and clear for inbound traffic:
   a. By day—International Code Flag "E" over a black cone, point up.
   b. By night—Three white lights, disposed vertically.
2. Port closed and clear for outbound traffic:
   a. By day—International Code Flag "D" over a black ball.
   b. By night—Three red lights, disposed vertically.

Anchorage.—The best berth for vessel of moderate size is in a depth of about 29.3m, with the Savannah Club clock tower bearing 123°. Anchorage can also be taken with the Hilton Hotel bearing about 129°, distant 1 mile.

The explosives and quarantine anchorage may best be seen on the chart.

Anchorage is prohibited in the near approach to Bridgetown Harbour.

Anchorage is prohibited at Sharks Bank, about 1.25 miles NE of Needham's Point, Long Shoal. Sharks Bank and Long Shoal are IMO-approved areas where anchorage is prohibited in order to preserve coral reefs.

Caution.—An anchorage area, with a submerged pipeline in its vicinity. is located NW of Bridgetown, about 0.5 mile E of the town of Spring Garden and is best seen on the chart. Vessels should anchor in the center of the anchorage area and maintain a safe distance from the Spring Garden pipeline. Long Shoal is an anchoring prohibited area which has a 250m underwater pipe that extends from the SW corner.

9.54 The coast between Bridgetown and Harrison Point, about 12.5 miles N, is slightly indented by sandy beaches, which are separated by reef fringed points. A dangerous reef lying up to 0.5 mile offshore extends about 1.5 miles S from Harrison Point.

The coast between Harrison Point and North Point consists of low rugged cliffs. Harrison Reefs, which extend up to 0.4 mile offshore, border this section of the coast.

A cement works, dominated by a prominent tower, stands near the coast 1.5 miles S of Harrison Point Light. The tower, which is floodlit at night, is readily identifiable by vessels approaching Barbados from N or W. Arawak Jetty, the berth situated off the cement works, was previously described with Bridgetown in paragraph 9.53.

Holetown (13°11'N., 59°38'W.), a small village about 5.5 miles NNW of Bridgetown, provides anchorage in the roadstead. A wreck, with a depth of 5.5m lies about 0.25 mile offshore, 2.5 miles S of Holetown.

Speightstown (13°15'N., 59°39'W.) (World Port Index No. 11680) lies about 3.75 miles N of Holetown.

Anchorage can be taken in the roadstead, in depths of 14.6 to 36.6m.

Spanish

SPANISH — English

A

abrigo — shelter
aduana — customhouse
aguas muertas — neap tides
aguas vivas — spring tides
aguja — needle
albufera — tidal lake
aldea — small village, a hamlet
alfaque — sandbank, bar
almadraba — tunny fishery
alto — height
amarillo — yellow
arena — sand
arrabal — suburb
arrecife — reef
arroyo — rivulet
astillero — dockyard
atalaya — an elevated place

B

babor — port
bahia — bay
bajamar — low water
bajo — shoal
banco — bank
barra — bar at the mouth of a river or harbor
barrio — suburb, district of a town
blanco — white
bote salvavidas — lifeboat
boya — buoy
brujula — compass
bruma — fog, haze

C

cabezo — summit of a hill
cabo — cape or headland
cala — creek or small bay
caleta — cove
camino de hierro — railway
campanario — steeple, belfry
canal — channel or strait
capilla — chapel
carabineros — a post of military coast guards
carrazon — dark, cloudy weather
carta de sanidad — bill of health
casa — house
cascajo — gravel
caserio — series of houses
caseta — small house
castillo — castle
cerro — hill
chica — small
concha — a shell
contrastes — winds blowing from opposite directions

SPANISH — English

cubierta — deck
cueva — cave

D

darsena — dock or basin
dique — dock, dike
dique seco — drydock

E

ensenada — bay or creek
ermita — hermitage
escollo — rock
espigon — a kind of wharf or pier
estero — small creek
estrecho — strait
estribor — starboard

F

fanal — lighthouse
fango — mud
faro — lighthouse
ferrocarril — railway
fondeadero — anchorage
fraile — friar
freo — strait
fuente — fountain; spring of water
fuerte — fort

G

garita — lookout house
golfo — gulf
grande — great
grao — strand, shore
gris — gray

I

iglesia — church
isla — island
islote — islet

L

lago — lake
laguna — lagoon
laja — flat rock
limo — mud
lugar — village or small town
luz — light

M

malecon — dike
marea — tide
marea creciente — flood tide
marea menguante — ebb tide
meridional — southern
mesa — tableland

SPANISH	English
montana	mountain
monte	mount
muelle	mole or jetty
N	
negro	black
niebla	fog
norte	north
O	
ola	wave
oriente	east
P	
pardo	gray
pena	rock or large stone
penon	rock or rocky mountain
pequena	small
picacho	summit
pico	peak
piedra	rock
piloto	pilot
piloto practico	a harbor pilot
placer	sandbank, cay
playa	beach
pleamar	high water
poniente	west
promontorio	headland, promontory
pueblo	town, a village
puente	bridge
puerto	port
punta	point
Q	
quinta	country house
R	
reclada	making the land
restinga	reef
ribera	the bank of a river
rio	river
roca	rock
S	
saco	bay
sanidad	health
seno	gulf or bay
septentrional	northern
sierra	mountain ridge
sud, sur	south
T	
temporal	storm
terral	land wind
tiempo	weather
torre	tower
V	
variacion	variation
vela	sail
vendaval	strong sea wind
verde	green
viejo	old
viento	wind
vigia	a lookout; doubtful shoals
villa	town
virazon	sea breeze

Dutch

DUTCH	English
A	
aan	at, near, on
B	
baak	beacon
berg	mountain, hill
binnen	inner
blauwe	blue
bocht	bay, bend, light
bol	ball
boom	tree
bosch	forest
boschje	small wood, brush
breed	broad
brug	bridge
buiten	outer
bult	hump
D	
dam	dam, breakwater
de, den	the
diep	deep
dijk	dike
dorp	village
draaikalk	eddy
drempel	bar
dric	three
drichoek	triangle
droogte	shoal
duin	dune, sandhill
dwars	across, athwart
E	
eiland	island
F	
friesche	frisian
G	
gat	channel
geul	narrow channel
groei	green
gronden	grounds
groot	great
H	
haven	harbor
helft	half
het	the
heuvel	hill
hoek	cape, point
hoofd	head
hoog	high
hout	wood, timber

DUTCH	English
K	
kaap	cape, headland
kake	quay
kegel	cone
kil	channel
klein	small
klip	rock
kop	head
kreek	creek
kromme	crooked
kust	coast
L	
laag, lage	low
lang	long
licht	light
loods	pilot
loodswezen	pilotage
M	
meer	inland sea
middel, midden	middle
modder	mud
molen	mill
N	
nauw	narrows
nieuw	new
noord	north
noorder	northern
O	
oost	east
oud	old
P	
peilschaal	tide gage
plaat	shoal
plaatje	small shoal
plat	flat
polder	reclaimed land
punt	point
R	
rak	channel
rechthoekig	rectangular
reddingboot	lifeboat
rede	roadstead
rode, rood	red
rots	rocks
rug	ridge
ruitvormig	diamond-shaped

DUTCH	English
S	
schaar	channel
scherm	screen
schor	shoal
schutsluis	lock gate
seinen	signals
sluis	lock
smal	narrow
spits, spitse	pointed
spoorweg	railway
staart	tail (of a bank)
stad	town
steen	stone
steiger	jetty, pier
strand	beach, shore
stroom	current, stream
T	
toegang	access
tramweg	tramway
U	
uit	out
V	
vaart	canal
vaarwater	fairway
valsch	false
van	of
veerboot	ferry
verklikker	warning light
vlakte	flat below surface
vliegtuigen	aircraft
W	
wad	drying coastal bank
wal	banks, wall
watergetijden	tidal current
waterweg	waterway
weg	way
werk	work
wester	western
wit, witte	white
wrak	wreck
Z	
zand	sand
zee	sea
zeegat	estuary
zuid	south
zuider	southern
zwart	black

French

FRENCH English

A

abri, abrite ..... shelter, sheltered
aiguille ..... needle
aimante ..... magnetic
amer ..... landmark, beacon
amont ..... upstream, landmark
anse ..... bay, creek
appontement ..... wharf, pier, quay
argile ..... clay
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 mer ..... low water
basse ..... shoal
bassin aflot ..... wet basin or dock
bassin ..... basin, dock
bassin d'echouage ..... tidal basin where vessels ground
bateau de sauvetag ..... lifeboat
blanc ..... white
bleu, bleue ..... blue
bois ..... wood
bouche ..... mouth of a river
bouee a sifflet ..... whistle buoy
bouee acloche ..... bell buoy
bouee ..... buoy
bouee lumineuse ..... lighted buoy
boussole ..... compass
brisant, brisants ..... shoals, breakers
brise-lames ..... breakwater
brouillard ..... fog, mist
brume ..... fog

C

caboteur ..... coaster
cale de radoub ..... marine railway
cap ..... cape, headland
champ-de-tir ..... firing range
chapelle ..... chapel
charbon ..... coal
chaussee ..... bank, causeway
chemin de fer ..... railroad
cheminee ..... chimney
chenal ..... channel
clocher ..... steeple
coffre ..... mooring buoy

FRENCH English

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, about 183m
entree ..... entrance, mouth of a river
epave ..... wreck
epi ..... small jetty, groin
escarpe..... bluff
etale ..... (of tide) slack, (of wind) settled
etang ..... lake
etiage ..... low-water mark of a river

F

falaise ..... cliff
fanal ..... harbor lighthouse
feu ..... light
feu permanent .... a light constantly burning and unwatched
fin ..... fine
fleche ..... spire
fleuve ..... river, stream
flot ..... flood
foc ..... jib (sail)
fond ..... bottom
forme de radoub ..... drydock
fosse ..... ditch, a deep

G

galets ..... shingle
gaunche ..... left (side)
golfe ..... gulf
goulet ..... narrow entrance
gravier ..... gravel
greve ..... sandy beach
gris ..... gray

FRENCH	English
gros	coarse
guet	watch-house
H	
haut-fond	a shoal
haute mer	high water
houle	swell
I	
ile	island, isle
ilot	islet
J	
jaune	yellow
jetee	jetty
jusant	ebb
L	
lac	lake
M	
marais	swamp, marsh
maree	tide
maree descendante	falling tide
maree montante	rising tide
massif	main group of mountains
mat	mast
mole	mole, pier
mortes eaux	neap tides
mouillage	anchorage
musoir	pierhead
N	
niveau	level
noeud	knot
noir, noire	black
nouveau, nouvel	new
O	
occidental	western
onde	wave
oriental	eastern
ouest	west
P	
passe	pass, fairway, channel
pertuis	opening or strait
petit	small
phare	lighthouse
pic	peak
pierre	stone
pignon	gable
pin	pine or fir tree
plage	shore, beach
plateau	tableland, or flat below water
pleine mer	high water
pointe	point
pont	bridge, deck
presq'ile	peninsula
Q	
quai	quay, wharf
R	
rade	road, roadstead
rafale	squall
raz (bas breton)	tidal race or violent current
recif	reef
roche	rock
rocher	rock
rouge	red
ruisseau	rivulet
S	
sable	sand
salines	salt-water lagoons, salt works
seche	dry shelf, flat
seuil	sill (as of a dock)
sud	south
T	
temps	time, weather
terre-plein	leveled ground, platform
tour	tower
tourelle	small tower, turret
tribord	starboard
U	
usine	factory
V	
vase	mud
vent	wind
vert	green
vieil, vieille	old, ancient
ville	town
vive-eau	spring tide

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.

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