

PUB. 160

**SAILING DIRECTIONS
(PLANNING GUIDE)**

★
**SOUTH ATLANTIC OCEAN
AND INDIAN OCEAN**



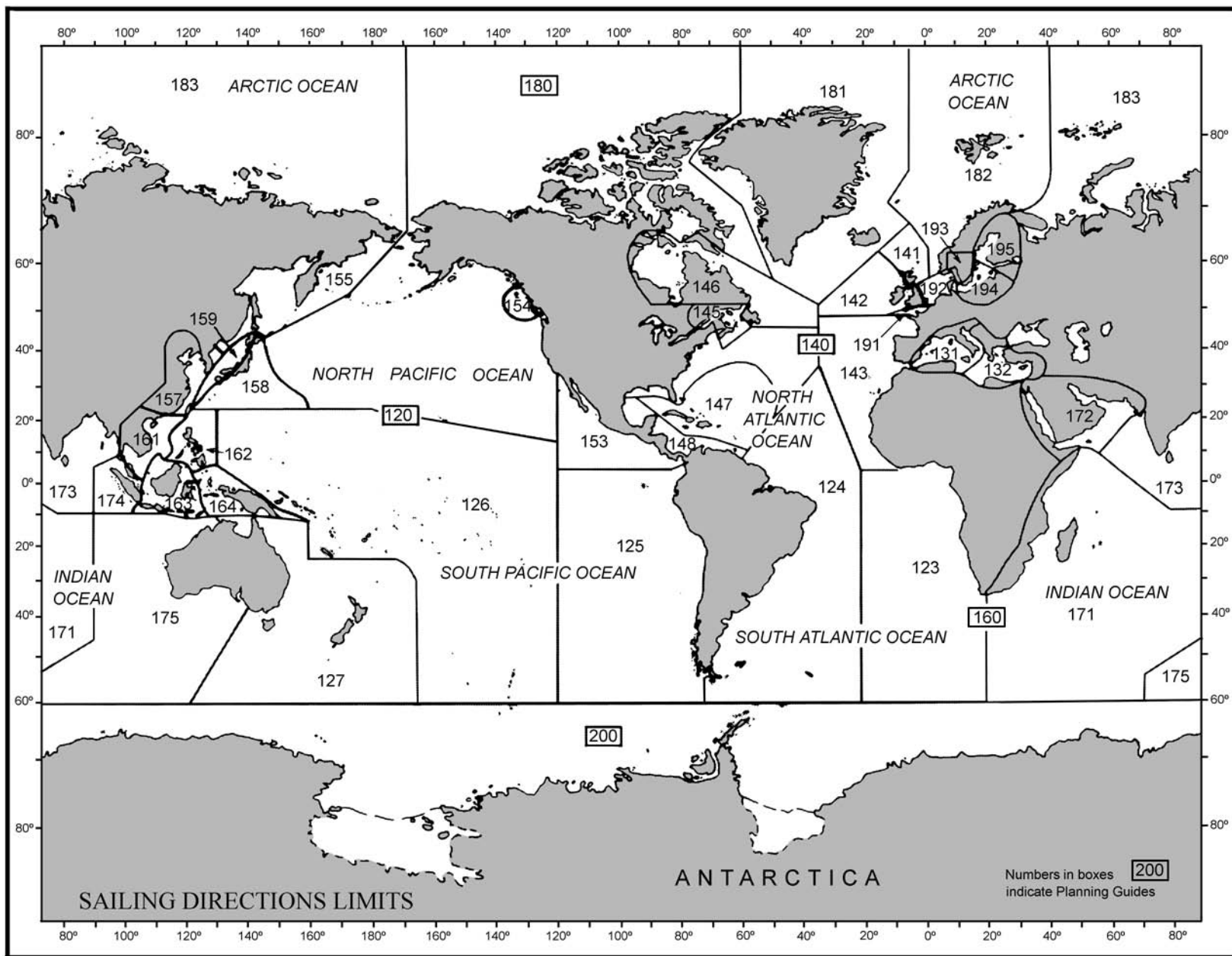
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FOURTH EDITION



Pub. 160, Sailing Directions (Planning Guide) South Atlantic Ocean and Indian Ocean, Fourth Edition, 2006, is issued for use in conjunction with the following Sailing Directions (Enroute) Publications:

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This publication has been corrected to 4 March 2006, including Notice to Mariners No. 9 of 2006.

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 (Planning Guide) are intended to assist mariners in planning ocean passages and to eliminate duplication by consolidating useful information about all the countries adjacent to a particular ocean basin in one volume.

Planning Guide publications are compiled and structured in the alphabetical order of countries contained within the region covered by each publication.

Bearings.—Bearings are true, and are expressed in degrees from 000° (north) to 360°, measured clockwise. General bearings are expressed by the initial letters of the 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.

Corrective Information.—Corrective information and other comments about this publication can be forwarded to NGA, as follows:

1. Mailing address—
Maritime Division
ST D 44
National Geospatial-Intelligence Agency
4600 Sangamore Road
Bethesda MD 20816-5003
2. E-mail address—
sdpubs@nga.mil

New editions of Sailing Directions are corrected through the date of publication shown above. Important information to amend material in the publication is available as a Publication Digital Update (PDU) from the NGA Maritime Division website.

NGA Maritime Division Website
<http://www.nga.mil/portal/site/maritime>

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 meridional 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.

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.

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 these web sites and expressly disclaims any liability for errors and omissions in the contents of these web sites.

International Ship and Port Facility Security (ISPS) Code.—The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States. Information on the ISPS Code can be found at the International Maritime Organization web site:

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

Lights 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.

National Ocean Claims.—Information on national ocean claims and maritime boundary disputes, which have been compiled from the best available sources, is provided solely in the interest of the navigational safety of shipping and in no way constitutes legal recognition by the United States. These non-recognized claims and requirements may include, but are not limited to:

1. A requirement by a state for advance permission or notification for innocent passage of warships in the territorial sea.
2. Straight baseline, internal waters, or historic waters claims.
3. The establishment of a security zone, where a state claims to control activity beyond its territorial sea for security reasons unrelated to that state's police powers in its territory, including its territorial sea.

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

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

Special Warnings.—Special Warnings 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 website.

Time Zone.—The Time Zone description(s), as well as information concerning the use of Daylight Savings Time, are included. The World Time Zone Chart is available on the Internet at the website given below.

World Time Zone Chart

[http://www.odci.gov/cia/publications/factbook/
reference_maps/pdf/time_zones.pdf](http://www.odci.gov/cia/publications/factbook/reference_maps/pdf/time_zones.pdf)

Winds.—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.

Argentina Sailing Directions.

Brazil Sailing Directions.

South Africa Sailing Directions.

Fairplay Ports and Terminals

The Statesman's Yearbook

The World Factbook

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.

Internet Web sites, as follows:

1. Department of State/U.S. Embassies.

<http://usembassy.state.gov>

2. IMB Piracy Reporting Center Home Page.

http://www.iccwbo.org/ccs/menu_imb_piracy.asp

3. World Factbook.

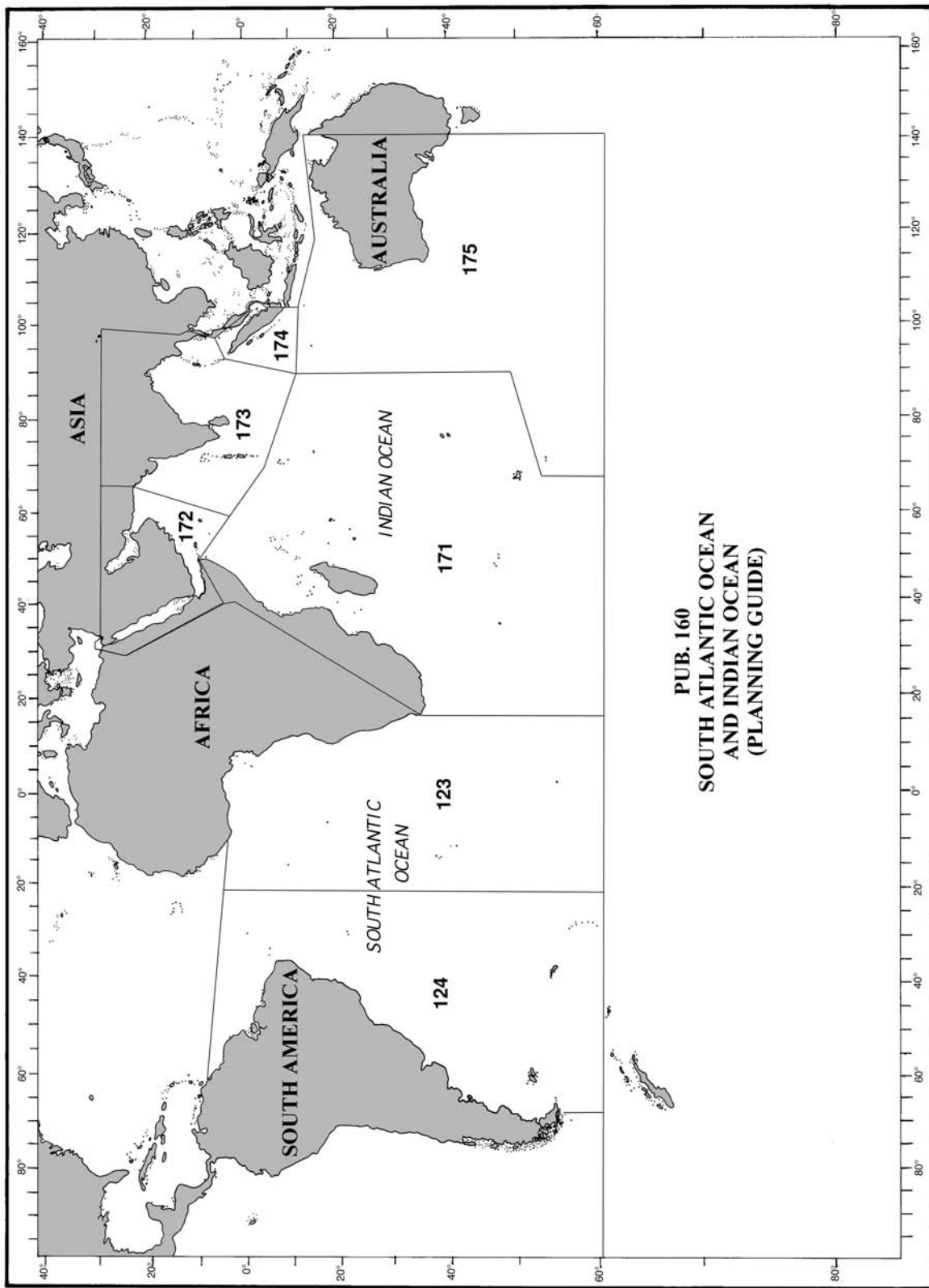
<http://www.odci.gov/cia/publications/factbook>

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Conversion Tables

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)
grt	gross registered 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		

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	HAT	highest astronomical tide
HWS	high water springs	LAT	lowest astronomical tide
LWN	low water neaps		

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	SPM	Single Point Mooring
NAVSAT	Navigation Satellite	TSS	Traffic Separation Scheme
ODAS	Ocean Data Acquisition System	VTC	Vessel Traffic Center
SBM	Single Buoy Mooring	VTS	Vessel Traffic Service

Miscellaneous

COLREGS	Collision Regulations		
IALA	International Association of Lighthouse Authorities	No./Nos.	Number/Numbers
		PA	Position approximate
IHO	International Hydrographic Office	PD	Position doubtful
IMO	International Maritime Organization	Pub.	Publication
loa	length overall	St./Ste.	Saint/Sainte

The Prudent Mariner

Warning on the Use of Floating Aids to Navigation in General to Fix a Navigation Position

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestrial, and electronic means, such as the Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker, which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights. For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

Use of Foreign Charts

In the interest of safe navigation, caution should be exercised in the use of foreign charts not maintained through U.S. Notice to Mariners.

Foreign produced charts are occasionally mentioned in NIMA Sailing Directions when such charts may be of a better scale than U.S. produced charts. Mariners are advised that if or when such foreign charts are used for navigation it is their responsibility to maintain those charts from the Notice to Mariners of the foreign country producing the charts.

The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

Chart Notes Regarding Different Datums

Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area, which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features. Notes on charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area, which is based upon a different datum, will differ from those of the first chart. The difference may be navigationally significant. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NIMA publications.

Positions obtained from satellite navigation systems, such as from GPS, are normally referred to the World Geodetic System 1984 (WGS-84) Datum. The differences between GPS satellite-derived positions and positions on some foreign charts cannot be determined: mariners are warned that these differences MAY BE SIGNIFICANT TO NAVIGATION and are therefore advised to use alternative sources of positional information, particularly when closing the shore or navigating in the vicinity of dangers.

**General****Buoyage System****Cautions****Currency****Government****Holidays****Industries****Languages****Navigational Information****Search and Rescue****Time Zone****U.S. Embassy**

1
1
1
1
1
2
2
2
2
2
2
2

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

It is reported (1994) that some obsolescent buoyage marks (Uniform Lateral System) may still be encountered.

Cautions**Piracy**

Mariners are advised to be alert for pirates in the waters off the coast of Angola.

Currency

The official unit of currency is the readjusted kwanza, consisting of 100 lwei.

Government

Angola is a republic. The country is divided into 18 provinces.

Angola is governed by an executive President, elected for renewable 5-year terms, who appoints a Council of Ministers. The unicameral National Assembly consists of 220 members elected to 4-year terms by proportional representation.

The legal system is based on Portuguese civil law system and customary law; it has been modified to accommodate political pluralism and increased the use of free markets.

The capital is Luanda.

General

Angola is located in the S part of Africa and faces the South Atlantic Ocean. It is bounded on the N and NE by the Democratic Republic of Congo, formerly Zaire; on the SE by Zambia; and on the S by Namibia.

The coast, over 800 miles long, includes the province of Cabinda, a small separated enclave. About 65 per cent of the country is formed by a plateau with elevations of 1,050 to 1,350m. The watershed of many rivers runs through the central part of this inland plateau. The coastal plain is separated from the plateau by a zone that varies in width from about 100 miles in the N part to about 15 miles in the central and S parts.

The climate is mostly tropical, being semiarid in the S and coastal parts. Temperatures are constant throughout the year and most rain falls during March and April. The N part has a dry season from May to October and a rainy season from November to April.



Flag of Angola

Holidays

The following holidays are observed:

January 1	New Year's Day
February 4	Start of Armed Struggle Day
March 8	Women's Day
March 27	Victory Day *
April 4	Peace Day
April 14	Youth Day *
Good Friday	Variable
May 1	Workers Day
June 1	Children's Day
August 1	Armed Forces Day *
September 17	National Heroes' Day
November 2	Memorial Day
November 11	Independence Day
December 1	Pioneers' Day *
December 10	Date of Foundation of MPLA (Popular Movement for the Liberation of Angola)
December 24	Christmas Eve (starting at 1200)
December 25	Christmas Day (also known as Family Day)

* Unofficial holiday, but widely celebrated.

Industries

The major industries include petroleum production, mining (iron ore, diamonds, gold, phosphates, feldspar, bauxite, and

uranium), fish processing, food processing, brewing, tobacco products, textiles, and basic construction materials.

The principal crops are bananas, sugarcane, coffee, sisal, corn, cotton, manioc, tobacco, vegetables, plantains, livestock, timber, and fish.

Languages

Portuguese is the official language. Bantu and other African tribal languages also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Angola are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines.

Search and Rescue

Maritime Rescue Coordination Center (MRCC) Luanda maintains a continuous listening watch on 2182 kHz, 4125 kHz, and VHF channel 16 for distress traffic.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 32 Rua Houari Boumedienne, Miramar, Luanda.

The mailing addresses are, as follows:

1. Angola address—
Caixa Postal 6484
Luanda
2. U. S. address—
2550 Luanda Place
Washington DC 20521-2550

U. S. Embassy Angola Home Page
<http://luanda.usembassy.gov>



General	3	Search and Rescue	5
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Government	4		
Holidays	4	General	
Industries	4		
Languages	5		
Navigational Information	5	Argentina, located on the E side of the S part of South America, is bounded on the N by Bolivia; on the NE by Paraguay; on the E by Brazil, Uruguay, and the Atlantic Ocean; and on the W by Chile. The country has a coast of about 2,180 miles, including the shore of the Rio de la Plata.	
Pilotage	5		
Pollution	5		
Regulations	5		

The Andes Mountains form the greater part of the W border region. The N half of the country is composed of the rich plains of the Pampas. In the far N, these plains are heavily wooded and are known as the Gran Chaco. The Pampas, in the central region, is treeless and fertile. The S region is occupied by a series of step-like plateaus. This region, known as the Patagonia, is bleak, arid, and rises to heights of over 1,500m.

The shore of the Rio de la Plata is low and featureless, while the sea coast consists of long stretches of low cliffs with occasional areas of low sand.

The climate is very warm over the plains where the rainfall occurs at all seasons, but diminishes towards the W. In the N and W parts, the climate is more arid, with high summer temperatures. In the extreme S, conditions are dry and much cooler.

Buoyage System

The IALA Buoyage System (Region B) is in effect. Mariners are cautioned that the buoyage in those parts of the Rio Uruguay that are the responsibility of the Argentine authorities is being changed to IALA Region B. Mariners are further cautioned that they might encounter both buoyage systems may be until the changeover is complete and should contact local authorities for the latest information.

See chart No. 1 for further IALA Buoyage System information.

Cautions

Kelp

Kelp, or sargasso weed, grows on most of the dangers having a rocky or stony bottom, especially off the coast and S of Golfo Nuevo. Growing kelp should invariably be considered a sign of danger and vessels should never pass through it if it can be avoided. A clear patch of water in the middle of a thick growth of weeds often indicates the position of the least depth over the danger. Many dangers are not marked by kelp; heavy seas sometimes tear the weed from a rock, or a moderate tidal current draws it underwater and out of sight.

Dead kelp, which has broken away from the bottom, floats in curled masses, with leaves showing above the surface; it sometimes drifts in long lines.

Light Vessels

Light vessels of Argentina display a secondary light from their sterns. This should be taken into account when passing a light vessel, especially in the Rio de la Plata.

Argentine light vessels also display a riding light; if the light vessel is used as a pilot station, a red light is displayed under the riding light.

Currency

The official unit of currency is the peso, consisting of 100 centavos.

Government



Flag of Argentina

Argentina is a republic. The country is divided into 23 provinces and one federal district.

Argentina is governed by a directly-elected President who can serve two 4-year terms. The National Congress consists of a 72-member appointed Senate, whose members serve 9-year terms, and a 257-member directly-elected Chamber of Deputies, whose members serve 4-year terms.

The legal system is based on U.S. and western European civil codes.

The capital is Buenos Aires.

Holidays

The following holidays are observed:

January 1	New Year's Day
Holy Thursday	Variable
Good Friday	Variable
Easter Sunday	Variable
First Monday in April	Veterans Day
May 1	Labor Day
May 25	1810 Revolution Anniversary
Third Monday in June	Flag Day
July 9	Independence Day
Third Monday in August	Death of General San Martin Anniversary
October 12	Columbus Day
December 8	Immaculate Conception
December 25	Christmas Day
December 31	Bank Holiday

Industries

The main industries are agriculture and livestock raising. Other industries include meat packing, food canning and processing, flour mills, tanning, leather goods, textiles, oil seeds,

oil and natural gas production, chemicals, wool, pharmaceuticals, automobile assembly, forestry, tourism, and fishing.

Minerals include iron ore, lead, zinc, tin, copper, mica, manganese, gold, silver, coal, tungsten, beryllium, uranium, barites, and limestone.

Crops include wheat, maize, tobacco, oats, barley, rye, sunflower seeds, potatoes, sugarcane, soya, rice, yerba mate (tea), cotton, and various fruits.

Languages

Spanish is the official language. English, Italian, German, and French are also spoken.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of Argentina are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims Golfo San Matias, Golfo Nuevo, and Golfo San Jorge as internal waters. Claims, jointly with Uruguay, the estuary of the Rio de la Plata as internal waters.

Maritime Boundary Disputes

Argentina claims the United Kingdom-administered Falkland Islands, South Georgia, and the South Sandwich Islands. The United Kingdom rejects sovereignty talks requested by Argentina.

Pilotage

Pilotage is compulsory for all foreign vessels in all Argentine channels, rivers, passes, ports, and berthing locations.

Pollution

Tank residues, bilges, or ballast water from oil compartments must never be pumped or released into ports or rivers. On the Atlantic coast, including Bahia Blanca, tanks and bilges can only be cleaned at a distance of not less than 50 miles off the shore and on a falling tide.

Regulations

General

Vessels operating in the proximity of an open port or close to quays or loading places where other vessels or barges are operating must reduce speed to a maximum of 6 knots.

Vessels anchored or moving within port limits must not use their whistles, sirens, or bells except as called for in the regulations to avoid collision or to signal a fire.

Communications

Vessels should establish VHF contact with the nearest coast radio station when within range and keep a listening watch on VHF channel 16 or a frequency assigned by the coast radio station. When out of range vessels should maintain a watch on VHF channel 16 if traffic is heavy or the visibility is poor.

Search and Rescue

The Argentine navy, in conjunction with the Prefectura Naval Argentina, is responsible for maritime search and rescue.

The Argentine navy is responsible for the operation of all Maritime Rescue Coordination Centers (MRCC). The Prefectura Naval Argentina is responsible for the operation of all Rescue Subcenters (RSC) and provides the Safety of Navigation Communication Service (SECOSENA) through Argentine Naval Authority coast radio stations.

MRCC Buenos Aires	cotm@ara.mil.ar
MRCC Puerto Belgrano	coopacsm@ara.mil.ar
MRCC Ushuaia	emanau@infovia.com.ar emanau@ara.mil.ar
RSC Rio de la Plata	contrasebaires@prefectura naval.gov.ar
RSC Tigre	—
RSC Rosario	—
RSC Corrientes	—
RSC Posada	—
RSC Concepcion del Uruguay	prefecturazonabajouruguay@ ciudad.com.ar
RSC Paso de los Libres	—
RSC Mar del Plata	pnamdp@infovia.com.ar
RSC Bahia Blanca	—
RSC Comodoro Rivadavia	crivpna@uolsinectis.com.ar
RSC Puerto Deseado	—
RSC Puerto Madryn	prefecturapuertomadryn@info via.com.ar
RSC San Antonio Oeste	—
RSC San Carlos de Bariloche	—
RSC Nuequen	comahuepna@calfnet.com.ar

RSC Rio Gallegos	—
RSC Lago Argentino	—
RSC Ushuaia	pnaushuaia@mpsatl.com.ar
RSC Islas Orcadas del Sur	Communicate via MRCC Ushuaia

The SECOSA stations maintain a continuous listening watch on international distress frequencies

Lifesaving stations are located, as follows:

1. Cabo San Antonio (36°18'S., 56°46'W.).
2. Isla Martin Garcia (34°11'S., 58°15'W.).

Vessel Reporting System (SECOSA)

A reporting system designed to provide information in the event of Search and Rescue (SAR) incidents has been established. Participation in this reporting system is mandatory for all vessels, with certain exceptions. Participation in the system is free of charge.

Reporting messages should be sent, as follows:

1. When entering Argentine waters, vessels should report the following information:

- a. Vessel name.
- b. Flag.
- c. Call sign.
- d. Length.
- e. Beam.
- f. Draft.
- g. Speed.
- h. Port of departure.
- i. Destination.
- j. Position.
- k. Course.
- l. Type of cargo.
- m. Whether there is a doctor on board.

2. When leaving Argentine waters, vessels should send the following information:

- a. Vessel name.
- b. Flag.
- c. Call sign.
- d. Speed.
- e. Port of departure
- f. Destination.
- g. Position.
- h. Course.

3. When entering an Argentine port, vessels should send the following information:

- a. Vessel name.
- b. Flag.
- c. Call sign.
- d. ETA.
- e. Berthing location.

4. When departing an Argentine port, vessels should send the following information:

- a. Vessel name.
- b. Flag.
- c. Call sign.
- d. Length.
- e. Beam.
- f. Draft.

- g. Speed.
- h. Port of departure.
- i. Destination.
- j. Course.
- k. Type of cargo.
- l. Whether there is a doctor on board.

5. When navigating within Argentine waters, vessels should report their name and call sign, as follows:

- a. Between the parallels of 42°00'S and 54°30'S—to Comodoro Rivadavia Prefectura Naval Radio (PNR) at 2000 UTC and 1400 UTC and whenever course and speed changes occur.
- b. Between the parallels of 35°50'S and 42°00'S—to Mar del Plata PNR at 0000 UTC and 1200 UTC and whenever course and speed changes occur.
- c. South of the parallel of 54°30'S—to Ushuaia PNR at 2000 UTC and 1400 UTC and whenever course and speed changes occur.

All messages should be sent to the nearest PNR coast station on VHF channel 16, if possible, otherwise by MF or HF. If contact with the nearest PNR coast station cannot be established, any other PNR coast station may be used, or, failing this, any Argentine coast radio station.

Messages should be in Spanish; however, if it is not possible to understand Spanish, vessels should use the International Code of Signals, or the Q-code, using the Standard Maritime Navigational Vocabulary.

Submarine Operating Areas

Argentine submarines may be encountered by day or at night while operating in the waters off the coast. Under certain circumstances, warnings that submarines are exercising in specified areas may be broadcast by local coastal radio stations.

Argentine warships fly the International Code Group "NE2" to denote that submarines, which may be submerged or surfaced, are in the vicinity. Vessels are cautioned to give a wide berth to any vessel flying this signal.

It must not be inferred from the above that submarines exercise only when in the company of escorting vessels.

A submarine submerged at a depth too great to show the periscope may indicate its position by means of an underwater lantern, which will illuminate the sea surface from below.

The following signals are used by submerged submarines while in submarine exercise area:

1. White smoke candles (with flames) indicate the position in response to a request from a ship or aircraft, or as required.
2. Yellow and green pyrotechnic flares indicate the position from which a practice torpedo has been fired. All vessels are requested to keep clear as the submarine may want to surface after the firing.
3. Yellow smoke candles.
4. Red pyrotechnic flares, which may be accompanied by smoke candles, repeated as often as possible indicate that vessels should keep clear as the submarine is carrying out emergency surfacing procedure. Vessels must not stop their propellers, but should clear the area immediately and stand by to render assistance.

5. Two yellow pyrotechnic flares or two white or yellow smoke candles released 3 minutes apart indicate that vessels should keep clear as the submarine is preparing to surface. Vessels must not stop their propellers and should clear the immediate vicinity.

Navigation Lights

Submarines may be encountered on the surface at night off the coast. The steaming and side lights of Argentine submarines appear to be placed well forward and very low above the water in proportion to the length and tonnage of these vessels. In particular, the emergency steaming light is lower than the side lights. The overtaking light (stern) is also placed low down and may be obscured by spray and wash. Argentine submarines are fitted with an amber quick-flashing light situated 1 to 2m above the steaming light as an aid to identification. It will also be used when snorting. While at anchor or moored to a buoy at night, Argentine submarines display normal anchor lights.

The overall arrangements of submarine lights is unusual and may well give the impression of markedly smaller and shorter vessels. Their vulnerability to collision when proceeding on the surface dictates particular caution when approaching such vessels.

Sunken Submarine

A submarine which is bottomed and unable to surface will try to indicate its position by the following methods:

1. Releasing an indicator buoy (which carries a vertical whip aerial) as soon as the accident occurs.
2. Firing candles giving off yellow or white smoke, at regular intervals, on the approach of surface vessels. (Yellow candles will be used as much as possible by day.)
3. Pumping out fuel or lubricating oil.

It may be impossible for a submarine to fire smoke candles. Correspondingly, a partially-flooded submarine may only have a certain number of smoke candles available and searching ships should not therefore expect many to appear.

Since oil slicks or debris may be the only indication of the presence or whereabouts of the sunken submarine, it is vitally important that surface ships refrain from discharging anything which appears to have come from a submarine while they are in the probability area. Searching ships and aircraft can waste valuable time investigating these false contacts.

Some Argentine submarine pyrotechnics can be fitted with message carriers. These may be recovered as soon as they have finished burning.

Argentine submarines are fitted with a free-floating indicator buoy which can be released from inside in case of emergencies or if for any reason the submarine is unable to surface.

In any submarine accident, time is the most vital factor affecting the chances for rescue of the survivors, and, as the sighting of an indicator buoy may be the first intimation that an accident has in fact occurred, it is vital that no time should be lost in taking action. The sighting of any indicator buoy should at once be reported by the quickest available means. If known, the name of the submarine should be included in the report. However, if vessels are unable to establish communication without leaving the vicinity of the submarine, it should be borne in mind that the primary consideration should be for

vessels to remain standing by to rescue survivors and not leave the scene of the accident.

At any time after a submarine accident, survivors may start attempting to escape. Current policy dictates that survivors will wait before escaping until rescue vessels are known to be standing by or conditions inside the submarine deteriorate to such an extent that an escape must be attempted. It should be noted that, in certain circumstances, the latter situation may not arise through lack of air supply until several days after the accident. However, if the submarine is badly damaged, survivors may have to make an escape attempt immediately. On arrival at the surface, crew members may be exhausted or ill, and, if circumstances permit, the presence of a boat already lowered is very desirable. Some crew members may require a recompression chamber. Therefore, it is the aim of the authorities to get such a chamber to the scene as soon as possible.

In order that those trapped in the submarine shall be made aware that help is at hand, naval vessels drop small charges into the sea which can be heard from inside the submarine. There is no objection to the use of small charges for this purpose, but it is vital that they are not dropped too close since crew members in the process of making ascents are particularly vulnerable to underwater explosions, and may easily receive fatal injuries. A distance of about 0.3 mile is considered to be safe.

If no small charges are available, the running of an echo sounder or the banging of the outer skin of the ship's hull with a hammer from a position below the waterline are likely to be heard in the submarine, and such banging and/or sounding should therefore be carried out at frequent intervals.

Indicator Buoy

Argentine submarines are equipped with free-floating indicator buoys. It is therefore of the utmost importance that the position, together with the estimated current and the strength and direction of the wind at that position; and the time of first sighting of the buoy be accurately and speedily reported to the appropriate authorities.

The Argentine submarine free-floating indicator buoy is made of aluminum. The body is cylindrical, 60cm long, approximately 20cm in diameter, and slightly domed on top. The base of the body flares out to a diameter of 23cm. It is bolted onto the buoy by means of eight 16cm bolts. Along the body there are three extensions which strengthen the structure and also act as guides to the strap with which the buoy is secured to the submarine. The whole of the body is painted bright orange. Between the base and the lower extension, a number is molded into the buoy with numerals 1cm in size. Another number with numerals 0.5cm in size appears close below the first.

Above the body is an aerial consisting of a yellow painted protection piece consisting of a metal cylinder, 14cm long and 9cm in diameter; a rubber protection piece, about 18cm long, which protects the flexible connection between the buoy and an insulator, 9cm long, on top of it; and a VHF aerial, 25cm long, which has a small white plastic knob on the end of it.

The buoys are fitted with an automatic transmitting radio unit operating an A2 transmission on 243MHz and 121.5MHz. The signal transmitted consists of a series of short dashes. Vessels receiving this signal should report the fact, giving their position and, if possible, an indication of signal strength.

Submarine indicator buoys should not be confused with white or yellow smoke candles or sonabuoys.

White smoke candles are usually fired from submarines to indicate their positions. They burn for up to 15 minutes emitting white smoke, flame, and a green dye into the water. These candles can be seen by day or at night and may easily be confused with aircraft marine markers. Yellow smoke candles are also fired from submarines to indicate their positions. They burn for about 5 minutes emitting yellow smoke. These candles can be seen more easily than white smoke candles in rough weather, but they cannot be seen at night. Sonabuoys are dropped from aircraft to detect submarines and may be encountered anywhere at sea.

The above objects may frequently be seen in areas where warships and aircraft exercise, whether or not submarines are present. In case of doubt, the object should be approached to confirm, visually, whether or not it is a submarine indicator buoy before reporting it.

Time Zone

The Time Zone description is PAPA (+3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Avenida Colombia 4300, Buenos Aires.

The mailing addresses are, as follows:

1. Argentina address—
Avenida Colombia 4300
C1425GMN Buenos Aires
2. U.S. address—
Unit 4334,
APO AA 34034

<p>U. S. Embassy Argentina Home Page http://buenosaires.usembassy.gov</p>



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General

Australia, the world's sixth-largest country and smallest continent, is located S of the Indonesian archipelago and is bounded on the E by the Pacific Ocean and on the W and S by the Indian Ocean.

The Great Barrier Reef fringes the NE coast of the country and extends for about 1,200 miles.

Most of the country consists of low irregular plateaus. The desert-like center is flat, barren, and dry. Large areas of fertile plain are located in the SE part.

The climate is generally arid to semiarid but there are wide variations. The N part is tropical and the S and E parts are temperate.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

The general direction of buoyage for the purposes of the IALA Buoyage System is E to W along the S coast of Australia, N along the W coast of Australia, N along the W coast of Australia, counterclockwise in the Gulf of Caprentaria, from W to E in Torres Strait, and N to S along the E coast of Australia

Cautions

General

The volume of commercial shipping passing through Torres Strait is considerable. A large number of local craft also operate between the islands.

Exploration

Oil and gas exploration rigs, production platforms, and associated submarine pipelines and wells may be encountered off

the Australian coast. At present, the main areas of activity are within the Bass Strait and off the NW coast. However, isolated rigs and structures may be encountered in other areas.

Seismic Surveys

In connection with the exploration for oil and gas, seismic survey vessels are operating off the Australian coast. When possible, general details of these activities will be broadcast as AUSCOAST Warnings. However, vessels carrying out such surveys may be encountered without warning.

Aids to Navigation

Due to the exposed position of many of the navigational buoys moored off the N and NW coasts of Australia and the frequency of cyclonic storms, no reliance should be placed on these buoys always maintaining their exact position. This applies especially to the buoys marking the outer approaches to Port Hedland, Port Walcott, and Dampier.

Currency

The official unit of currency is the Australian dollar, consisting of 100 cents.

Firing Areas

Firing Practice and Exercise Areas

The tables and graphics displayed below indicate details concerning the declared firing practice areas under Australian Army, Air Force, and Naval Forces Regulations.

Firing practice areas may be selected anywhere and details are published in the *Australian Government Gazette* and the *Designated Airspace Handbook*.

In view of the responsibility of range authorities to avoid accidents, the limits of practice areas are not shown on charts and descriptions of areas do not appear in the Sailing Directions (Enroute). However, beacons, lights, and buoys associated with the areas, which may be of assistance to the mariner, and targets, which might be a danger to navigation, will

generally be shown on charts and, when appropriate, will be mentioned in the Sailing Directions.

Definitions

A Restricted Area (R) is an area of defined dimensions within which certain restrictions are applied to aircraft. When shown as an R Area in Notices to Mariners, the air activity extends to sea level and the nature of the activity is such that dangers to maritime traffic may exist at specified times within the area.

A Prohibited Area (P) is an area of defined dimensions within which ships are not permitted at any time under any circumstances.

A Surface Restricted Area (SR) is a surface area of defined dimensions within which activities dangerous to maritime traffic may exist at specified times. The restriction is applicable to maritime traffic only.

The limits of all the areas are laid down numerically by States. Naval practice firings outside of the declared areas may be approved by the Department of Defense (Navy Office) from time to time. Warnings concerning firing practices are promulgated by Notices to Airmen (NOTAM) originated by the RAN and RAAF and are published by Airservices Australia on their website.

Airservices Australia Home Page

<http://www.airservicesaustralia.com/brief/areabrf.htm>

Fishing Areas

Between November and June, extensive lobster fishing takes place on the continental shelf between 24°00'S and 34°00'S. It has been reported that the lobster fisheries can be a hazard to navigation as the buoys are numerous and unlit; the buoy lines are long and there are no gaps between the lines. Mariners should keep a sharp lookout for trap markers and avoid damaging fishing gear as far as possible.

When passage permits, mariners are requested to transit the area outside the 200m depth curve.

RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE NORTHERN TERRITORIES

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YBBB/R230	Darwin	Military flying training	NOTAM	R230A —11°05'02"S, 130°53'39"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 11°20'50"S, 131°42'58"E; 12°05'13"S, 131°09'35"E; then the minor arc of a circle 25 NM in radius centered on Darwin DME; to 12°00'17"S, 130°54'53"E.	7

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
NORTHERN TERRITORIES**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YBBB/R230	Darwin	All military operations	NOTAM	R230B —10°24'52"S, 130°52'46"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 10°48'30"S, 132°07'07"E; 11°20'50"S, 131°42'58"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 11°05'02"S, 130°53'39"E.	7
		All military operations	NOTAM	R230C —9°54'44"S, 130°52'07"E; then the minor arc of a circle 150 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 10°24'14"S, 132°25'11"E; 10°48'30"S, 132°07'07"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME; to 10°24'52"S, 130°52'46"E.	7
		Military flying training	NOTAM	R230D —11°20'50"S, 131°42'58"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°02'20"S, 132°12'38"E; 12°18'53"S, 131°19'03"E; then the minor arc of a circle 25 NM in radius centered on Darwin DME; to 12°05'13"S, 131°09'35"E.	7
		Military flying training	NOTAM	R230E —10°48'30"S, 132°07'07"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 11°50'11"S, 132°51'32"E; 12°02'20"S, 132°12'38"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 11°20'50"S, 131°42'58"E.	7
		Military flying training	NOTAM	R230F —10°24'14"S, 132°25'11"E; then the minor arc of a circle 150 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 11°41'01"S, 133°20'40"E; 11°50'11"S, 132°51'32"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME; to 10°48'30"S, 132°07'07"E.	7

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
NORTHERN TERRITORIES**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YBBB/R264	Darwin	All military operations	NOTAM	R264A —12°32'35"S, 130°29'53"E; then the minor arc of a circle 25 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°18'12"S, 130°29'54"E; 12°12'26"S, 130°10'20"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 12°48'26"S, 129°35'45"E.	7
		All military operations	NOTAM	R264B —12°38'16"S, 130°10'16"E; then the minor arc of a circle 45 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°12'26"S, 130°10'20"E; 12°02'16"S, 129°36'08"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 12°48'09"S, 129°35'45"E.	7
		All military operations	NOTAM	R264C —11°59'33"S, 129°37'01"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°48'09"S, 129°35'54"E; 12°59'22"S, 128°56'35"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME; to 11°46'29"S, 128°58'27"E.	7
		All military operations	NOTAM	R264D —11°46'29"S, 128°58'27"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°59'22"S, 128°56'35"E; 13°13'15"S, 128°07'20"E; then the minor arc of a circle 170 NM in radius centered on Darwin DME; to 11°30'02"S, 128°10'18"E.	7
		All military operations	NOTAM	R264E —12°32'35"S, 130°29'53"E; then the minor arc of a circle 25 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°44'26"S, 130°37'42"E; 13°26'16"S, 130°00'54"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 12°48'09"S, 129°35'54"E.	7

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
NORTHERN TERRITORIES**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YBBB/R264	Darwin	All military operations	NOTAM	R264F —12°48'09"S, 129°35'54"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 13°26'16"S, 130°00'54"E; 13°56'38"S, 129°34'00"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME; to 12°59'22"S, 128°56'35"E.	7
		All military operations	NOTAM	R264G —12°59'22"S, 128°56'35"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 13°56'38"S, 129°34'00"E; 14°34'32"S, 129°00'13"E; then the minor arc of a circle 170 NM in radius centered on Darwin DME; to 13°13'15"S, 128°07'20"E.	7
		All military operations	NOTAM	R264H —12°44'26"S, 130°37'42"E; then the minor arc of a circle 25 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 12°49'20"S, 130°46'39"E; 13°41'06"S, 130°26'55"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME; to 13°26'16"S, 130°00'54"E.	7
		All military operations	NOTAM	R264J —13°26'16"S, 130°00'54"E; then the minor arc of a circle 80 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 13°41'06"S, 130°26'55"E; 14°18'44"S, 130°12'30"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME; to 13°56'38"S, 129°34'00"E.	7
		All military operations	NOTAM	R264K —13°56'38"S, 129°34'00"E; then the minor arc of a circle 120 NM in radius centered on Darwin DME (12°25'24"S, 130°54'23"E), to 14°18'44"S, 130°12'30"E; 15°05'44"S, 129°54'21"E; then the minor arc of a circle 170 NM in radius centered on Darwin DME; to 14°34'32"S, 129°00'13"E.	7

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
—	Greenough	Firing	HJ NOTAM	a. 28°57'50"S, 114°43'17"E., then along the coast to b. 28°58'09"S, 114°43'38"E. c. 28°58'28"S, 114°43'16"E. d. 28°58'10"S, 114°42'55"E.	8
—	Flat Rock	Air to surface weapons firing	NOTAM	A circle 2.4 NM in radius centered on 30°45'40"S, 115°09'45"E.	8
—	Swanbourne	Firing	Mon, Tues, Thurs 0930-1500 Tues 1800-2100	a. 31°57'07"S, 115°45'08"E., then along the coast to b. 31°58'26"S, 115°45'10"E. c. 31°58'59"S, 115°44'30"E. d. 31°58'58"S, 115°43'16"E. e. 31°56'39"S, 115°43'16"E. f. 31°56'39"S, 115°44'34"E.	8
YMMM/R119	Stirling	Gunnery and military flying	NOTAM	R119A —31°38'54"S, 113°38'19"E; then the minor arc of a circle 120 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 30°50'29"S, 114°00'32"E; 31°23'49"S, 114°58'43"E; then the minor arc of a circle 60 NM in radius centered on Perth DME, to 31°48'07"S, 114°47'50"E.	8
		Gunnery and military flying	NOTAM	R119B —32°30'51"S, 113°41'55"E; then the minor arc of a circle 120 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 31°38'54"S, 113°38'19"E; 31°46'38"S, 114°36'14"E; then the minor arc of a circle 70 NM in radius centered on Perth DME, to 32°16'55"S, 114°38'39"E.	8
		Gunnery and military flying	NOTAM	R119C —31°52'29"S, 115°22'41"E; then the minor arc of a circle 30 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 32°05'28"S, 115°23'49"E; 32°16'55"S, 114°38'39"E; then the minor arc of a circle 70 NM in radius centered on Perth DME, to 31°46'38"S, 114°36'14"E.	8

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R119	Stirling	Gunnery and military flying	NOTAM	R119D —33°08'23"S, 114°03'35"E; then the minor arc of a circle 120 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 32°30'51"S, 113°41'55"E; 32°16'55"S, 114°38'39"E; then the minor arc of a circle 70 NM in radius centered on Perth DME, to 32°38'44"S, 114°51'27"E.	8
		Gunnery and military flying	NOTAM	R119E —32°38'44"S, 114°51'27"E; then the minor arc of a circle 70 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 32°16'55"S, 114°38'39"E; 32°05'28"S, 115°23'49"E; then the minor arc of a circle 30 NM in radius centered on Perth DME, to 32°14'47"S, 115°29'22"E.	8
		Gunnery and military flying	NOTAM	R119F —33°42'40"S, 114°50'16"E; then the minor arc of a circle 120 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 33°08'23"S, 114°03'35"E; 32°38'44"S, 114°51'27"E; then the minor arc of a circle 70 NM in radius centered on Perth DME, to 32°58'36"S, 115°18'38"E.	8
		Gunnery and military flying	NOTAM	R119G —32°27'40"S, 115°38'13"E; 32°58'36"S, 115°18'38"E; then the minor arc of a circle 70 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 32°38'44"S, 114°51'27"E; 32°14'47"S, 115°29'22"E; then the minor arc of a circle 30 NM in radius centered on Perth DME, to 32°22'32"S, 115°39'30"E.	8
		Gunnery and military flying	NOTAM	R119H —32°09'27"S, 115°39'32"E; then along W coast of Garden Island to 32°14'51"S, 115°41'24"E; 32°22'32"S, 115°39'30"E; then the minor arc of a circle 30 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 32°14'47"S, 115°29'22"E.	8
YMMM/R140	Garden Island	Explosives demolition	H24	R140A —A circle 1.0 NM in radius centered on 32°10'36"S, 115°40'18"E.	8
		Explosives demolition	NOTAM	R140B —A circle 1.0 NM in radius centered on 32°10'36"S, 115°40'18"E.	8

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R144	Stirling	Gunnery and military flying	NOTAM	31°53'55"S, 115°34'18"E; 31°48'07"S, 114°47'50"E; then the minor arc of a circle 60 NM in radius centered on Perth DME (31°56'42"S, 115°57'34"E), to 31°19'34"S, 115°02'18"E; 31°38'11"S, 115°29'51"E.	8
YMMM/R146	Lancelin	Firing	NOTAM	R146A a. 30°54'00"S, 114°56'00"E. b. 30°45'30"S, 115°17'30"E. c. 30°55'00"S, 115°24'00"E. d. 31°07'30"S, 115°05'00"E.	8
		Firing	NOTAM	R146B a. 30°45'30"S, 115°17'30"E. b. 30°41'00"S, 115°27'00"E. c. 30°50'00"S, 115°33'00"E. d. 30°55'00"S, 115°24'00"E.	8
		Firing	NOTAM	R146C a. 30°41'00"S, 115°27'00"E. b. 30°45'30"S, 115°17'30"E. c. 30°47'56"S, 115°11'21"E., then along the coast to d. 30°38'57"S, 115°07'36"E.	8
YMMM/R148	Lancelin	Military flying	NOTAM	a. 30°00'00"S, 114°30'00"E. b. 30°15'32"S, 115°02'11"E., then along the coast to c. 30°47'56"S, 115°11'21"E. d. 30°54'00"S, 114°56'00"E. e. 31°07'30"S, 115°05'00"E. f. 31°40'00"S, 114°30'00"E.	8
YMMM/R157	Lancelin	Military flying	NOTAM	a. 31°40'00"S, 113°00'00"E. b. 30°00'00"S, 113°00'00"E. c. 30°00'00"S, 114°30'00"E. d. 31°40'00"S, 114°30'00"E.	8
YMMM/R184	Lancelin	Explosives demolition	NOTAM	A circle 1.5 NM in radius centered on 30°52'54"S, 115°16'12"E.	8
YMMM/R850A/B	Learmonth	Military flying training	NOTAM	R850A/B —22°54'26"S, 116°07'49"E; then the minor arc of a circle 120 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 24°07'12"S, 113°21'00"E; 22°51'49"S, 113°50'54"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME to 22°27'47"S, 114°46'13"E.	9

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R851A/B/C	Learmonth	Military flying training	NOTAM	R851A/B/C —21°22'24"S, 116°02'08"E; then the minor arc of a circle 120 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 22°54'26"S, 116°07'49"E; 22°27'47"S, 114°46'13"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME to 21°57'04"S, 114°44'39"E.	9
YMMM/R852A/B	Learmonth	Military flying training	NOTAM	R852A/B —20°24'43"S, 114°59'27"E; then the minor arc of a circle 120 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 21°22'24"S, 116°02'08"E; 21°57'04"S, 114°44'39"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME to 21°37'40"S, 114°23'44"E.	9
YMMM/R853A/B	Learmonth	Military flying training	NOTAM	R853A/B —19°52'35"S, 113°10'54"E; then the minor arc of a circle 150 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 19°57'19"S, 115°12'42"E; 20°52'05"S, 114°46'07"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME to 20°49'14"S, 113°32'34"E.	9
YMMM/R854A/B	Learmonth	Military flying training	NOTAM	R854A/B —20°49'14"S, 113°32'34"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 20°52'05"S, 114°46'07"E; 21°37'40"S, 114°23'44"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME, to 21°36'25"S, 113°50'49"E.	9
YMMM/R859A/B/C	Learmonth	Military flying training	NOTAM	R859A/B/C —A circle 40 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E).	9
YMMM/R860A/B/C	Learmonth	Military flying training	NOTAM	R860A/B/C —A circle 25 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E).	9

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R861A/B	Learmonth	Military flying training and firing	NOTAM	R861A/B —22°29'33"S, 112°29'59"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 20°49'14"S, 113°32'34"E; 21°36'25"S, 113°50'49"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME, to 22°21'08"S, 113°23'11"E.	9
YMMM/R862A/B	Learmonth	Military flying training and firing	NOTAM	R862A/B —22°39'16"S, 111°26'00"E; then the minor arc of a circle 150 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 19°52'35"S, 113°10'54"E; 20°49'14"S, 113°32'34"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME, to 22°29'33"S, 112°29'59"E.	9
YMMM/R863A/B	Learmonth	Military flying training and firing	NOTAM	R863A/B —22°29'33"S, 112°29'59"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 23°38'56"S, 113°32'16"E; 24°35'26"S, 113°09'38"E; then the minor arc of a circle 150 NM in radius centered on Learmonth DME, to 22°39'16"S, 111°26'00"E.	9
YMMM/R864A/B	Learmonth	Military flying training and firing	NOTAM	R864A/B —23°38'56"S, 113°32'16"E; then the minor arc of a circle 90 NM in radius centered on Learmonth DME (22°14' 05"S, 114°05'39"E), to 22°29'33"S, 112°29'59"E; 22°21'08"S, 113°23'11"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME, to 22°51'49"S, 113°50'54"E.	9
YMMM/R870	Learmonth	Firing	NOTAM	R870A —22°10'43"S, 113°59'06"E; then along Line Road, to 22°14'09"S, 113°58'01"E; 22°28'39"S, 114°01'32"E; then the minor arc of a circle 15 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 22°06'41"S, 113°51'35"E.	9

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
WESTERN AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R870	Learmonth	Firing	NOTAM	R870B —22°06'41"S, 113°51'35"E; then the minor arc of a circle 15 NM in radius centered on Learmonth DME (22°14'05"S, 114°05'39"E), to 22°28'55"S, 114°02'50"E; 22°53'37"S, 113°58'10"E; then the minor arc of a circle 40 NM in radius centered on Learmonth DME, to 21°54'07"S, 113°28'18"E.	9

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
SOUTH AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R245	Dangerous Reef	Naval operations	NOTAM	A circle 1 NM in radius centered on 34°55'54"S, 136°14'30"E.	10
YMMM/R246	Thistle Island	Naval operations	NOTAM	A circle 2 NM in radius centered on 34°59'42"S, 136°13'12"E.	10
YMMM/R252	Alamein	Firing	NOTAM	(a) 32°40'30"S, 137°47'30"E. (b) 32°47'00"S, 137°51'00"E. (c) 32°55'00"S, 137°51'00"E. (d) 32°59'00"S, 137°47'30"E. (e) 32°59'00"S, 137°42'53"E., then along the coast to (f) 32°57'00"S, 137°39'30"E. (g) 32°55'00"S, 137°37'30"E. (h) 32°40'30"S, 137°37'30"E.	10
YMMM/R254	North East Rock	Firing	NOTAM	35°07'00"S, 136°21'43"E; then the major arc of a circle 7 NM in radius centered on 35°04'30"S, 136°29'40"E, to 35°07'00"S, 136°37'37"E.	10
YMMM/R279	Edinburgh	Military flying and firing	NOTAM	35°18'08"S, 136°52'48"E; then N along the coast of the Yorke Peninsula to 34°58'12"S, 137°46'05"E; 34°57'38"S, 138°03'31"E; then the minor arc of a circle 23 NM in radius centered on Adelaide DME (34°56'49"S, 138°31'28"E) to 35°05'02"S, 138°05'19"E; 35°35'27"S, 137°23'33"E; then W along the N coast of Kangaroo Island, to 35°43'19"S, 136°43'13"E; then the minor arc of a circle 100 NM in radius centered on Adelaide DME to 35°21'44"S, 136°33'21"E.	10

**RESTRICTED AND DANGER AREAS WITH ASSOCIATED AIRSPACE
SOUTH AUSTRALIA**

Area	Name	Nature of Activity	Times of Use	Area limits bound by lines joining positions stated, unless otherwise indicated	Chartlet No.
YMMM/R295	Port Wakefield	Firing	H24	R295A a. 34°27'06"S, 138°08'30"E. b. 34°13'30"S, 138°08'30"E. c. 34°13'30"S, 138°11'59"E., then SE along Port Wakefield Road to d. 34°19'57"S, 138°16'15"E. e. 34°25'18"S, 138°16'06"E. f. 34°27'15"S, 138°13'29"E.	10
		Firing	NOTAM	R295B a. 34°27'06"S, 138°08'30"E. b. 34°13'30"S, 138°08'30"E. c. 34°13'30"S, 138°11'59"E., then SE along Port Wakefield Road to d. 34°19'57"S, 138°16'15"E. e. 34°25'18"S, 138°16'06"E. f. 34°27'15"S, 138°13'29"E.	10
		Firing	NOTAM	R295C a. 34°25'47"S, 138°15'27"E. b. 34°29'30"S, 138°16'30"E. c. 34°29'30"S, 138°08'30"E. d. 34°27'06"S, 138°08'30"E. e. 34°27'15"S, 138°13'29"E.	10
		Firing	NOTAM	R295D a. 34°29'30"S, 138°16'30"E. b. 34°34'00"S, 138°18'00"E. c. 34°34'00"S, 138°08'30"E. d. 34°29'30"S, 138°08'30"E.	10
		Firing	NOTAM	R295E a. 34°24'00"S, 138°03'30"E. b. 34°13'30"S, 138°03'30"E. c. 34°13'30"S, 138°08'30"E. d. 34°24'00"S, 138°08'30"E.	10
		Firing	NOTAM	R295F a. 34°15'00"S, 137°54'00"E. b. 34°09'00"S, 138°00'00"E. c. 34°09'00"S, 138°05'00"E. d. 34°13'30"S, 138°11'59"E. e. 34°13'30"S, 138°03'30"E. f. 34°24'00"S, 138°03'30"E. g. 34°24'00"S, 138°08'30"E. h. 34°34'00"S, 138°08'30"E. i. 34°34'00"S, 138°06'30"E.	10

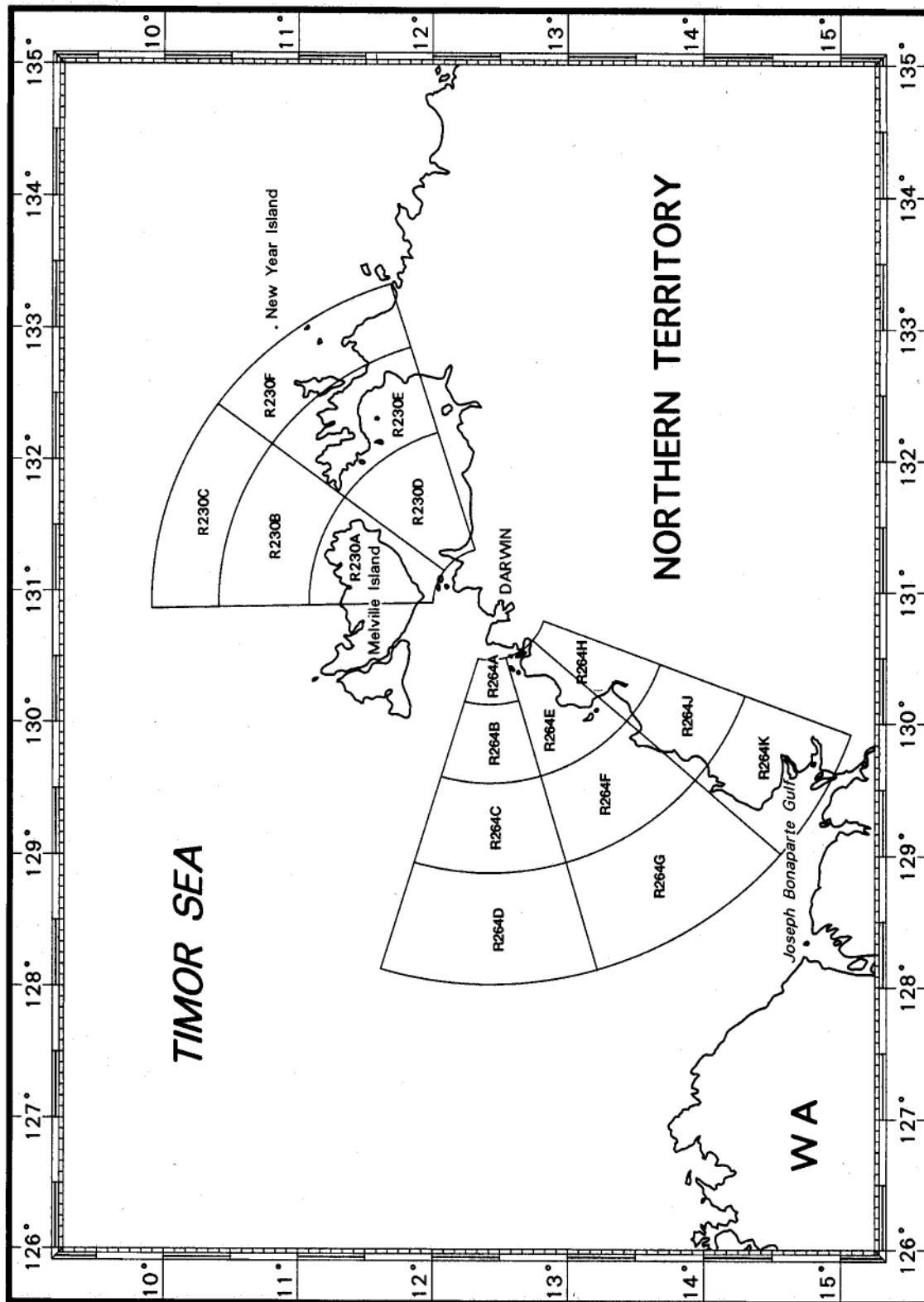
Extensive lobster fishing is also carried out between the months of November and June, inclusive, off the coast between the vicinity of Margaret Brock Reef (36°58'S., 139°36'E.) and Cape Nelson (38°26'S., 141°32'E.), and between the shore and the 150m depth curve. Mariners are requested to keep at least 10 miles clear of Cape Banks (37°54'S., 140°23'E.).

A significant level of commercial fishing takes place in Torres Strait during the prawn season, which occurs from May

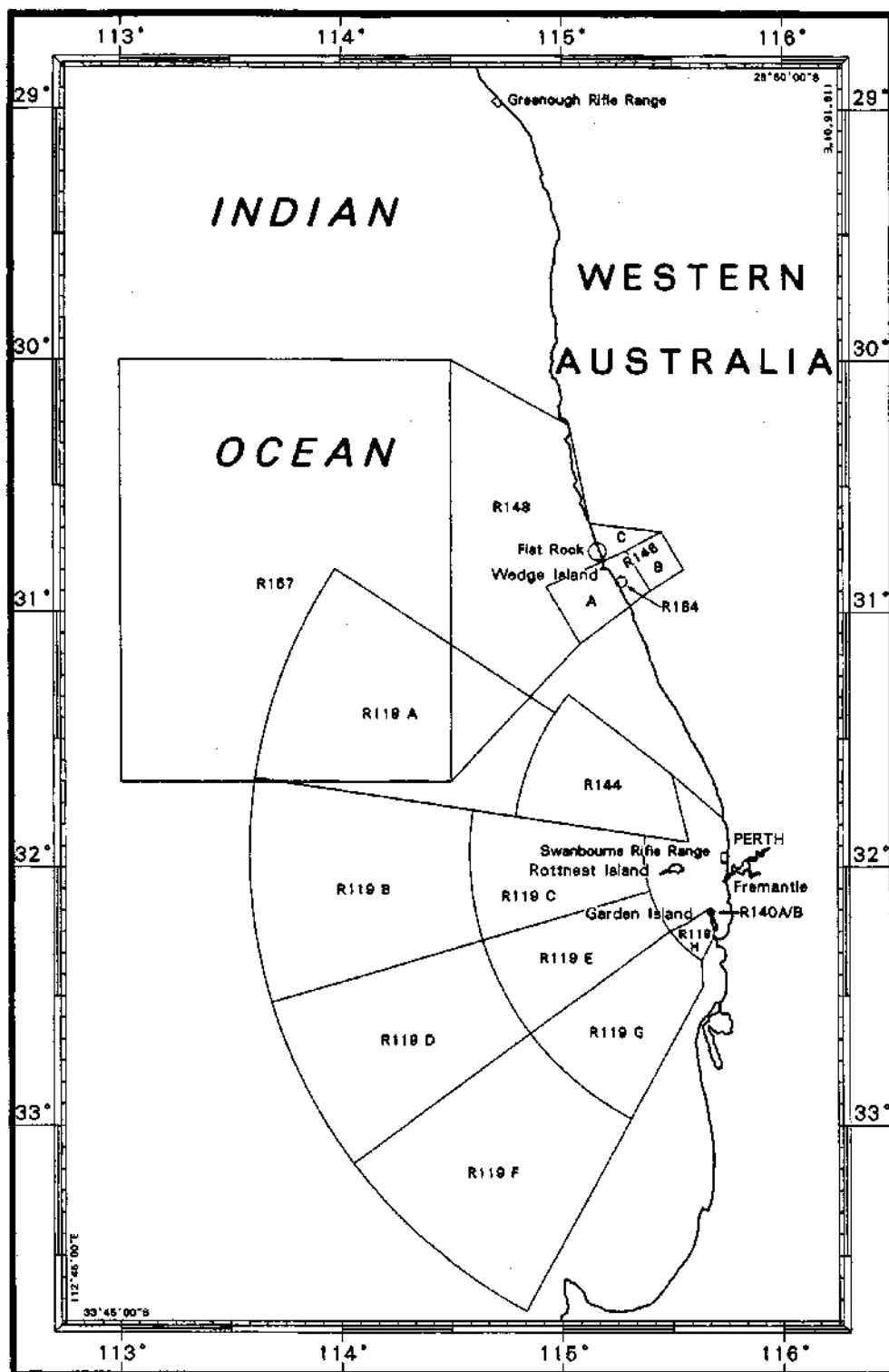
through September. These vessels work exclusively at night and anchor in the lee of the islands by day.

Government

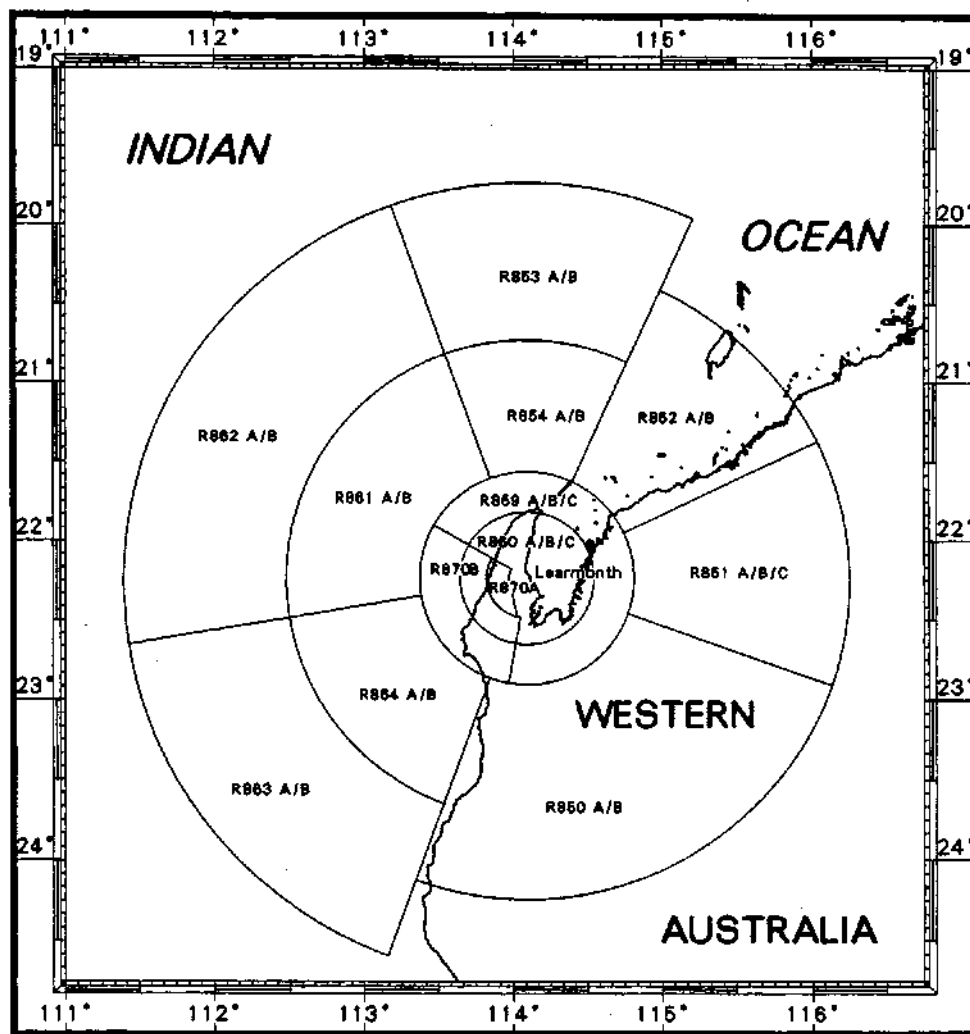
Australia, a fully independent nation within the British Commonwealth of Nations, is a democratic federal/state system recognizing the British monarch as sovereign. The country is divided into six states and two territories.



Chartlet No. 7



Chartlet No. 8



Chartlet No. 9

Elizabeth II, recognized as the Chief of State, appoints a Governor-General. The bicameral Parliament is composed of a 76-member Senate (directly elected to 6-year terms) and a 150-member House of Representatives (directly elected through proportional representation to 3-year terms).

The legal system is based on English common law.

The capital is Canberra.

Dependent Islands

The Cocos (Keeling) Islands

The **Cocos (Keeling) Islands** (12°05'S., 96°53'E.) lie in the Indian Ocean about 2,770 miles NW of Perth. The group is formed by two separate atolls and consists of some 27 small coral islands with a total area of about 14.2 km².

The islands are low-lying, flat, and thickly covered by coconut palms. They surround a lagoon in which vessels, with drafts of up to 7m, may anchor, but which is extremely difficult for navigation.

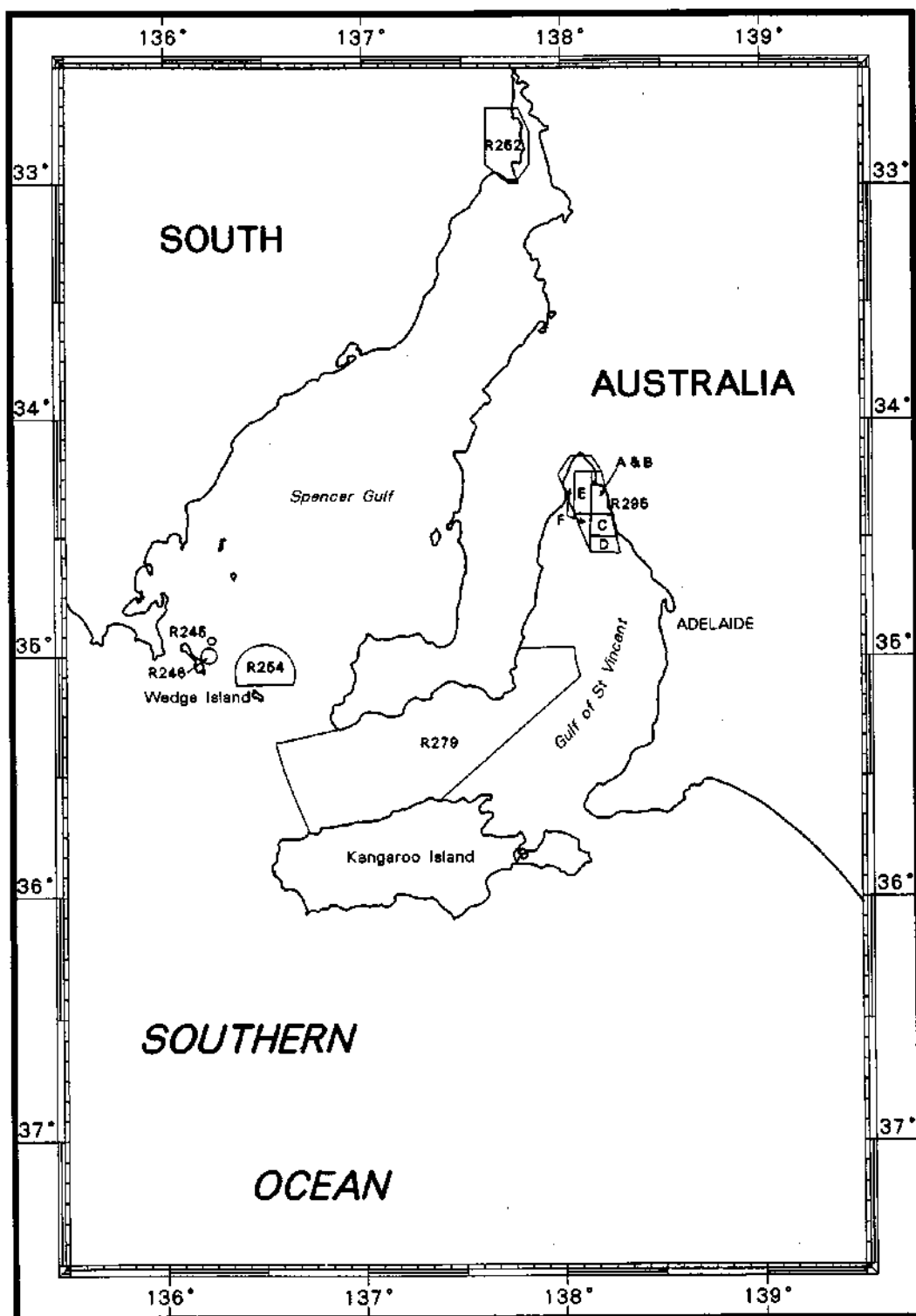
The islands were placed (1955) under the authority of the Australian Government as the Territory of Cocos (Keeling) Islands. An Administrator, appointed by the Governor-General, is the government's representative in the Territory and is responsible to the Minister for Territories and Local Government.

West Island is the largest of the group and the site of the airport. The climate is pleasant, being moderated by the SE trade winds for 9 months of the year.

The observed Standard Time is 6 hours 30 minutes fast of UT (GMT). Daylight Savings Time is not observed.

Christmas Island

Christmas Island (10°25'S., 105°40'E.), an isolated peak, lies in the Indian Ocean, about 225 miles S of the W end of Java. It is under the control of the Australian Government with an Administrator responsible for local administration. Extraction and export of rock phosphate dust is the island's only industry. The island is about 11 miles long and 4.5 miles wide.



Chartlet No. 10



Flag of Australia

The Time Zone description is GOLF (-7). Daylight Savings Time is not observed.

Heard Island and the McDonald Islands

Heard Island and the McDonald Islands (53°00'S., 73°00'E.) lie about 2,500 miles SW of Freemantle and are under the control of the Australian Government. Heard Island, of volcanic origin, is about 27 miles long and 13 miles wide; Shag Island lies about 5 miles N of it. The McDonald Islands lie 26 miles W of Heard Island and consist of two small islands and a rock. All the islands are barren and uninhabited.

The Time Zone description is GOLF (-7). Daylight Savings Time is not observed.

Holidays

The following holidays are observed:

January 1 *	New Year's Day
January 26 *	Australia Day
First Monday in March	Labor Day (Western Australia only)
Second Monday in March	Labor Day (Victoria and South Australia only)
Third Monday in March	Canberra Day (Canberra only)
Good Friday	Variable
Easter Saturday	Variable
Easter Sunday	Variable
Easter Monday	Variable
April 25	ANZAC Day
First Monday in June	Foundation Day
Second Monday in June	Queen's Birthday (except Western Australia)
Last Monday in September	Queen's Birthday (Western Australia only)
First Monday in October	Labor Day (Canberra, South Australia, and New South Wales only)
December 25	Christmas Day
December 26	Boxing Day

* If the holiday falls on a Saturday or Sunday, it is observed on the following Monday.

The following additional holidays in Australia are observed locally:

- Northern Territory:
 - Alice Springs Show Day (July)
 - Tennant Creek Day (July)
 - Katherinen Show Day (July)
 - Darwin Show Day (July)
 - Borroloola Show Day (July)
 - Picnic Day (August)
- South Australia:
 - Brisbane National Show Day (August)
 - Proclamation Day (December 26)
- Tasmania:
 - Devonport Cup Day (January)
 - Hobart Regatta (February)
 - Launceton Cup Day (February)
 - King Island Show Day (March)
 - AGFEST (May)
 - Burnie Show Day (October)
 - Royal Launceton Show Day (October)
 - Flinders Island Show Day (October)
 - Royal Hobart Show Day (October)
 - Devonport Show Day (December)
- Western Australia—Melbourne Cup Day (November)

The following holidays are observed on Christmas Island:

January 1	New Year's Day
Chinese New Year	Variable
Good Friday	Variable
Hari Raya Puasa	Variable
Mari Raya Haji	Variable
December 25	Christmas Day

Industries

The main industries include mining, industrial and transportation equipment, food processing, chemicals, steel, fishing, electrical and electronic products, oil refining, textiles, shipbuilding, aircraft assembly, and tourism.

Agriculture is also a leading industry. Principal crops include wheat, fruits, barley, oats, rice, grapes, and sugarcane. Other major products are wool, poultry, and livestock.

Languages

English is the official language. There are some native dialects in use.

Mined Areas

The following areas are declared dangerous due to mines laid during the war of 1939-1945:

1. **Napier Broome Bay.**—An area within a circle, with a radius of 5 miles, centered on position 14°04'S, 126°40'E.

2. **Cartier Island.**—An area within a circle, with a radius of 1 mile, centered on position 12°32.0'S, 123°32.5'E.

Due to the elapse of time, the risk in these areas to surface navigation is now considered no more dangerous than the ordinary risks of navigation. However, a very real risk still exists with regard to anchoring, fishing, or carrying out any form of submarine or seabed activity.

Navigational Information

Enroute Volumes

Pub. 127, Sailing Directions (Enroute) East Coast of Australia and New Zealand.

Pub. 175, Sailing Directions (Enroute) North, West, and South Coasts of Australia

Maritime Claims

The maritime territorial claims of Australia are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. Claims Anxious Bay, Rivoli Bay, Encounter Bay, and Lacepede Bay as historic waters.

Maritime Boundary Disputes

In 1999, a partial maritime boundary between Australia and East Timor was established over part of the Timor Gap, but an unreconciled area where Australia was granted a 90 per cent share of exploited gas reserves has hampered the creation of a maritime boundary with Indonesia.

Indonesian groups have challenged Australia's claim to Ashmore Reef (12°15'S., 123°03'E.).

Pollution

Insurance Requirements

All vessels 400 gross tons and over carrying oil as cargo or bunkers must have a "relevant insurance certificate" when visiting an Australian port. This requirement does not apply to oil

tankers already required to have insurance under the International Convention on Civil Liability for Oil Pollution Damage 1992. The "relevant insurance certificate" must contain the following information:

1. Vessel name.
2. Owner's name.
3. Name and business address of insurance provider.
4. Commencement date of insurance coverage.
5. Amount of coverage provided.

Further information on these requirements can be obtained from Environment Protection Standards of the Australian Maritime Safety Authority (AMSA), as follows:

1. Telephone: 02-6279-5007
2. E-mail: Using the contact form found at the AMSA web address listed below:

http://www.amsa.gov.au/Contact_Us

Pollution Reports

All vessels navigating within Australian territorial waters must report incidents involving the following:

1. A discharge or probable discharge of oil, or noxious liquid substances in bulk, resulting from damage to the vessel or its equipment, or for the purposes of securing the safety of a vessel or saving life at sea (**Harmful Substances (HS) Report**).
2. A discharge or probable discharge of harmful substances in packaged form, including those of freight containers, portable tanks, road and rail vehicles, and shipborne barges (**Marine Pollutants (MP) Report**).
3. Damage, failure, or breakdown of a vessel 15m long or greater which affects the safety of the vessel or results in the impairment of the safety of navigation.
4. A discharge of oil or noxious liquid substances in excess of that permitted under the current MARPOL Convention.

The pollution report (POLREP) should be sent to the Manager, Marine Environment Protection Standards in the Australian Maritime Safety Authority (AMSA), Canberra through AusSAR. AusSAR can be contacted 24 hours, as follows:

1. Telephone: +61-2-6230-6811
1-800-641-792 (toll free)
2. Fax: +61-2-6230-6868
3. Telex: 7162349 (computer connected)
4. E-mail: rccaus@amsa.gov.au

Information required in the HS Report and the MP Report is given in the accompanying table.

Australia—Pollution Reports			
Identifier	Content	HS*	MP*
A	Vessel name, call sign/ship station identifier, and flag	X	X
B	Date and time (UTC) of event	X	X
C	Latitude/Longitude or	X	X
D	True bearing and distance		
E	True course	X	
F	Speed in knots and tenths of knots	X	

Australia—Pollution Reports			
Iden- tifier	Content	HS*	MP*
L	Intended track	X	
M	Radio communications (full names of stations)	X	X
N	Time of next report	X	
P	Pollution details, as described in the Key below	X ¹	X ²
Q	Ship information, as described in the Key below	X ³	X ³
R	Dangerous cargo lost overboard, as described in the Key below	X ⁴	X ⁵
S	Weather conditions	X	X
T	Name, address, telex, and telephone number of ship's owner and representative	X	X
U	Vessel size and type	X	X
X	Remarks	X ⁶	X ⁶
Key			
*	Sections of the reporting format which are inappropriate may be omitted from the report.		
X	Required information.		
X ¹	<p>This information is required in the event of probable discharge. The following details should be included:</p> <ol style="list-style-type: none"> 1 Type of oil or the correct technical name(s) of the noxious liquid substance on board. 2 UN number(s). 3 Pollution category (A, B, C, or D) for noxious liquid substances. 4 Name(s) of manufacturer(s) of substances, if appropriate, when known, or consignee(s) or consignor(s). 5 Quantity. 		
X ²	<p>This information is required in the event of probable discharge. The following details should be included:</p> <ol style="list-style-type: none"> 1 Correct technical name(s) of cargo. 2 UN number(s). 3 IMO hazard class(es). 4 Name(s) of manufacturer(s), when known, or consignee(s) or consignor(s). 5 Types of packages, including identification marks. Specify whether portable tanks or tank vehicles, whether vehicle or freight container, or other transport unit containing packages. Include official registration marks and numbers assigned to the unit. 6 An estimate of the quantity and likely condition of the cargo. <p>Information not immediately available should be sent in a supplementary message or messages.</p>		
X ³	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Condition of the vessel. 2 Ability to transfer cargo/ballast/fuel. 		
X ⁴	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Type of oil or the correct technical name(s) of the noxious liquid discharged into the sea. 2 UN number(s). 3 Pollution category (A, B, C, or D) for noxious liquid substances. 4 Name(s) of manufacturer(s) of substances, if appropriate, when known, or consignee(s) or consignor(s). 5 An estimate of the quantity of the substances. 6 Whether lost substances floated or sank. 7 Whether loss is continuing. 8 Cause of loss. 9 Estimate of the movement of the discharge or lost substances, giving current position, if known. 10 Estimate of the surface area of the spill, if possible. 		

Key	
X ⁵	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Correct technical name(s) of cargo. 2 UN number(s). 3 IMO hazard class(es). 4 Name(s) of manufacturer(s), when known, or consignee(s) or consignor(s). 5 Types of packages, including identification marks. Specify whether portable tanks or tank vehicles, whether vehicle or freight container, or other transport unit containing packages. Include official registration marks and numbers assigned to the unit. 6 An estimate of the quantity and likely condition of the cargo. 7 Whether lost cargo floated or sank. 8 Whether loss is continuing. 9 Cause of loss.
X ⁶	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Action being taken with regard to the discharge and the movement of the vessel. 2 Assistance or salvage efforts which have been requested or which have been provided by others. 3 The master of an assisting or salvaging vessel should report the particulars of the action undertaken or planned.

Regulations

Ship Pre-Arrival Report

Foreign flag vessels are required to submit pre-arrival information using the Australian Customs Service's Form 13 (Ship Pre-Arrival Report); this information should be sent at least 96 hours prior to arrival or, as follows:

1. If the duration of the voyage from the previous port is less than 96 hours, the report should be submitted 72 hours in advance.
2. If the duration of the voyage from the previous port is less than 72 hours, the report should be submitted 48 hours in advance.
3. If the duration of the voyage from the previous port is less than 48 hours, the report should be submitted 24 hours in advance.
4. If the duration of the voyage from the previous port is less than 24 hours, the report should be submitted 12 hours in advance.

Australian Customs Service's Form 13 (Ship Pre-Arrival Report) can be obtained from the Australian Customs Service web site, as follows:

Australia Customs Home Page

<http://www.customs.gov.au>

The Ship Pre-Arrival Report contains security related fields requiring the following information:

1. Details of the International Ship Security Certificate (ISSC).
2. The current security level at which the ship is currently operating.
3. The last ten ports of call, with departure dates, and the security level at each port.
4. When the security level at any of these ports is different from that of the ship, details of any special/specific security measures implemented by the ship.

5. Details of any ship-to-ship activity within the last ten ports of call.

6. Next four ports of call, including Australian ports, where known.

Quarantine

The Australian Quarantine and Inspection Service (AQIS) currently requires all vessels arriving in Australia from overseas, or who have been in contact with overseas vessels or sea installations, to submit Form 006—Quarantine Pre-Arrival Report (QPAR) to AQIS. Copies of the report can be accessed from the AQIS web site.

AQIS Seaports Home Page

<http://www.aqis.gov.au/shipping>

The QPAR details the condition of the vessel, including human health, cargo, and ballast water management. The QPAR should be sent to AQIS no more than 48 hours and no less than 12 hours prior to arrival in Australia. This will allow efficient processing of the QPAR and avoid any disruption to the vessel's arrival. Vessels that do not submit a QPAR will be met by a quarantine officer on or shortly after arrival to complete the quarantine formalities. This will cause a delay to the vessel and additional AQIS charges.

Vessels require written permission to discharge any ballast water in Australian ports or waters. This permission may only be granted after the vessel has properly submitted a QPAR to AQIS.

Vessel masters will also be required to complete the AQIS Ballast Water Log. Copies of the form can be accessed from the AQIS web site.

Vessels intending to visit a non-proclaimed port, defined as a remote port with no active AQIS presence, must obtain prior permission to do so by submitting AQIS Form 20AA at least 10 days prior to arrival at the port. Copies of the form can be accessed from the AQIS web site.

Questions concerning the QPAR and the Ballast Water Log can be directed to the following e-mail addresses:

AQIS Seaports Program Manager: seaports@aqis.gov.au
 Ballast Water Advisor: ballastwater@aqis.gov.au

Single Hull Oil Tankers (SHOT)

Australia is in the process of phasing in a ban on all SHOT by 2010. Further information can be found in Australian Maritime Safety Organization (AMSA) Marine Notice 13/2004, at the AMSA website, as follows:

AMSA Marine Notices 2004

http://www.amsa.gov.au/shipping_safety/Marine_Notices/2004/index.asp

Search and Rescue

AusSAR, a unit of the Australian Maritime Safety Authority (AMSA), has assumed responsibility for both maritime and aviation search and rescue operations.

Australian Maritime Safety Authority (Search and Rescue)

http://www.amsa.gov.au/Search_and_Rescue

When a ship or an aircraft is in distress in the Australian Search and Rescue Region (SRR), the boundaries of which are identical to the boundaries of the AUSREP area, assistance may be given by vessels in the vicinity and/or the following authorities:

1. Australian Maritime Safety Authority (AMSA) through AusSAR, specifically the Rescue Coordination Center Australia (RCC Australia), is responsible for search and rescue for civil aircraft, for merchant ships outside port limits, and for small craft beyond the capacity of regional SAR resources. RCC Australia, located in Canberra, coordinates aircraft and surface vessels involved in search and rescue operations within the Australian SRR and can be contacted by e-mail, as follows:

rccaus@amsa.gov.au

RCC Australia is also the Australian Mission Control Center (AUMCC) for the COSPAS/SARSAT International Satellite System used for the detection of distress beacons. It is manned continuously and may be contacted through the AMSA HF DSC network or via INMARSAT.

2. The AMSA HF DSC Network, which has stations located in Wiluna (Western Australia) and Charleville (Queensland), is controlled from RCC Australia and will respond to initial calls on HF DSC. Vessels wishing to communicate with the HF DSC network (station identifier: RCC Australia; call sign: VIC; MMSI number 005030001) are required to initiate a DSC call on the International

Distress Alerting Frequencies (4207.5 kHz, 6312.0 kHz, 8414.5 kHz, 12577.0 kHz, and 16804.5 kHz). The INMARSAT Land Earth Station (LES) at Perth provides communications through both the Indian Ocean Region (IOR) and Pacific Ocean Region (POR) satellites. Details of Australian Maritime Communications Stations (MCS) can be found in relevant International Telecommunications Union (ITU) and ALRS publications.

3. The Royal Australian Air Force (RAAF) is responsible for SAR operations involving Australian and foreign military land-based aircraft, but may provide assistance to other SAR authorities.

4. The Royal Australian Navy (RAN) is responsible for SAR in respect to naval ships and aircraft.

5. State and Territory Police Forces are responsible for SAR operations involving fishing vessels and pleasure craft within the limitations of their SAR resources.

Ships fitted with suitable radio equipment can make a significant contribution to safety by guarding an appropriate International distress frequency for as long as practicable, whether or not required to do so by regulations.

All Australian port radio stations use VHF channel 67 to supplement VHF channel 16 as a distress, safety, and calling frequency.

Masters of vessels operating within the Australian Search and Rescue Region (SRR) are advised that an Australian Government protocol for ships assisting people in distress at sea is in place. This protocol sets out important principles that must be recognized to ensure a smooth post-rescue effort while minimizing the disruption to the intended voyage of the rescuing vessel. It provides guidance to ships' masters on the processes to be followed in relation to landing people who have been rescued at sea. Copies of the protocol can be obtained from the web site listed below.

Protocol for Commercial Shipping Rescuing Persons at Sea in or Adjacent to the Australian Search and Rescue Region

http://www.dotars.gov.au/transinfra/sea_rescue.aspx

The protocol requires the master of a vessel participating in a rescue that is being coordinated by RCC Australia to provide certain information to RCC Australia. Reports can be made 24 hours, as follows:

AMSA HF DSC Network:	MMSI 005030001
Toll-free:	1-800-641-92
Telephone:	+61-2-6230-6811
Facsimile:	+61-2-6230-6868
E-mail	rccaus@amsa.gov.au

Signals

Port Control Signals

When a port in Australia is closed to navigation, the following signals are shown:

1. By day, a black cone, point up, between two black balls, vertically disposed.

2. At night, a green light between two red lights, vertically disposed at the signal masthead.

Note.—When these signals are shown, no other masthead signals will be shown.

Caution.—Some ports have their own signals. See the appropriate Sailing Directions (Enroute) publication for the port concerned.

Port Priority Signals

In certain Australian ports, vessels of 35m or more in length (less in some ports), when navigating within the pilotage waters of the port and requiring a priority or right-of-way over other vessels, may display the following:

1. By day, when berthing or unberthing, the flag signals as prescribed in the Port Authority By-laws.

2. At night, two lights mounted vertically, 2m apart, the upper being green and the lower being red.

Tidal Signals

Tide Signals.—Tide Signals, shown from the masthead, refer to vertical movements of the tide only and are given in the accompanying table.

Tide Signals		
Tide	Day signal	Night signal
Flood tide	Black cone, point up	Green light
Ebb tide	Black ball	Red light
Slack water	Black cylinder	White light

Quarter Tide Signals.—When shown with other signals, they are displayed on the mast below the cross tree or the normal position of the crosstree. Quarter Tide Signals are not shown with Depth Signals. When considered sufficient by local authorities, only 1st Quarter and 3rd Quarter Signals will be shown to indicate 1st Half Tide and 2nd Half Tide. The signals are given in the accompanying tables.

Flood Tide Quarter Tide Signals		
Tide	Day signal	Night signal
1st Quarter	Black cone, point up	Green light
2nd Quarter	Black cone, point up over black cylinder	Green light over white light
3rd Quarter	Two black cones, points up, vertically disposed	Two green lights, vertically disposed
4th Quarter	Black cylinder over black cone, point up	White light over green light

Ebb Tide Quarter Tide Signals		
Tide	Day signal	Night signal
1st Quarter	Black ball	Red light
2nd Quarter	Black ball over black cylinder	Red light over white light
3rd Quarter	Two black balls, vertically disposed	Two red lights, vertically disposed
4th Quarter	Black cylinder over black ball	White light over red light

Depth Signals

Depths signals are shown at the yardarm, with whole meter signals being shown at the yardarm opposite the decimal signals.

The signals indicate the depth, in meters, above local port datum, which may differ from chart datum. Depth Signals, which are not displayed with Quarter Tide Signals, are given in the accompanying table.

Depth Signals		
Depth	Day signal	Night signal
0.25m	Black ball	Red light
0.50m	Black cone, point up	Green light
0.75m	Black cylinder	White light
1m	Black ball over black cone, point up	Red light over green light
2m	Black ball over black cylinder	Red light over white light
3m	Black cone, point up, over black ball	Green light over red light
4m	Black cone, point up, over black cylinder	Green light over white light
5m	Two black cones, points up, vertically disposed	Two green lights, vertically disposed
6m	Black cylinder over black ball	White light over red light
7m	Black cylinder over black cone, point up	White light over green light
8m	Two black cylinders, vertically disposed	Two white lights, vertically disposed

Datum Signals.—This signal indicates that the yardarm Depth Signals are to be subtracted. If shown at the same time as Navigational Signals, the Datum Signal will be shown 2m below the Tide Signals and the Navigational Signals.

The Datum Signals are, as follows:

1. Day signal—Black cylinder.
2. Night signal—White light.

Navigation Signals

Navigation signals, shown 2m below the masthead, are used to indicate navigational risk due to the state of the sea on a bar, or to strong tidal currents or freshets in a river. These signals are given in the accompanying table.

Navigation Signals		
Condition	Day signal	Night signal
Normal	No signal shown	
Moderate	Black cone, point down	Quick flashing green light
Dangerous	Two black cones, points down, vertically disposed	Quick flashing red light

Storm Warning Signals

When bad weather prevails or is expected, special reports and storm warnings are transmitted from the radio stations in the area affected. Daily weather reports and forecasts are also transmitted.

The following signals may be displayed when winds of force 8 or greater are expected:

1. Day signal—One black diamond.
2. Night signal—Two red lights, vertically disposed.

Weather reports and forecasts are posted up in post offices at various ports in Australia.

Within Queensland, warnings of tropical cyclones are sent by the Bureau of Meteorology, Brisbane, by telegram daily (including Sundays) to coastal radio stations.

Such warnings are also sent to postmasters, harbormasters, police, and general public broadcasting stations in and adjacent to areas likely to be affected. Coastal Radio Stations broadcast such warnings to all ships on receipt. The Bureau issues warnings at 6 hour intervals when a cyclone center is more than 150 miles from the coast. If less than 150 miles from the coast, additional warnings are issued.

For the information of vessels not fitted with a radio, a red pendant will be displayed at various ports and signal stations along the Queensland coast. (See Pub. 127, Sailing Directions (Enroute) East Coast of Australia and New Zealand).

This red pennant indicates that a storm warning message has been received, details of which may be obtained from the harbor officials or postmaster at any port or place where the signal is displayed; when it is displayed at a signal station or lighthouse, the details will be signaled, on demand; the reply to a demand for a storm warning message is made by the International Code, by day, and by light at night.

In addition, there are certain places where storm warning messages are available at the Post Office, but where no red pendant is displayed.

General Signals

General signals should be used by vessels in Australian ports. A vessel having pilotage exemption should display a white flag at the main or where it can best be seen.

The signals laid down in the International Code of Signals should be used by vessels having explosives on board or waiting for clearance from quarantine or requiring any of the following; pilot, customs, water, police, or medical assistance.

A vessel having inflammable cargo on board shall display at the masthead, by day, Flag "B" of the International Code of Signals, and by night will exhibit a red light, visible all-round the horizon.

A vessel swinging in a river or narrow channel should sound four short blasts on its whistle or siren, followed after a short interval by the appropriate sound signal to indicate its direction of movement.

Submarine Operating Areas

Australian submarines may be encountered by day or at night while operating in any of the waters off the Australian coast. Under certain circumstances, warnings that submarines are exercising in specified areas may be broadcast by local coastal radio stations.

Australian escort vessels fly the International Code Group "NE2" to denote that submarines, which may be submerged or surfaced, are exercising in the vicinity. Vessels are cautioned to give a wide berth to any vessel flying this signal.

It must not be inferred from the above that submarines exercise only when in the company of escorting vessels.

A submarine submerged in an exercise area at a depth too great to show the periscope may show the following pyrotechnic or smoke candle signals:

1. White smoke candles (with flame), yellow smoke candles, or yellow and green pyrotechnic flares indicate the submarine's position in response to a request from a ship or aircraft or as required.
2. Red pyrotechnic flares (may be accompanied by smoke candles repeated as often as possible) indicate that the submarine is carrying out emergency surfacing procedure. Vessels should keep clear and must not stop their propellers. Vessels must also standby to render assistance.

If the red pyrotechnic flare signal is sighted and the submarine does not surface within 5 minutes, it should be assumed that the submarine is in distress and has sunk. An immediate attempt should be made to fix the position in which the signal was sighted.

White smoke candles burn for up to 15 minutes; they emit white smoke and flame and can be seen day and night. Caution is necessary as they can be easily confused with the smoke and flame of aircraft marine markers and floats.

Yellow smoke candles burn for about 5 minutes; they emit yellow smoke. They can be seen more easily in rough weather than the white smoke candles, but they cannot be seen at night.

Navigation Lights

Australian submarines have their masthead and side lights placed well forward and very low over the water in proportion to their length and tonnage. In particular, some submarines can only show a forward masthead light in calm confined waters. Other submarines may have the forward masthead light situated lower than the side lights. In addition, the main mast-

head light may be situated well forward of the midpoint of the submarine's length.

The stern light may be placed very low, and may, at times, be partially obscured by spray and wash. In some cases, the stern light will be well forward of the aft part of the submarine and will not give a true indication of the submarine's length. The stern lights are invariably situated lower than the side lights.

The aft anchor light of a nuclear submarine is mounted on the upper rudder which is some distance astern of the hull's surface waterline. Hence, care must be taken to avoid confusing the submarine with two separate vessels of less than 50m in length.

The overall arrangement of submarine lights is unusual and may well give the impression of markedly smaller and shorter vessels. Their vulnerability to collision when proceeding on the surface and the fact that some submarines are nuclear powered dictates particular caution when approaching such vessels.

Nearly all Australian submarines are fitted with an amber quick-flashing light situated 1 to 2m above the main steaming light. This additional light is for use as an aid to identification in narrow waters and areas of dense traffic. Australian submarines will normally exhibit this identification light under the above conditions and when entering or leaving a harbor at night.

Australian Collins class submarines exhibit a very quick flashing yellow identification light (120 flashes per minute). This identification light should not be confused with an air-cushioned vessel operating in a non-displacement mode, which displays the same light.

Sunken Submarine

A submarine which is bottomed and unable to surface will try to indicate its position by firing candles giving off yellow or white smoke, either on the approach of surface vessels or at regular intervals. Yellow candles will be used as much as possible by day.

It may be impossible for a submarine to fire smoke candles. Correspondingly, a partially-flooded submarine may have only a certain number of smoke candles available and searching ships should not therefore expect many to appear.

Since oil slicks or debris may be the only indication of the presence or whereabouts of the sunken submarine, it is vitally important that surface ships refrain from discharging anything which might appear to have come from a submarine while they are in the probability area. Searching ships and aircraft can waste many valuable hours in investigating these false contacts.

Some Australian submarine pyrotechnics can be fitted with message carriers. If a message has been attached, the pyrotechnic will be fitted with a dye marker, giving off a yellowish-green color on the surface. Such a pyrotechnic should be recovered as soon as it has finished burning.

Australian Collins class submarines are fitted with a Submarine Launched EPIRB (SERB), which will be described later in this section.

In any submarine accident, time is the most vital factor affecting the chances of rescue of survivors, and, as the sighting of an indicator buoy may be the first intimation that an accident has in fact occurred, it is vital that no time should be

lost in taking action. The sighting of any beacon should at once be reported by the quickest available means to the Rescue Coordination Centre Australia, the Navy, or the police. However, if vessels are unable to establish communications without leaving the vicinity of the submarine, it should be borne in mind that the primary consideration should be for vessels to remain standing by to rescue survivors and not leave the scene of the accident. Every effort should be made to include in the report the serial number of the beacon; this number is affixed on top of the SERB.

At any time after a submarine accident, survivors may start attempting to escape. Current policy dictates that survivors will wait before escaping, as follows:

1. Until rescue vessels are known to be standing by.
2. Conditions inside the submarine deteriorate to such an extent that an escape must be attempted.

It should be noted that, in certain circumstances, the latter situation may not arise through lack of air supply until several days after the accident. However, if the submarine is badly damaged, survivors may have to make an escape attempt immediately. Any ship finding a SERB should not therefore leave the position but stand by well-clear ready to pick up survivors.

On arrival at the surface, crew members may be exhausted or ill, and, if circumstances permit, the presence of a boat already lowered is very desirable. Some crew members may require a recompression chamber. Therefore, it is the aim of the authorities to get such a chamber to the scene as soon as possible.

In order that those trapped in the submarine shall be made aware that help is at hand, naval vessels drop small charges into the sea which can be heard from inside the submarine. There is no objection to the use of small charges for this purpose, but it is vital that they are not dropped too close since crew members in the process of making ascents are particularly vulnerable to underwater explosions, and may easily receive fatal injuries. A distance of about 0.3 mile is considered to be safe.

If no small charges are available, the running of an echo sounder or the banging of the outer skin of the ship's hull with a hammer from a position below the waterline are likely to be heard in the submarine, and such banging and/or sounding should therefore be carried out at frequent intervals.

Submarine Emergency Radio Beacon (SERB)

The SERB is made of aluminum, colored orange, and is cylindrical in shape, with two whip aerials. The beacon is fitted with an automated transmitting unit, with a battery life of 48 hours, and operating on the following frequencies:

- a. 406.025 MHz—COSPAS/SARSAT.
- b. 243 MHz—Military Air Guard.
- c. 121.5 MHz—Civil Air Guard.

Submarine Launched Expendable Communications Buoy (ECB)

The ECB is a silver tube about 1.1m long and 0.1m in diameter. The aerial is kept above water by a flotation collar about 0.4m in diameter. This buoy is used for tactical communications between submarines and other warships/aircraft. It can, however, be fired in an emergency default mode, in which case it will transmit a SABRE tone on 243MHz Military Air Guard.

Time Zone

Australia is covered by multiple Time Zones, as follows:

1. Northern Territory—The observed Standard Time is 9 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.
2. South Australia—The observed Standard Time is 9 hours 30 minutes fast of UT(GMT). Daylight Savings Time (10 hours 30 minutes fast of UT(GMT)) is maintained from the last Sunday in October until the beginning of February of the following year; the exact changeover date should be obtained from local authorities.
3. Western Australia—The Time Zone description is HOTEL (-8). Daylight Savings Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) off the SE coast of Australia are, as follows:

1. South of Wilsons Point in Bass Strait. (IMO adopted)
2. In Bass Strait. (IMO adopted)

U.S. Embassy

The U.S. Embassy is situated at Moonah Place, Yarralumla, Canberra, Australian Capital Territory 2600.

The mailing address is APO AP 96549.

U. S. Embassy Australia Home Page
<http://canberra.usembassy.gov>

Vessel Traffic Service

The Australian Ship Reporting System (AUSREP)

The Australian Ship Reporting System (AUSREP) is compulsory for Australian-registered commercial vessels and for foreign vessels on voyages between Australian ports. All other vessels are encouraged to participate when within the AUSREP area.

The objective of the AUSREP system is to contribute to the safety of life at sea by:

1. Limiting the time between the loss of a vessel and the initiation of SAR action, in cases where no distress signal is sent out.
2. Limiting the search area for a SAR action.
3. Providing up-to-date information on all shipping resources available in the area, in the event of SAR action.

The AUSREP area, and Australian SAR region, covers the coast of Australia, as well as the coast of Antarctica between 75°E and 163°E, and extends N to approximately 6°S at its W limit and to 12°S at its E limit. The limits are best seen in the accompanying graphic.

The system is operated by the Australian Maritime Safety Authority (AMSA) through AusSAR, specifically the Rescue Coordination Center Australia (RCC Australia).

Telephone:	AusSAR AUSREP	+61(0)2-6230-6880
	AusSAR Maritime	+61(0)2-6230-6811

Facsimile: +61(0)2-6230-6868

Address: P.O. Box 2181
Canberra ACT 2601
Australia

Internet: <http://www.amsa.gov.au/amsa/sar.htm>

The AUSREP/REEFREP Interface, a two-way automatic data exchange interface, has been implemented between the REEFREP Ship Reporting System and the existing AUSREP system. This will avoid the need for dual reporting by vessels when participating in the AUSREP and REEFREP systems and will enhance the information available in each system. Further information about REEFREP can be found in Pub. 127, Sailing Directions (Enroute) East Coast of Australia and New Zealand.

On departure from an Australian port or on entering the AUSREP area, the following procedures are applicable:

1. Masters are to send a Sailing Plan (SP) to RCC Australia.
2. A computerized plot is maintained of the vessel's estimated position.
3. Position updates can be done by either of the following methods:
 - a. Masters may agree to their vessels being queried via INMARSAT-C which, when requested, will automatically send a PR. This is the preferred method of submitting a PR.
 - b. Position Reports (PR) are sent to RCC Australia each day between 2200 UTC and 0800 UTC at the time that has been nominated by the vessel's master so that a report is received at least every 24 hours. Dates and times shall be in Coordinated Universal Time (UTC).
4. On arrival at the destination or on final departure from the AUSREP area, a Final Report (FR) should be sent to RCC Australia.
5. Should a vessel at any time be in a position more than 2 hours steaming from the position that would be predicted from the last SP or PR, a Deviation Report (DR) should be sent to the MRCC.
6. All dates and times used in AUSREP reports are to be in Coordinated Universal Time (UTC).

Sailing Plan (SP).—The SP is sent up to 24 hours prior to joining the AUSREP system, with the following exceptions:

1. At ports within the REEFREP area, the SP must be sent prior to departure.
2. At other Australian ports, the SP may be sent up to 2 hours after departure.
3. When entering the system from sea at an ocean boundary, the SP may be sent 24 hours prior to entering the area or up to 2 hours after crossing the boundary.

The SP contains information necessary to initiate a plot and give an outline of the intended passage. If a vessel does not sail within 2 hours of the time stated in the SP, then that SP must be canceled and a new one sent.

The AUSREP report format for an SP is given in the accompanying table in the Appendix.

Position Report (PR).—The PR is sent at the Date/Time of Next Report as listed in Field N of the Sailing Plan. These reports must be sent between 2200 UTC and 0800 UTC at the nominated daily reporting time until and including the day of

arrival in, or departure from, the AUSREP area. The interval between PRs should not exceed 24 hours.

Masters are reminded that facsimile and e-mail submissions are not acceptable for AUSREP PRs. RCC Australia cannot keep a SAR watch for vessels that do not use GMDSS communications (INMARSAT or HF DSC) at sea. Where masters have nominated polling as the method of reporting, AUSREP PRs are sent automatically and regularly when the terminal is polled by RCC Australia.

The information contained in the PR will be used by RCC Australia to update the plot. The PR must reflect the position and course of the vessel at the designated reporting time. However, the speed should be the anticipated speed until the next report time.

The PR is normally automatically processed by RCC Australia, but may not be seen by an operator. If the PR contains important additional safety information that requires the immediate attention of the operator, the word "ALERT" should be placed in Format Field X of the PR. The word "ALERT" should be used only to identify important safety information for immediate action.

The ETA at port of destination or AUSREP area boundary should always be confirmed in the last PR of a passage. It may also be amended in any PR whenever the Master is aware of a revised ETA.

The AUSREP report format for a PR is given in the accompanying table in the Appendix.

Deviation Report (DR).—A DR must be sent to RCC Australia if a vessel, at any time, is in a position more than 2 hours steaming from that which would be predicted from the last SP or PR. A DR can also be sent when any other voyage details are altered.

Failure to send an appropriate DR may have a negative effect on SAR operations. If the vessel is in distress and has not sent out a distress message, the AUSREP procedures may result in RCC Australia initiating an air search to locate the vessel. The search aircraft will start looking in the area related to the vessel's route and speed as indicated in the SP and subsequent PRs. If the vessel has not submitted a DR when there is a change in route and speed, the search aircraft may be unable to find any survivors. It is in the vessel's best interest to keep RCC Australia up-to-date on all voyage details.

The AUSREP report format for a DR is given in the accompanying table in the Appendix.

Final Report (FR).—An FR is sent, as follows:

1. For vessels enroute overseas and departing the AUSREP area, the FR should be sent at the AUSREP boundary.

2. For vessels ending a voyage at an Australian port within the REEFREP SRS area, the FR must be sent at the last REEFREP reporting point

3. For vessels ending a voyage at any other Australian port, the FR can be sent within 2 hour's steaming of the port or pilot station. Under no circumstances should the FR be sent more than 2 hours prior to arrival.

As an alternative, the FR may be telephoned to RCC Australia immediately after berthing, but not more than 2 hours after arrival. If it is known that the vessel is to anchor or berth where telephone facilities are not available, the FR should be sent via the appropriate coast radio station or INMARSAT-C.

The AUSREP report format for an FR is given in the accompanying table in the Appendix.

Sending an AUSREP report.—AUSREP reports can be sent, as follows:

1. In an Australian port.—All reports should be made from the vessel directly to RCC Australia, in order to avoid delays that may be associated with using intermediate agencies. Collect telephone calls, facsimile messages, or INMARSAT-C may be used to send an SP or an FR.

2. Via INMARSAT.—Reports must be addressed RCC Australia and sent via the Pacific Ocean Region (POR) or Indian Ocean Region (IOR) satellites to Xantic Land Earth Station (LES) Perth. These procedures apply only to AUSREP messages. Calls are free of charge when submitted within the AUSREP area.

INMARSAT-C fitted Ship Earth Stations will not be charged for messages sent via INMARSAT-C if these procedures are followed: Select Special Access Code (SAC) 43 through Xantic LES Perth only; Pacific Ocean (222) or Indian Ocean (322).

INMARSAT-A, B, or FLEET 77M fitted Ship Earth Stations will be charged for messages sent via INMARSAT-A, B, or FLEET 77M to RCC Australia.

While participating in AUSREP, vessels should ensure that their INMARSAT equipment remains active in the LOGIN mode at all times.

The preferred method of submitting an AUSREP report is via INMARSAT-C using the previously-described polling option as opposed to sending the reports manually.

3. Via the AMSA HF DSC Network.

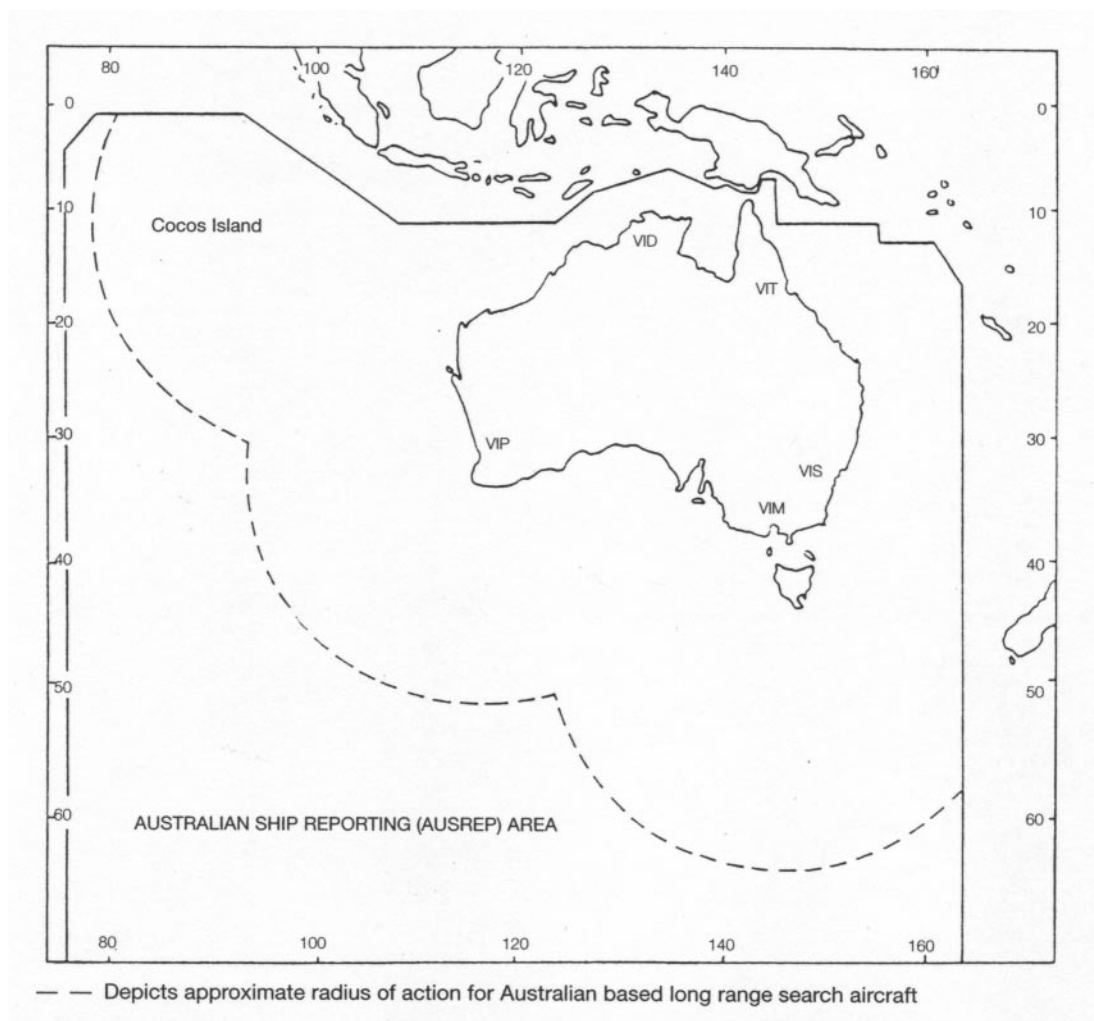
4. Via REEFCENTRE.—Vessels transiting through the REEFREP area should send a PR via REEFCENTRE on the appropriate VHF channel, except, as follows:

- a. Send the SP directly to RCC Australia prior to departure.

- b. Send the PR directly to RCC Australia if the VHF channel is unavailable.

Polling.—The AMSA has introduced the use of INMARSAT-C polling as an option to replace the submission of PRs; polling is the preferred method of sending a PR to RCC Australia. Vessels can request RCC Australia to poll the vessel using INMARSAT-C by inserting the word "POLL" in Format Field N of the SP instead of nominating a Date/Time of Next Report. Polling involves RCC Australia sending a signal to the vessel's INMARSAT-C terminal to prompt an automatic position report, which includes the vessel's position, course, and speed. INMARSAT-C polling eliminates the need for a manual submission of the PR. Sailing Plans, Deviation Reports, and Final Reports must still be submitted as normal.

Non-reporting to AUSREP (NOREP).—In the case of a foreign vessel departing on an overseas voyage from an Australian port, if the Master does not intend to send AUSREP Position Reports, this fact must be indicated in the SP by the inclusion of the word NOREP in place of the nominated daily reporting time in Field N; amplifying remarks may be included in Field X. Under this option, RCC Australia will not undertake SAR action unless specific information is received which indicates an air search is warranted. However, a NOREP vessel must still comply with the mandatory REEFREP reporting requirements when the vessel enters the REEFREP area.



Overdue AUSREP Reports.—AUSREP is a positive reporting system. If a PR or an FR is not received by RCC Australia within 2 hours of the expected time, action is taken to determine the vessel's location and confirm the safety of the crew. It should be noted that in some parts of the AUSREP area, the ability to conduct an air search may be restricted by aircraft range limitations.

To avoid unnecessary search action it is most important that vessels report at the nominated reporting time each day and send their FR when leaving the AUSREP area. If a vessel is unable to pass a PR or an FR, all attempts must be made to pass a message to this effect through another vessel, a harbor, or other shore authority either by VHF, signaling lantern, or emergency transmitter.

The action taken by RCC Australia if a report is not received as expected will depend on the prevailing circumstances, but will generally include the following:

1. Internal checks to establish if the vessel's report has been received by RCC Australia.
2. For INMARSAT-equipped vessels, an attempt to contact the vessel directly.
3. Attempts to contact the vessel via HF DSC to the vessel's MMSI number.

4. Extensive communication checks with Australian and overseas coast radio stations, owners, agents, and other ships are carried out to trace the last sighting or contact with the vessel.

By the time 21 hours have elapsed, search planning will be in progress and details included in NAVAREA X and facsimile weather broadcasts. By the time the report is 24 hours overdue, positive SAR action will have been initiated to locate the vessel. It should be noted that resources available for an air search decrease with the distance from an Australian base and that the times may differ if the vessel is participating in INMARSAT-C polling.

Reports to AMVER.—While participating in AUSREP, masters may also wish their reports to be forwarded for inclusion in the AMVER system operated by the U.S. Coast Guard. This should be indicated by including the word "AMVER" in Format Field Y in each message.

For vessels participating in INMARSAT-C polling, if Format Field Y in an SP indicates that the reports are to be passed to AMVER, the AUSREP system will automatically forward PRs to AMVER.

An AMVER report will only be forwarded if a vessel is in the AUSREP area and is currently participating in the AUSREP system.

Reports to other reporting systems.—Reports from ships to other reporting systems (JASREP, etc.) are not forwarded by RCC Australia. Ship are requested to pass these reports direct.

Appendix

AUSREP Reporting Format

AUSREP Reporting Format					
Field	Meaning	Type of Report			
		SP	PR	DR	FR
A	Vessel name, call sign, and IMO number.	X	X	X	X
B	Date/time of position.		X	X	
C	Position (latitude and longitude).		X	X	
E	Course. If in REEFREP area, the name of the next reporting point, including any alternative route, if applicable, may be substituted.	R	X	A	
F	Speed (vessel's anticipated average speed, in knots and tenths of knots, until next report). If in REEFREP area, the ETA at the next reporting point may be substituted.	X/R	X	A	
G	Name of last non-Australian port of call.	A			
H	Date/time and point of entry into AUSREP area (point is either the Australian port of departure or the latitude/longitude of crossing the AUSREP area boundary).	X			
I	Next foreign (non-Australian) destination and ETA.	A		A	
J	1. Coastal pilotage (Yes/No). 2. Last name of pilot. 3. License number of pilot.	R		A	
K	Date/time and point of exit from the AUSREP area (the point is either the latitude/longitude of crossing the area boundary or the Australian port at which the vessel is to arrive).	X		A	X
L	1. Name of final reporting point for REEFREP SRS area, or 2. AUSREP route information (vessel's intended track—state rhumb line or coastal, great circle, or composite with limiting latitude). If both are provided, put the REEFREP information first and separate from the AUSREP information with a slash (/).	X/R		A	
M	Coast radio maritime communication stations monitored (coast radio stations monitored, INMARSAT A and C numbers, and the MMSI/DSC number, if equipped).	X		A	
N	Date and time (UTC) of next report. (See Note 1 below.)	X	X	X	
O	Draft, fore and aft, in meters and tenths of meters.	R			
P	1. Normal name of cargo. 2. Is cargo classified as hazardous (Yes/No)?	R		A	
Q	Defects or other limitations such as damage, failure, or breakdown affecting the safety of the vessel.	A		A	
R	Pollution (or reports of any seen).	A		A	
U	Vessel type, length (in meters), and gross tonnage.	R			
V	Medical personnel carried.	X			
X	Remarks. If choosing INMARSAT-C polling, include the make and type of INMARSAT-C terminal here.	A	A	A	X
Y	Request to relay a report to AMVER. (See Note 2 below.)	A			

AUSREP Reporting Format					
Field	Meaning	Type of Report			
		SP	PR	DR	FR
Key: 1. X—Required field. 2. R—Vessels transiting the REEFREP Ship Reporting System should also include these fields. 3. A—Include if appropriate.					
Notes: 1. See text under Non-reporting to AUSREP (NOREP) for vessels electing not to participate in the AUSREP system. When polling is selected as the method of position reporting, the word “POLL” should be included in this section. 2. Place the word “AMVER” in Format Field Y; do not separate the letters in the word “AMVER” by spaces, as this may disrupt the computer processing. Masters should note that an AMVER report will only be forwarded if a vessel is in the AUSREP area and is currently participating in the AUSREP system.					



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General

Bahrain is comprised of a group of islands in the Persian Gulf lying midway between Qatar and the mainland of Saudi Arabia. Bahrain, the largest and highest island of the group, is about 30 miles long and 10 miles wide. Al Muharraq, lying close NE, is about 4 miles long and 1 mile wide; it is connected to Bahrain by a causeway. The country also includes the islands of Sitrah, Umm Nasan, Jiddah, and several other small islets. Bahrain has a dispute with Qatar concerning territorial claims over the Hawar Islands.

The terrain is formed by mostly low, desert plain.

The climate is hot and humid during the summer, with somewhat mild winters.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Bahraini dinar, consisting of 1,000 fils.

Firing Areas

Naval firing practices (surface-to-surface and surface-to-air) take place within an exercise area enclosed by the following:

- 26°34'N, 50°50'E.
- 26°34'N, 50°36'E.
- 26°40'N, 50°36'E.
- 26°40'N, 50°50'E.

Government



Flag of Bahrain

Bahrain is a traditional monarchy. The country is divided into 12 municipalities.

Bahrain is governed by a king, who appoints the Prime Minister and the Cabinet. The bicameral Parliament consists of a 40-member Shura Council (appointed by the king) and a 40-member House of Deputies (directly elected to 4-year terms).

The legal system is based on Islamic law and English common law.

The capital is Manama (Al Manamah), on the island of Bahrain.

Holidays

The following holiday is observed:

December 16 or 17	Bahrain National Day
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Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Crude oil production and refining are the major industries. Other industries include aluminum smelting, ship repair, offshore banking, fishing, and the manufacture of furniture, building materials, and consumer goods. Agriculture includes dates, fruits, vegetables, poultry, and livestock.

Languages

Arabic is the official language. English, Farsi, and Urdu are also widely spoken.

Mined Areas

Vessels are advised that Mined Areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by

Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Bahrain are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.

Regulations

General

Liquor trafficking between vessels alongside wharves or between vessels and the shore is strictly prohibited.

Notification

It is compulsory for all ships entering Bahrain waters for reasons other than berthing at Mina Salman, ASRY, BAPCO, ALBA, or any other private jetties to obtain prior written permission from the Port Director before anchoring in Bahrain waters.

Search and Rescue

The Directorate of Ports is responsible for coordinating maritime search and rescue operations in Bahraini territorial waters.

Bahrain Maritime Operations Center (A9M) maintains a continuous listening watch on international distress frequencies.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Building 979, Road 3119, Block 331, Zinj, Manama (Al Manamah).

The mailing addresses are, as follows:

1. Bahrain address—
Box 26431
Manama
2. U.S. address—
PSC 451
FPO AE (09834-5100)

<p>U. S. Embassy Bahrain Home Page http://manama.usembassy.gov</p>
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General

Bangladesh, formerly East Pakistan, lies in southern Asia and borders the Bay of Bengal. It is bounded on the W, N, and NE by India; on the S by the Bay of Bengal; and on the SE by Burma. In 1992, India granted Bangladesh a 999-year lease of the Tin Bigha corridor linking the enclaves of Angarpota and Dahagram.

The terrain consists mostly of a flat alluvial plain, with some hills in the SE part.

The climate is tropical monsoon with heavy rains, heat, and extreme humidity. Rain falls heavily during the monsoon season from June to October.

The short winter season, from October to March, is dry and cool.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the taka, consisting of 100 poisha.

Firing Areas

Military firing practice takes place regularly off the coast of Bangladesh. Notice of firing exercises and the areas involved are promulgated through coastal warnings and by local notices to mariners. Vessels should navigate with caution.

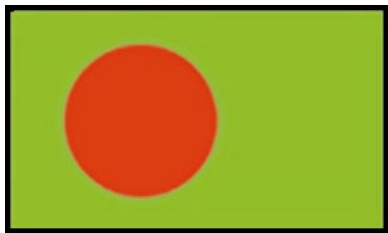
Government

Bangladesh is a parliamentary democracy. The country is divided into six divisions.

Bangladesh is governed by a President, who is elected for a 5-year term by the Parliament. The Prime Minister is appointed by the President. The Parliament consists of 300 directly-elected members serving 5-year terms.

The legal system is based on English common law.

The capital is Dhaka (Dacca).



Flag of Bangladesh

Holidays

The following holidays are observed:

February 21	Shahid Day (Martyr's Day)
May 1	May Day
March 26	Independence Day
April 15	Bengali New Year's Day
November 7	National Revolution and Solidarity Day
December 16	Victory Day
December 25	Christmas Day

Hindu holidays, which are subject to the appearance of the moon, include Jamat-Ul-Vida, Buddha Purnima, Janamash-tami, and Durga Puja (Dashami).

Islamic holidays, which are subject to the appearance of the moon, include Shab-e-Barat, Shab-e-Qadr, Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

The major industries include jute manufacturing, cotton textiles, food processing, steel, aluminum, paper, newsprint, cement, fertilizer, fishing, light engineering, and livestock raising.

The main agricultural crops are jute, rice, sugarcane, wheat, tobacco, tea, and potatoes.

Languages

Bengali is the official language. English is also used.

Navigational Information

Enroute Volume

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of Bangladesh are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	18 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	The Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Nuclear-powered vessels and vessels transporting nuclear materials or other radioactive substances are required to give notice prior to entering the territorial sea. Claims straight baseline between points along the 18m curve.

** Also considered a Security Zone.

Maritime Boundary Disputes

A dispute with India over New Moore Island (South Talpatty Island) (Purbasha Island) (21°37'N., 89°09'E.), in the Bay of Bengal, has prevented the establishment of a maritime boundary.

Search and Rescue

The Bangladesh Department of Shipping is responsible for coordinating search and rescue operations and can be contacted by e-mail, as follows:

dosdgbd@bttn.net.bd

A Maritime Rescue Coordination Center (MRCC) is located in Dhaka. A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Signals

Storm Signals

The General System, the Brief System, or the Extended System of storm signals may be used in Bangladesh ports. For further information, see India—Signals—Storm Signals.

Time Zone

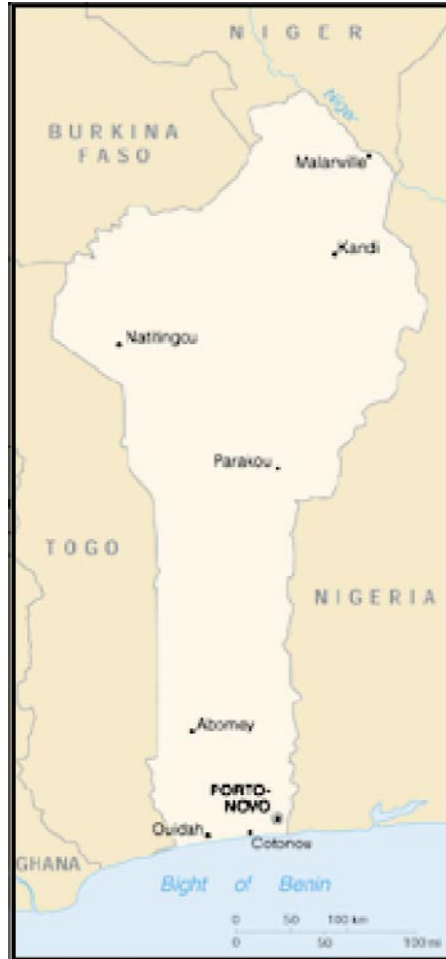
The Time Zone description is FOXTROT (-6). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at the Diplomatic Enclave, Madani Avenue, Baridhara, Dhaka, 1212.

The mailing address is G.P.O. Box 323, Dhaka 1000.

U. S. Embassy Bangladesh Home Page
<http://dhaka.usembassy.gov>



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General

Benin, formerly Dahomey, is bounded on the E by Nigeria, on the N by Niger and Burkina Faso, on the W by Togo, and on the S by the Gulf of Guinea. Its coast, 65 miles long, is flat and sandy with scattered lagoons and mangrove swamps.

The country extending inland is flat and covered with tropical vegetation. The ground rises gradually, about 50 miles inland, to a plateau that attains elevations of 304 to 487m.

The far N region of the country consists of a featureless plateau that attains an elevation of about 760m and slopes down toward the Niger River, on the N border.

The climate is equatorial in the coastal region, with a long rainy season from March to July and a short rainy season from October through November. The dry season increases away from the coast, with some inland areas having rain only between May and September.

The country has average temperatures of 27.8°C in January and 25°C in July.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the franc CFA (French African Community franc), consisting of 100 centimes.

Government

Benin is a republic. The country is divided into 12 departments.



Flag of Benin

Benin is governed by a directly-elected President serving a 5-year term. The unicameral National Assembly consists of 83 directly-elected members serving 4-year terms.

The legal system is based on French civil law and customary law.

The capital is Porto-Novo. Cotonou is the seat of government.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 10	Traditional Religions Day
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
Ascension Day	Variable
Whitmonday	Variable
August 1	Independence Day
October 26	Armed Forces Day
November 1	All Saints' Day
November 30	National Day
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), and the Prophet's Birthday.

Industries

The major industries are palm-oil processing, cement, sugar, livestock raising, forestry, chemicals, paper, and textiles. An offshore oil field is being developed.

Crops include cassava, yams, maize, sorghum, millet, beans, rice, groundnuts, cotton, sugarcane, coffee, and tobacco.

Languages

French is the official language. The tribal languages of Fon and Yoruba are used in the S region; at least six other tribal dialects are used in the N.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Benin are, as follows:

Territorial Sea	200 miles.
Fisheries or Economic Zone	200 miles.

Search and Rescue

The Port of Cotonou is responsible for coordinating search and rescue operations. A Maritime Rescue Coordination Center (MRCC) is located at Cotonou.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Rue Caporal Bernard Anani, Cotonou.

The mailing address is 01 BP 2012, Cotonou.

U. S. Embassy Benin Home Page
<http://cotonou.usembassy.gov>



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General

Brazil is located in the NE part of South America and borders the Atlantic Ocean. It is bounded on the N by French Guiana, Suriname, Guyana, and Venezuela; on the W by Colombia, Peru, Bolivia, Paraguay, and Argentina; and on the S by Uruguay.

The greater part of the country consists of hilly uplands, plateaus, and low mountains. There is a narrow coastal belt but very little of the land can be considered a plain, except for the area in the upper Amazon Basin.

The Amazon River and its tributaries, which traverse the heavily-wooded N lowlands, form the greatest river system in

the world and provide over 13,700 miles of channels that are safe for navigation. The headwaters of the Amazon drain the Andes from Colombia to Bolivia. The river is 3,500 miles long and rises in Lago Lauricocha, Peru, about 100 miles NNE of Lima.

The coast is about 4,000 miles long and is mostly fronted by low flat beaches. Numerous small rivers reach the shore but are seldom navigable for more than a few miles.

The climate is mostly tropical, but factors such as elevation, distance from the sea, and prevailing winds cause some variation and temperatures are not extreme.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Brazilian authorities have authorized the use of private buoyage, particularly in the access channels to private terminals or yacht clubs. These private aids are not corrected by notice to mariners.

Cautions

Offshore Oil Exploration

Offshore oil exploration is taking place on the continental shelf off the N and E coasts of Brazil. The main areas of exploration are, as follows:

1. The N approaches to the Amazon River.
2. Between Ponta de Itapage (2°51'S., 39°57'W.) and Cabo Calcanhar (5°10'S., 35°29'W.).
3. Between Maceio (9°40'S., 35°40'W.) and Aracaju (11°00'S., 37°02'W.).
4. Off Salvador (13°00'S., 38°30'W.).

5. Off Caravelas (17°45'S., 39°10'W.).
6. Off Vitoria (20°10'S., 40°15'W.).
7. Southeast of Cabo de Sao Tome (22°00'S., 40°59'W.).
8. Between an area SE of Santos (23°57'S., 46°20'W.) and ESE of Sao Francisco do Sul (26°14'S., 48°38'W.).

Within these areas, numerous oil drilling rigs, platforms, and associated structures may be encountered. In addition, vessels should use caution as drilling rigs may also be carrying out operations on the continental shelf outside of the above areas.

Mobile drilling rigs and temporary lighted buoys are not charted; however, their positions may be promulgated from time to time by Brazilian Notice to Mariners.

Light Vessels

Light vessels in Brazil display a secondary light from their sterns, which should be taken into account when passing a light vessel.

Piracy

Acts of piracy and armed robbery occur within Brazilian waters and many of the ports of Brazil.

Whales

Southern Right Whales, a protected species threatened with extinction, approach the S coast of Brazil between Ihla de Bom Abriga (25°07'S., 47°51'W.) and Cabo de Santa Marta Grande (28°3'S., 48°49'W.) from May to November. These animals may be as long as 18m and weigh up to 40 tons. Vessels should exercise due caution when in the vicinity of these whales.

Currency

The official unit of currency is the real, consisting of 100 centavos.

Firing Areas

Firing exercises are promulgated by local Radio Navigational Warnings. The following exercise areas are used by the Brazilian Navy:

1. **Area B-1** (SSE of Ponta Negra)—Naval exercises.—Enclosed by a line joining the following:
 - a. 23°10'00"S, 42°12'30"W.
 - b. 23°10'00"S, 42°45'06"W.
 - c. 23°35'00"S, 42°45'06"W.
 - d. 23°35'00"S, 42°12'30"W.
2. **Area B-2** (S of Cabo Frio)—Naval exercises.—Enclosed by a line joining the following:
 - a. 23°10'00"S, 41°40'12"W.
 - b. 23°10'00"S, 42°12'30"W.
 - c. 23°35'00"S, 42°12'30"W.
 - d. 23°35'00"S, 41°40'12"W.
3. **Area B-3** (S of Cabo Frio)—Naval exercises.—Enclosed by a line joining the following:
 - a. 23°35'00"S, 41°40'12"W.
 - b. 23°35'00"S, 42°12'30"W.
 - c. 24°00'00"S, 42°12'30"W.
 - d. 24°00'00"S, 41°40'12"W.

4. **Area B-4** (SSE of Ponta Negra)—Naval exercises.—Enclosed by a line joining the following:
 - a. 23°35'00"S, 42°12'30"W.
 - b. 23°35'00"S, 42°45'12"W.
 - c. 24°00'00"S, 42°45'12"W.
 - d. 24°00'00"S, 42°12'30"W.

5. **Area C-1** (Saquarema approaches)—Gunnery exercises.—Enclosed by a line joining the following:
 - a. 22°56'12"S, 42°45'06"W.
 - b. 22°56'12"S, 42°12'30"W.
 - c. 23°10'00"S, 42°12'30"W.
 - d. 23°10'00"S, 42°45'06"W.
 Anchorage and fishing are prohibited.

6. **Area C-2** (Cabo Frio)—Gunnery exercises.—Enclosed by a line joining the following:
 - a. 22°45'00"S, 41°58'00"W.
 - b. 22°45'00"S, 41°40'12"W.
 - c. 23°10'00"S, 41°40'12"W.
 - d. 23°10'00"S, 42°12'30"W.
 - e. 22°56'12"S, 42°12'30"W.
 Anchorage and fishing are prohibited.

7. **Area C-3** (E of Cabo Frio)—Gunnery exercises.—Enclosed by a line joining the following:
 - a. 22°45'00"S, 41°08'06"W.
 - c. 22°45'00"S, 41°40'12"W.
 - b. 23°10'00"S, 41°40'12"W.
 - d. 23°10'00"S, 41°08'06"W.
 Anchorage and fishing are prohibited.

8. **Area C-4** (E of Cabo Frio)—Gunnery exercises.—Enclosed by a line joining the following:
 - a. 23°10'00"S, 41°40'12"W.
 - b. 23°10'00"S, 41°08'06"W.
 - c. 23°35'00"S, 41°08'06"W.
 - d. 23°35'00"S, 41°40'12"W.
 Anchorage and fishing are prohibited.

9. **Area C-5** (ESE of Cabo Frio)—Gunnery exercises.—Enclosed by a line joining the following:
 - a. 23°35'00"S, 41°40'12"W.
 - b. 23°35'00"S, 41°08'06"W.
 - c. 24°00'00"S, 41°08'06"W.
 - d. 24°00'00"S, 41°40'12"W.
 Anchorage and fishing are prohibited.

10. **Area Delta** (Ilha de Alcatrazes).—Enclosed by a line joining the following:
 - a. 24°06'00"S, 45°27'00"W.
 - b. 24°01'00"S, 45°35'00"W.
 - c. 24°02'00"S, 45°46'30"W.
 - d. 24°14'00"S, 45°51'00"W.
 - e. 24°15'00"S, 45°36'00"W.

The above area is reserved for surface gunnery exercises by the Brazilian Navy and is considered dangerous for navigating, fishing, and anchoring.

11. **Area D-1** (Barra do Porto do Rio de Janeiro)—Naval exercises.—Enclosed by a line joining the following:

- a. 22°56'12"S, 43°16'42"W.
- b. 22°56'12"S, 42°45'06"W.
- c. 23°12'00"S, 42°45'06"W.
- d. 23°13'30"S, 42°46'30"W.
- e. 23°06'06"S, 42°54'00"W.
- f. 23°13'30"S, 43°01'30"W.
- g. 23°06'06"S, 43°09'12"W.
- h. 23°13'30"S, 43°16'42"W.

12. **Area D-2** (Ilha Maricas)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°12'00"S, 42°45'06"W.
- b. 23°28'12"S, 42°45'06"W.
- c. 23°20'00"S, 42°54'00"W.

13. **Area D-3** (SE of Ilha Rasa)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°27'12"S, 42°46'30"W.
- b. 23°28'12"S, 42°45'06"W.
- c. 23°42'18"S, 42°45'06"W.
- d. 23°34'18"S, 42°54'00"W.

14. **Area D-4** (SSE of Ilha Rasa)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°27'12"S, 43°01'30"W.
- b. 23°42'18"S, 42°45'06"W.
- c. 23°50'00"S, 42°45'06"W.
- d. 23°50'00"S, 43°16'42"W.
- e. 23°41'06"S, 43°16'42"W.

15. **Area D-5** (SSE of Ilha Rasa)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°13'30"S, 43°16'42"W.
- b. 23°20'00"S, 43°09'12"W.
- c. 23°27'12"S, 43°16'42"W.
- d. 23°20'00"S, 43°24'12"W.

16. **Area E-1** (Baia da Ilha Grande)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°00'00"S, 44°00'00"W.
- b. 23°00'00"S, 44°41'00"W.
- c. 23°25'00"S, 44°41'00"W.
- d. 23°25'00"S, 44°00'00"W.

17. **Area E-2** (Ilha Grande)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°00'00"S, 44°00'00"W.
- b. 23°00'00"S, 43°16'42"W.
- c. 23°13'30"S, 43°16'42"W.
- d. 23°25'00"S, 43°29'24"W.
- e. 23°25'00"S, 44°00'00"W.

18. **Area E-3** (Ilha Grande)—Naval exercises.—Enclosed by a line joining the following:

- a. 23°25'00"S, 44°00'00"W.
- b. 23°25'00"S, 43°29'24"W.
- c. 23°20'00"S, 43°24'12"W.
- d. 23°34'18"S, 43°09'12"W.
- e. 23°41'06"S, 43°16'42"W.
- f. 23°50'00"S, 43°16'42"W.

- g. 23°50'00"S, 44°00'00"W.

19. **Area E-4** (Restinga da Marambaia)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 23°50'00"S, 43°16'42"W.
- b. 23°50'00"S, 44°00'00"W.
- c. 24°15'00"S, 44°00'00"W.
- d. 24°15'00"S, 43°16'42"W.

Anchorage and fishing are prohibited.

20. **Area E-5** (S of Restinga da Marambaia)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 23°25'00"S, 44°30'00"W.
- b. 23°25'00"S, 44°00'00"W.
- c. 24°15'00"S, 44°00'00"W.
- d. 24°15'00"S, 44°30'00"W.

21. **Area F-1** (SW of Ilha de Sao Sebastiao)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 23°25'00"S, 45°08'42"W.
- b. 23°25'00"S, 45°04'18"W.
- c. 24°15'00"S, 45°04'18"W.
- d. 24°15'00"S, 45°34'30"W.
- e. 23°45'18"S, 45°34'30"W.

22. **Area F-2** (Approaches to Ilha de Sao Sebastiao)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 23°25'00"S, 45°04'18"W.
- b. 23°25'00"S, 44°30'00"W.
- c. 24°15'00"S, 44°30'00"W.
- d. 24°15'00"S, 45°04'18"W.

23. **Area R-1** (S of Ilha Rasa)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 23°50'00"S, 43°16'42"W.
- b. 23°50'00"S, 42°45'06"W.
- c. 24°15'00"S, 42°45'06"W.
- d. 24°15'00"S, 43°16'42"W.

24. **Area R-2** (S of Ilha Rasa)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 24°15'00"S, 43°16'42"W.
- b. 24°15'00"S, 42°45'06"W.
- c. 24°45'00"S, 42°45'06"W.
- d. 24°45'00"S, 43°16'42"W.

25. **Area S-1** (W of Ilha Rasa)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 24°15'00"S, 44°00'00"W.
- b. 24°15'00"S, 43°16'42"W.
- c. 24°45'00"S, 43°16'42"W.
- d. 24°45'00"S, 44°00'00"W.

26. **Area S-2** (Approaches to Ilha de Sao Sebastiao)—Gunnery exercises.—Enclosed by a line joining the following:

- a. 24°15'00"S, 45°04'18"W.
- b. 24°15'00"S, 44°00'00"W.
- c. 24°45'00"S, 44°00'00"W.
- d. 24°45'00"S, 45°04'18"W.

The following restricted areas are aerial spaces for firing practices and rocket launching, whose limits cover maritime areas:

1. **Aquiraz Area.**—A circular area with a radius of 2.7 miles centered at 3°55'00"S, 38°20'00"W, used for gunnery exercises. The area comes into operation once the NOTAM (Notice to Airmen) is promulgated.

2. **Jangada Area.**—A permanent area enclosed by a line joining positions a, b, c, d, and e, having positions c and d joined by an arc of 10 miles radius centered in position f.

- a. 3°03'00"S, 38°22'00"W.
- b. 3°14'00"S, 37°54'00"W.
- c. 3°36'00"S, 38°21'00"W.
- d. 3°38'00"S, 38°37'00"W.
- e. 3°37'00"S, 38°40'00"W.
- f. 3°43'00"S, 38°28'00"W.

3. **Barreira Area.**—A permanent area for missile launching enclosed by a line joining the following:

- a. 5°54'00"S, 35°11'00"W.
- b. 5°56'00"S, 35°11'00"W.
- c. 5°47'00"S, 34°56'18"W.
- d. 6°03'54"S, 34°57'12"W.

4. **Satelite Area.**—An area for rocket launchings enclosed by a line joining the following:

- a. 4°59'18"S, 34°31'36"W.
- b. 5°28'18"S, 34°09'42"W.
- c. 5°38'48"S, 35°02'30"W.
- d. 5°54'00"S, 35°11'00"W.
- e. 5°56'00"S, 35°11'00"W.
- f. 6°23'36"S, 34°19'54"W.

The area comes into operation once the NOTAM is promulgated.

5. **Pirangi Area.**—An area for firing exercises enclosed by a line joining positions a, b, c, and d, having as an inner limit an arc of 24 miles radius and as an outer limit an arc of 32 miles radius, both centered on position e.

- a. 6°03'54"S, 34°52'42"W.
- b. 5°49'30"S, 34°51'18"W.
- c. 5°47'48"S, 34°43'30"W.
- d. 6°07'00"S, 34°45'18"W.
- e. 5°54'30"S, 35°14'54"W.

The area comes into operation once the NOTAM is promulgated.

6. **Touros Area.**—An area for firing exercises enclosed by a line joining the following:

- a. 5°15'00"S, 34°45'00"W.
- b. 5°07'00"S, 34°38'00"W.
- c. 4°51'00"S, 34°57'00"W.
- d. 5°00'00"S, 35°03'00"W.

The area comes into operation once the NOTAM is promulgated.

7. **Marte Area.**—An area for gunnery exercises enclosed by a line joining the following:

- a. 5°26'00"S, 35°05'00"W.

- b. 5°18'00"S, 34°58'00"W.
- c. 5°01'00"S, 35°06'00"W.
- d. 5°01'00"S, 35°18'00"W.

The area comes into operation once the NOTAM is promulgated.

8. **Restinga Area.**—A circular area for firing exercises, permanent in nature, with a radius of 5.5 miles centered at position a, limited by a straight line joining positions b and c.

- a. 23°04'00"S, 43°52'00"W.
- b. 23°04'00"S, 43°47'20"W.
- c. 23°10'00"S, 43°52'00"W.

9. **Marambaia Area.**—An area for firing exercises enclosed by a line joining the following:

- a. 23°02'00"S, 43°51'00"W.
- b. 23°05'00"S, 43°51'00"W.
- c. 23°02'00"S, 43°35'00"W.
- d. 23°04'00"S, 43°35'00"W.

This is a permanent area under visual meteorological conditions and may come into operation once the NOTAM is promulgated.

10. **Atlantico Area.**—An exercise area enclosed by a line joining the following:

- a. 23°02'00"S, 43°36'00"W.
- b. 23°03'00"S, 43°35'00"W.
- c. 23°37'00"S, 44°07'00"W.
- d. 23°20'00"S, 44°22'00"W.

The area comes into operation once the NOTAM is promulgated.

11. **Moreia Area.**—An area for firing exercises enclosed by a line joining the following:

- a. 23°45'00"S, 42°30'00"W.
- b. 23°45'00"S, 43°10'00"W.
- c. 24°20'00"S, 43°10'00"W.
- d. 24°20'00"S, 42°30'00"W.

The area comes into operation once the NOTAM is promulgated.

12. **Campos Novos Area.**—A circular area with a radius of 1.1 miles centered at 22°42'30"S, 42°00'00"W, used for firing exercises. The area comes into operation once the NOTAM is promulgated.

13. **Oceano Area.**—A permanent area for military aircraft and firing practices enclosed by a line joining the following:

- a. 23°27'00"S, 43°52'00"W.
- b. 23°30'00"S, 43°50'00"W.
- c. 24°08'00"S, 44°35'00"W.
- d. 23°45'00"S, 44°44'00"W.

14. **Pinhal Area.**—An area bound by true bearings of 108° and 123° of Salgado Filho radiobeacon (Porto Alegre), forming a sector whose internal limit is an arc with a radius of 60 miles and whose outer limit is an arc with a radius of 85 miles, both centered at position 29°59'25"S, 51°09'48"W.

Fishing Areas

Fishing craft in large numbers operate at night off the NE coast of Brazil.

Government



Flag of Brazil

Brazil is a federal republic. The country is divided into 26 states and one federal district.

Brazil is governed by a directly-elected President serving a 4-year term. The bicameral National Congress consists of an 81-member Senate (two-thirds are directly elected, with the remaining one-third indirectly elected) serving 8-year terms and a 513-member Chamber of Deputies (directly elected according to proportional representation) serving 4-year terms.

The legal system is based on Roman codes.

The capital is Brasilia.

Holidays

The following holidays are observed:

January 1	New Year's Day
Carnival (the two days before Ash Wednesday)	Variable
Ash Wednesday (half day until 1300)	Variable
Good Friday	Variable
Easter Sunday	Variable
April 21	Martyrdom of Tiradentes
May 1	Labor Day
Corpus Christi	Variable
September 7	Independence Day
October 12	Nossa Senhora Aparecida
November 1	All Saints' Day
November 2	All Souls' Day
November 15	Proclamation of the Republic
December 24	Christmas Eve (half day)

December 25

Christmas Day

December 31

New Year's Eve (half day)

In addition, numerous local holidays (religious and traditional) are observed at the various ports.

Industries

The main industries are agriculture, livestock raising, and forestry.

Other industries include oil and natural gas production, textiles, motor vehicles, rubber, resins, chemicals, fishing, wood products, and food processing.

Minerals mined include quartz crystal, industrial diamonds, chrome ore, mica, zirconium, beryllium, graphite, titanium, thorium, manganese, tungsten, lead, asbestos, bauxite, barites, apatite, tin, silver, gold, and coal.

Crops include coffee, cotton, cocoa, sugarcane, maize, wheat, oranges, bananas, tobacco, rice, castor beans, jute, potatoes, cannabis, cassava, sisal, and soya.

Languages

Portuguese is the official language. Spanish, English, and French are also used.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of Brazil are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone **	200 miles.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims to require permission for more than three warships of the same flag to be in the territorial sea at the same time.

** Military exercises in the EEZ can only be conducted with prior permission.

Pilotage

Pilotage is compulsory for foreign vessels of any gross tonnage and for all Brazilian vessels over 2,000 grt carrying oil, gas, or dangerous cargo.

Regulations

Vessels must fly the Brazilian flag at the foremast in Brazilian waters from 0800 to sunset daily. The customs flag,

blue with a white star, must be flown 24 hours after clearance is granted.

In order for forts, patrol craft, and lookout posts to establish the identity of ships in the approaches to ports, vessels entering or leaving must display their ensign when within 3 miles of the entrance to a port or anchorage and, by day, also display their name (call sign) in flags of the International Code of Signals.

Vessels navigating within 200 miles of the Brazilian coast should maintain a continuous listening watch on VHF channel 16.

Anchoring and fishing are prohibited within 500m of all submarine cables.

The local representative at each port of the Brazilian Maritime Authority may declare the bar to be impassable if the following conditions exist:

1. The sea state at the pilot boarding position is greater than force 6.
2. The sea state in the turning basin is greater than force 4.
3. Visibility is less than 0.25 mile.

In this situation, vessels are prohibited from entering or departing the port.

Vessels carrying hazardous cargo, whether for delivery or in transit, shall forward the following information to the port authority at least 24 hours prior to arrival:

1. The technical name(s) of the hazardous cargo.
2. The IMDG Code classification.
3. The amount of hazardous cargo on board.
4. Destination and ETA of the vessel.

Search and Rescue

A Maritime Rescue Coordination Center (MRCC) and a series of Rescue Coordination Centers (RCC) are located, as follows:

MRCC Brazil (Rio de Janeiro)	mrccbrazil@con.mar.mil.br
RCC South (Rio Grande)	rcsouth@5dn.mar.mil.br
RCC Southeast (Rio de Janeiro)	mrccrio@1dn.mar.mil.br
RCC East (Salvador)	30@2dn.mar.mil.br
RCC Northeast (Natal)	mrccnortheast@3dn.mar.mil.br
RCC North (Belem)	30msg@4dn.mar.mil.br
RCC West (Ladiero)	cc@6dn.mar.mil.br
RCC Northwest (Manaus)	cop@9dn.mar.mil.br

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Naval rescue vessels are located, as follows:

1. Natal (5°47'S., 35°12'W.).
2. Recife (8°03'S., 34°52'W.).
3. Salvador (12°58'S., 38°31'W.).
4. Rio de Janeiro (22°54'S., 43°12'W.).
5. Itajai (26°54'S., 48°40'W.).
6. Rio Grande (32°02'S., 52°05'W.).

Signals

At some Brazilian ports, weather conditions may prevent the pilot from boarding a vessel. In these circumstances, vessels can be guided into port by signals given from the pilot vessel or a watch boat, as follows:

1. Pilot boat.—Signals are given by hand using a red signal flag. The flag is lowered towards the side of the pilot boat which the vessel should steer; if the signal flag is in the center, the vessel's rudder should be amidships. The speed with which the signal flag is displaced indicates the speed with which the rudder should be applied to keep the vessel in the channel.

2. Watch boat.—Signals are given from a mast, by a black sphere, which runs under the yardarm. The position of the sphere in relation to the mast indicates the side the vessel should steer towards; if the sphere is in the center, the vessel's rudder should be amidships. The speed with which the sphere is displaced indicates the speed with which the rudder should be applied to keep the vessel in the channel.

Submarine Operating Areas

Submarines of the Brazilian Navy when engaged in submerged exercises, may, or may not be accompanied by escorting warships. If accompanied, an escorting vessel will display the signal "NE2" from the International Code of Signals, meaning that one or more submarines are exercising in the vicinity.

All other vessels, military and commercial, not taking part in the exercises shall clear the area.

When vessels sight one or two orange buoys on the surface showing flashing or fixed white lights of low intensity, they should investigate, as these buoys could belong to a submarine in distress or in need of help. Sometimes the buoys are unlighted.

Brazilian Tupi class submarines have a marking/transmitting buoy moored to them. The buoy is orange, 86cm in diameter, and 2.47m high, with gray vertical bands, and a white light that flashes 33 times per minute. The buoy has reflectors and a plate with a number and the instructions "Avisar A Autoridade Naval Competente Afundado/Finder Inform Navy Coast Guard Or Police Do Not Secure To Or Touch" inscribed in Portuguese and English. The buoy transmitter operates on 8364kHz and 243MHz for up to 72 hours.

The signal, transmitted in morse, is silence for 120 seconds; the serial number of submarine repeated three times in 30 seconds; SOS repeated six times in 27 seconds; SUBSUNK repeated three times in 36 seconds; and a goniometric signal for 30 seconds. The entire cycle is then repeated.

In addition to the marking/transmitting buoys, a submarine in distress may signal with air or oil bubbles. If vessels sight any of these buoys or receives any of the radio signals mentioned above, they should report this information immediately to the nearest Brazilian Naval vessel or to the first authority with which it can establish contact. Under no circumstances should vessels or boats moor to any of these buoys.

Submarines operating within Brazilian territorial waters and navigating on the surface, may exhibit, in addition to the conventional lights prescribed by the International Rules, an all-round intermittent yellow (amber) light with 90 flashes per

minute. If necessary, they may exhibit only the intermittent light.

The following exercise areas, promulgated by local Radio Navigational Warnings, are used by submarines of the Brazilian Navy:

1. **Area A-1** (SSE of Ilha Rasa)—Enclosed by a line joining the following:
 - a. 23°13'30"S, 43°01'30"W.
 - b. 23°20'00"S, 42°54'00"W.
 - c. 23°27'12"S, 43°01'30"W.
 - d. 23°20'00"S, 43°09'12"W.
2. **Area A-2** (S of Ilha Rasa)—Enclosed by a line joining the following:
 - a. 23°06'06"S, 43°09'12"W.
 - b. 23°13'30"S, 43°01'30"W.
 - c. 23°20'00"S, 43°09'12"W.
 - d. 23°13'30"S, 43°16'42"W.
3. **Area A-3** (SE of Ilha Rasa)—Enclosed by a line joining the following:
 - a. 23°06'06"S, 42°54'00"W.
 - b. 23°13'30"S, 42°46'30"W.
 - c. 23°20'00"S, 42°54'00"W.
 - d. 23°13'30"S, 43°01'30"W.
4. **Area A-4** (S of Ilha Rasa)—Enclosed by a line joining the following:
 - a. 23°20'00"S, 43°09'12"W.
 - b. 23°27'12"S, 43°01'30"W.
 - c. 23°34'18"S, 43°09'12"W.
 - d. 23°27'12"S, 43°16'42"W.
5. **Area A-5** (SSE of Ilha Rasa)—Enclosed by a line joining the following:
 - a. 23°20'00"S, 42°54'00"W.
 - b. 23°27'12"S, 42°46'30"W.
 - c. 23°34'18"S, 42°54'00"W.
 - d. 23°27'12"S, 43°01'30"W.

Time Zone

Brazil is covered by multiple Time Zones, as follows:

1. Eastern states (except No. 2 below)—The Time Zone description is PAPA (+3). Daylight Savings Time (OSCAR (+2)) is maintained from the middle of October through the middle of February of the following year; the exact change-over dates should be obtained from local authorities.
2. Northeastern states and East Para—The Time Zone description is PAPA (+3). Daylight Savings Time is not observed.
3. Western states (except No. 4 below)—The Time Zone description is QUEBEC (+4). Daylight Savings Time (PAPA (+3)) is maintained from the middle of October through the middle of February of the following year; the exact change-over dates should be obtained from local authorities.
4. Rondonia, West Para, Amazonas, and Roraima—The Time Zone description is QUEBEC (+4). Daylight Savings Time is not observed.
5. Acre and Tabatinga City—The Time Zone description is ROMEO (+5). Daylight Savings Time is not observed.
6. Archipelago de Fernando de Noronha and Ilha de Trindade—The Time Zone description is OSCAR (+2). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Avenida das Nacoes, Quadra 801, Lote 3, CEP: 70403-900, Brasilia, Distrito Federal.

The mailing address is Unit 3500, APO AA 34030.

U. S. Embassy Brazil Home Page
<http://brasilia.usembassy.gov>

Vessel Traffic Service

Maritime Traffic Information System (SISTRAM)

Brazil has signed the International Convention for the Safety of Life at Sea and the International Convention on Maritime Search and Rescue (SAR). Therefore, Brazil is required to utilize all available means to help any merchant ship in distress within its own SAR maritime area of responsibility.

To achieve this goal, Brazil uses the Maritime Traffic Information System (SISTRAM), an electronic information system for maritime traffic operated by the Naval Command for the Control of Maritime Traffic (COMCONTRAM). This system tracks all merchant vessels engaged in ocean, coastal, and inland navigation within the Brazilian SAR area.

SISTRAM is compatible with the AMVER system and provides quick identification of nearby vessels which may be capable of assisting ships in distress. In addition, the system can help to render urgent medical assistance.

The greater the number of vessels participating in the program, the greater the effectiveness, the reliability, and the security of the ships themselves. Therefore, all merchant ships are invited to participate in the system. Ships participating in the system add to the safety of life at sea as they can arrive at the scene of a SAR incident before any other means is sent from the shore.

Participation by Brazilian ships is mandatory; however, participation by foreign vessels is voluntary. The participation involves the transmission of standard type messages which are free when sent to COMCONTRAM through the Brazilian Coastal Radio Stations Network (RENEC).

Even though participating in SISTRAM by foreign vessels is voluntary, foreign vessels that are still within the Brazilian territorial sea of 12 miles are still required, under penalty of fines, to report the following information:

1. Position.
2. Course.
3. Speed.
4. Port of departure.
5. Port of destination.
6. ETA.

This information can be submitted through SISTRAM, participation in which is free of charge, provided the report is sent through RENEK.

Participation in SISTRAM begins when a vessel sends a Type 1 message (Sailing Plan) and ends when the vessel sends a Type 4 message (Final Report).

Any nonparticipating vessel may join SISTRAM at any time by sending a Type 1 message. Such a vessel may leave SISTRAM at any time by sending a Type 4 message. Line X should be completed in the Final Report, including the reason for terminating participation.

SISTRAM Area

The SISTRAM area is bounded by a line joining the following positions:

- a. 4°30.5'N, 51°38.2'W.
- b. 8°35.0'N, 48°00.0'W.
- c. 10°00.0'N, 48°00.0'W.
- d. 10°00.0'N, 36°00.0'W.
- e. 7°40.0'N, 35°00.0'W.
- f. 6°22.0'S, 16°00.0'W.
- g. 6°22.0'S, 10°00.0'W.
- h. 34°00.0'S, 10°00.0'W.
- i. 34°00.0'S, 48°27.0'W.
- j. 35°48.0'S, 50°10.0'W.
- k. 34°00.0'S, 53°00.0'W.

Types of Messages

Type 1 (Sailing Plan).—This report provides the basic information required to estimate the ship's position. It can be sent when the ship joins SISTRAM, when departing from a Brazilian port, or when entering the Brazilian SISTRAM area from other ports.

Preferably, the Sailing Plan will be sent as early as possible prior to entering the SAR area or prior to departure from a Brazilian port. In port, it may be sent as a written document.

Type 2 (Position Report).—This report confirms if the ship departed, or if its position is correct per the Sailing Plan. It must be sent within the first 24 hours after departing from a Brazilian port.

Position Reports can be sent whenever the ship is in heavy weather or under other adverse conditions and at any time interval desired.

Type 3 (Deviation Report).—This report provides information for necessary corrections to the existing Sailing Plan. A deviation report should be sent whenever the ship's position deviates 25 miles or more from the original track, the destination port is changed, or other changes occur which result in changing the Sailing Plan.

Type 4 (Final Report).—The Final Report provides the information which terminates participation in SISTRAM. Accordingly, reports should be sent at least 1 hour before entering the destination port or when exiting the SISTRAM area.

Transmission of Messages

Reports addressed to COMCONTRAM are free of charge and can be sent through the following Brazilian Coast Radio Stations:

1. Juncao (PPJ).
2. Rio (PPR).
3. Olinda (PPO).
4. Belem (PPL).
5. Manaus (PPM).

Alternatively, reports addressed to COMCONTRAM RIO can be sent by radiotelex, number 2136931 (reports sent in this way are chargeable).

For further details, vessels may contact COMCONTRAM, as follows:

1. Surface mail address:
Edifício Almirante Tamandare - 6 andar
Praça Barão de Ladario, S/N Centro
Rio de Janeiro - RJ - Brazil CEP: 20091-000

2. Telephone: 55-21-3870-6353
3. Facsimile: 55-21-3870-6341
4. Telex: 38 (021) 2136931/2130933
5. E-mail address: controle@cotram.mar.mil.br
6. Web site: <http://www.comcontram.mar.mil.br>

Reporting Format

Each message consists of a selection of items from the message format list. Message items should be separated by a stroke (/), omitted items by a dash between two strokes (/ - /), and the end of the message by a double stroke (/ /). The system name (SISTRAM), type of message, and date-time group should precede every message. The message format is as follows:

System Name (SISTRAM) / Type of Message (1, 2, 3, or 4) / Date-Time-Month-Year of Transmission /
 A /Call sign/Vessel name/Flag/Type//
 B /Date-time of departure//
 C /Latitude/Longitude//
 E /Current course//
 F /Estimated average speed//
 G /Port of departure/Latitude/Longitude//
 I /Port of destination/Latitude/Longitude//
 K /Port of arrival or exit point/Latitude/Longitude/ETA//
 L /Average speed/Latitude/Longitude/ETA//
 M /Current coastal radio station/Next coastal radio station//
 V /Onboard medical resources//
 X /Amplifying comments (up to 65 characters)//
 Y /Comments//

The following notes apply to the format:

1. **Date-Time.**—All date-time groups start with six (6) digits. The first two (2) digits are the day of the month. The next four (4) digits are hours and minutes using the 24-hour clock. Only Universal Coordinate Time (UTC) (GMT) is to be used. The date-time group (six-digit) must be followed by the capital letter Z. The remainder of the Date-Time group must contain the first three letters of the month and the last two digits of the year.

2. **Type of Vessel.**—Select as appropriate:

- CGO-General cargo
- TKR-Tanker
- BLK-Bulk carrier
- PAS-Passenger
- FSH-Fish
- TUG-Tug
- CTR-Container carrier
- ROL-Roll on/roll off

3. **Latitude/Longitude.**—Latitude is a four-digit group expressed in degrees and minutes and suffixed with "N" for North or "S" for South. Longitude is a five-digit group expressed in degrees and minutes and suffixed with "E" for East or "W" for West.

4. **Route Information.**—The information about the proposed route, in line L, is expressed by three (3) points. When a ship enters the SAR area, show in the first line "L" of the Type 1 message (Sailing Plan) the latitude/longitude of that point and the estimated time of arrival (ETA). In the Type 3 message (Deviation Report), in the first line "L," insert the data about the points where the course changes or of the first

point which confirms deviation (if greater than 25 miles) from the planned route.

5. **Onboard Medical Resources.**—Select as appropriate:

- MD-Physician
- PA-Physician's assistant or Health Supervisor
- NURSE-Nurse
- NONE-None

6. **Optional Data Items.**—These optional data items are useful but are not required. Line E contains the current course as a three-digit group. Line F contains the estimated average speed for the entire passage expressed in knots and tenths of a knot.

7. **Lines X and Y (Reference data items).**—Optional information such as reference data for SISTRAM is entered on line X. Examples include date-time estimates for the next transmission, type of cargo, or INMARSAT number. Line Y

can be used for any other type of communication at the discretion of the merchant vessel.

8. **Course Deviation Data Items.**—This is used to specify changes to the Type 1 message (Sailing Plan). An example is shown below:

I/Salvador/1258S/03831W/051800Z//

In this case, the destination port was changed to Salvador.

Messages

Type 1 (Sailing Plan) consists of items (in order of transmission) A/B/G/I/L/V/M/X/Y.

Type 2 (Position Report) consists of items (in order of transmission) A/B/C/E/F/M/X/Y.

Type 3 (Deviation Report) consists of items (in order of transmission) A/I/L/M/X/Y.

Type 4 (Final Report) consists of items (in order of transmission) A/K/X/Y.



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Government



Flag of the British Indian Ocean Territory

The British Indian Ocean Territory is a dependent territory of the United Kingdom.

The British Indian Ocean Territory is governed by a Commissioner and Administrator appointed by the British monarch.

The legal system is based on the laws of the United Kingdom.

Industries

There is no agricultural or industrial activity on the atolls. Fishing with traps, hand lines, gill nets, and purse seine nets is carried out in the vicinity of the atolls.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

General

The British Indian Ocean Territory, which includes the entire Chagos Archipelago, lies about midway between Indonesia and Africa and is a dependent territory of the United Kingdom. It is composed of a group of five atolls. The numerous coral islands and banks forming the atolls are flat and only attain heights of up to 4m.

Diego Garcia (7°20'S., 72°27'E.) is the largest and southernmost atoll of the group. It is the site of a joint US/UK military facility. There is no permanent population.

The climate is tropical. It is hot, humid, and moderated somewhat by the trade winds.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Antipollution laws are strictly enforced in the area of the atolls.

Maritime Claims

The maritime territorial claims of the British Indian Ocean Territory are, as follows:

Territorial Sea	3 miles.
Fisheries or Economic Zone	200 miles.

Maritime Disputes

The Chagos Archipelago is claimed by both Mauritius and Seychelles.

Search and Rescue

A continuous listening watch is maintained for distress traffic on 282.8 MHz, 243.0 MHz, 121.5 MHz, and VHF channel

16. The British Representative can be contacted by e-mail, as follows:

BritRep@dg.navy.mil

Time Zone

The Time Zone description is FOXTROT (-6). Daylight Savings Time is not observed.

U.S. Embassy

The British Indian Ocean Territory is a dependent territory of the United Kingdom. There is no diplomatic representation.



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General

Burma, also known as Myanmar, is located in Southeast Asia and borders the Andaman Sea and the Bay of Bengal. It is

bounded on the W by Bangladesh and India, on the N by China, and on the E by Laos and Thailand.

The terrain consists of a central lowland ringed by steep rugged highlands.

The climate is mostly tropical monsoon. The summer is rainy, hot, and humid during the Southwest Monsoon (June to September). The winter is mild, with lower humidity during the Northeast Monsoon (December to April).

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the kyat, consisting of 100 pyas.

Government



Flag of Burma

Burma, also known as Myanmar, is a military regime. The country is divided into seven states and seven administrative divisions.

Burma is governed by Chairman of the State Peace and Development Council. The People's Assembly was to have consisted of 485 directly-elected members serving 4-year terms; however, the last election was conducted in 1990 and the People's Assembly was never allowed to convene by the military regime.

The legal system is based on remnants of the British era, but there is no guarantee of fair trials, as the judiciary is not independent of the military regime.

The capital is Rangoon (referred to by the regime as Yangon). It has been reported (2005) the capital is in the process of being moved to Pyinmana, about 375 miles N of Rangoon (Yangon).

Holidays

The following holidays are observed:

January 4	Independence Day
February 12	Union Day
March 2	Peasants' Day
March 27	Armed Forces Day
May 1	May Day
July 19	Martyrs Day
December 25	Christmas Day

Other holidays, which are subject to the appearance of the moon, are Full Moon of Tabaung, Thingyan (Burmese Water Festival), Burmese New Year's Day, Full Moon of Kason (Beginning of Buddhist Lent), Full Moon of Waso, Full Moon of Thadingyut (End of Buddhist Lent), Tazaungdaing, National Day, Karen New Year, Idul Athwaha, and Dewali.

Industries

The principal industry is agriculture. The major crops include rice, sugarcane, groundnuts, oilseed, corn, jute, cotton, and opium.

Other industries include wood processing, textiles, footwear, mining, cement, petroleum refining, pharmaceuticals, fertilizer, fishing, livestock raising, and tourism.

Languages

Burmese is the official language. The use of English is permitted in commerce and education.

Navigational Information

Enroute Volume

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of Burma are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims the following as internal waters:

1. All waters inside a 223-mile baseline closing the Gulf of Martaban.
2. All waters inside straight baselines connecting coastal islands.

** Also considered a Security Zone.

Search and Rescue

Search and rescue operations are coordinated between the Myanmar air force, the Myanmar navy, the Department of Civil Aviation, and the Department of Marine Administration. A Maritime Rescue Coordination Center is located in Rangoon (Yangon). Rangoon (Yangon) Coast Radio Station (XYR) maintains a continuous listening watch on international distress frequencies.

Signals

Storm Signals

The General System, the Brief System, or the Extended System of storm signals may be used in Burmese ports. For further information, see India—Signals—Storm Signals.

Time Zone

The observed Standard Time is 6 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 581 Merchant Street, Rangoon (GPO 521).

The mailing address is Box B, APO AP 96546.

U. S. Embassy Burma Home Page
<http://rangoon.usembassy.gov>



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General

Cameroon, located on the SW coast of Africa, is bounded on the NW by Nigeria; on the E by Chad and the Central African Republic; and on the S by the Republic of Congo, Gabon, and Equatorial Guinea.

The country may be divided into four distinct physical regions, as follows:

1. The S region consists of a coastal plain covered by dense rain forests.
2. The central region consists of the Adamawa Plateau, which is 1,370m high.
3. The N region is a transitional area, with forests giving way to savanna country. In the far N part of this region, the savanna gradually slopes into marshland surrounding Lake Chad.
4. The W region consists of forested mountains up to 4,090m high.

Numerous rivers are located along the coast but are generally encumbered with rapids.

The climate is equatorial, with high temperatures and plentiful rainfall occurring during all seasons. The heaviest rain falls from March to June and from September to November.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Piracy

Mariners are advised to be alert for pirates in the waters off the coast of Cameroon.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government

Cameroon is a republic. The country is divided into ten provinces.

Cameroon is governed by a directly-elected President serving a 7-year term. The Prime Minister and the Council of Ministers are appointed by the President. The National Assembly consists of 180 directly-elected members serving 5-year terms; the President may shorten or lengthen the term. The constitution provides for the formation of an upper chamber, called the Senate, but this has not been created.



Flag of Cameroon

The legal system is based on French civil law and English common law.

The capital is Yaounde.

Holidays

The following holidays are observed:

January 1	New Year's Day/Independence Day
February 11	Youth Day
Feast of the Lamb	Variable
Good Friday	Variable
Holy Saturday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 1	Ascension Day
May 20	National Day
August 15	Assumption of the Blessed Virgin Mary
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan) and Eid Al-Adha (End of Pilgrimage).

In addition, two or more local holidays are usually celebrated in each region. Autonomous provinces may celebrate certain local holidays instead of some of the general holidays.

Industries

The main industries are the production of crude oil, hardwoods, textiles, aluminum, food, and beverages. Other industries include metals, chemicals, cement, timber, fishing, livestock raising, and tourism. Crops include cassava, sorghum, millet, maize, plantains, yams, groundnuts, bananas, palm kernels, cocoa, coffee, rubber, and cotton.

Languages

English and French are the official languages; however, 24 major African dialects are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Cameroon are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines.

Maritime Boundary Disputes

A Cameroon-Nigeria Joint Border Commission has been formed to resolve border differences.

An equidistant settlement of the Cameroon-Equatorial Guinea-Nigeria maritime boundary was reached in 2002, but a dispute between Cameroon and Equatorial Guinea over an island at the mouth of the Riviere Ntem, imprecisely-defined coordinates in the settlement, and the unresolved Bakasi Peninsula allocation contribute to the delay in adopting the settlement.

Search and Rescue

Douala Coast Radio Station (TJC) maintain a continuous listening watch for distress calls on 2182 kHz.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Rue Nachtigal, Yaounde. The mailing addresses are, as follows:

1. Cameroon address—
P.O. Box 817
Yaounde
2. U.S. address—
American Embassy Yaounde
Department of State
Washington DC 20521-2520

U. S. Embassy Cameroon Home Page
<http://yaounde.usembassy.gov>



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General

The Comoros (Iles Comores), a group of four islands, lie W of the N end of Madagascar, in the middle of the N entrance to the Mozambique Channel.

The islands are of volcanic origin and their interiors vary from low hills to steep mountains. The climate is tropical, affected by the Indian monsoon winds from N, with a wet season from November to April.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing

Fishing with traps, hand lines, gill nets, longlines, and purse seine nets, as well as by trolling and trawling, is carried out in the vicinity of all of the islands.

Buoyage

Buoyage around the three westernmost islands cannot be relied upon and navigational lights on the coasts are frequently reported to be extinguished or irregular.

Currency

The official unit of currency is the Comorian franc, consisting of 100 centimes.

Government

Comoros



Flag of the Comoros

The Comoros consists of Grand Comore (Njazidja), Moheli (Mwali), and Anjouan (Nzwani). These three islands, the westernmost of the group, gained independence from France in 1975 after a referendum.

The Comoros is governed by a directly-elected President serving a 5-year term. The Assembly of the Union consists of 30 directly-elected members serving 5-year terms.

The legal system is based on French and Muslim law in a new consolidated code.

The capital is Moroni.

Mayotte

Mayotte (Ile Mayotte), the easternmost island of the group, remains a French dependency (Territorial Collectivity). After referendums in 1976, the island rejected inclusion into the Comoros. The island is attached for administrative purposes to La Reunion.

Holidays

The following holidays are observed in the Comoros:

January 1	New Year's Day
March 16	Anniversary of the Death of ex-President S. M. Cheikh
May 1	Labor Day
May 25	Organization of African Unity Day
May 29	Anniversary of the Death of ex-President A. Solih
July 6	National Independence Day
	Anniversary of the Death of ex-President A. Abdallah
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

The following holidays are observed in Mayotte:

January 1	New Year's Day
Easter Monday	Variable
May 1	Labor Day
Ascension Day	Variable
Whitmonday	Variable
July 14	National Holiday
August 15	Assumption of the Blessed Virgin Mary
November 1	All Saints' Day
November 11	1918 Armistice Day
December 25	Christmas Day

Several Islamic holidays are also observed.

Industries

Agriculture, livestock raising, and fishing are important industries.

The major crops include essential oils for perfume essences, vanilla, copra, cloves, sugar cane, maize, and coffee. Other crops are coconuts, cinnamon, bananas, rice, and sweet potatoes. The main industries are perfume distillation, food processing, chemicals, plastics, textiles, and tourism.

Languages

French and Arabic are the official languages. Comoran, a blend of Swahili and Arabic, is also used.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of the Comoros are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

* Claims archipelagic status.

Maritime Boundary Disputes

Claims the French-administered island of Mayotte.

Regulations

Foreign fishing vessels that have traditionally fished in the waters around the Comoros are permitted to do so, but only at a distance of 6 miles or more from the coasts. Other foreign vessels are prohibited from fishing inside the territorial waters.

Signals

Storm signals denoting the localities of the Comoros and Madagascar threatened by a cyclone are indicated by showing a black cylinder and black cones, displayed from a flagstaff, as described in the accompanying table. The signals are numbered from 1 to 14 to permit rapid transmission by radio.

Signal No.	Signal	Meaning
1	Cylinder above two cones, points upward	Between Antsiranana and Antalaha—E coast of Madagascar
2	Cylinder between two cones, points upward	Between Antalaha and Port Sainte Marie (Ambodifototra)—E coast of Madagascar
3	Cylinder below two cones, points upward	Between Port Sainte Marie (Ambodifototra) and Vatomandry—E coast of Madagascar
4	Cylinder above two cones, points downward	Between Vatomandry and Mananjary—E coast of Madagascar
5	Cylinder between two cones, points downward	Between Mananjary and Farafangana—E coast of Madagascar
6	Cylinder below two cones, points downward	Between Farafangana and Tolanaro (Faradofay)—E coast of Madagascar
7	Cylinder below two cones, with the upper cone point downwards and the lower cone point upwards	Between Antsiranana and Hellville (Andoany)—W coast of Madagascar
8	Cylinder above a cone, points upwards	Between Hellville (Andoany) and Mahajanga (Majunga)—W coast of Madagascar
9	Cylinder below a cone, points upwards	Between Mahajanga (Majunga) and Maintirano—W coast of Madagascar

Signal No.	Signal	Meaning
10	Cylinder above a cone, points downwards	Between Maintirano and Morondava—W coast of Madagascar
11	Cylinder below a cone, points downwards	Between Morondava and Toliari—W coast of Madagascar
12	Cylinder above two cones, with the upper cone point downwards and the lower cone point upwards	Between Toliari and Tolanaro (Faradofay)—S extremity of Madagascar
13	Cylinder between two cones, points towards the cylinder	Comoros
14	Cylinder between two cones, bases towards the cylinder	E part of the Comoros

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

There is no diplomatic representative in the Comoros. The U.S. ambassador to Mauritius is accredited to the Comoros.

The mailing addresses for the U.S. Embassy in Mauritius are, as follows:

1. Mauritius address—
P.O. Box 544
Port Louis
Mauritius
2. U.S. address—
American Embassy Port Louis
Department of State
Washington DC 20521-2450

U. S. Embassy Mauritius Home Page
<http://mauritius.usembassy.gov>



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sons. Elsewhere, depending on position N or S of the Equator, there are well-defined wet and dry seasons. The mountains of the E and S regions have a temperate climate with the highest summits having considerable snowfall.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

It is reported that obsolescent buoyage (Uniform System of Buoyage) may still be encountered in some waters.

Cautions

Piracy

Mariners are advised to be alert for pirates in the waters off the coast of Democratic Republic of Congo.

Currency

The official unit of currency is the Congo franc.

Government

The Democratic Republic of Congo is a dictatorship, presumably undergoing a transition to a representative government. The country is divided into ten provinces and one city.

Under the constitution of 1978, the country was ruled by one political party whose leader and President automatically became the head of state. In 1990, President Mobutu announced a transition to a multi-party state.

General

The Democratic Republic of Congo, formerly known as Zaire, is located in the central part of Africa. It is bounded on the N by the Central African Republic; on the NE by Sudan; on the E by Uganda, Rwanda, and Burundi; on the S by Zambia; on the SW by Angola; and on the NW by the Republic of Congo.

Cabinda, an Angolan enclave, lies on the NW side of the strip that extends to the Atlantic Ocean.

A low plateau extends between the highlands of East Africa and the coastal ranges of West Africa from the basin of the central part of the country. Dense rain forests cover the central lowlands. They are bordered to the SE by the Shaba region, a high plateau, and to the S by the lower lands of the Angola plateau. Rain forests in the E part of the country rise to the mountains bordering the lakes.

The climate is varied, the central region having an equatorial climate with yearlong high temperatures and rain in all sea-



Flag of Democratic Republic of Congo

A state of emergency was declared in 1996 when secessionist forces lead by Laurent-Desire Kabila established a rebel administration and formed a coup. In 1997, Kabila's forces advanced on the capital of Kinshasa, ousted President Mobutu, and assumed power. President Kabila then formed a Government of National Salvation and changed the name of the country to the Democratic Republic of Congo. In 2001, Kabila was assassinated and succeeded by his son.

A 300-member Transnational Constituent Assembly is in the process of writing a new constitution, with plans for elections to be held in 2005.

The legal system is based on Belgian civil law and tribal law. The capital is Kinshasa.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 4	Day of the Martyrs
May 1	Labor Day
May 20	Party Day/Popular Movement Day
June 24	Constitution Day/Fisherman's Day
June 30	Independence Day
August 1	Parent's Day
October 14	Founder's Day/Youth Day
October 27	Naming Day (Three-Z Day)
November 17	Army Day
November 24	New Regime Anniversary
December 25	Christmas Day

Industries

The major industries include mining for copper, zinc, cobalt, gold, diamonds, coal, tin, and silver; crude oil production; forestry; livestock raising; and fishing. Other industries include the production of textiles, footwear, cigarettes, processed foods, and beverages.

The principal crops are coffee, cassava, plantains, sugarcane, maize, peanuts, bananas, yams, rice, palm oil, cotton seed, and various fruits.

Languages

French is the official language, but English is also used. Of the 200 native dialects, four (Swahili, Tshiluba, Kikongo, and Lingala) have been recognized as national languages.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of the Democratic Republic of Congo are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles. *

* To median lines or boundaries.

Search and Rescue

Banana Coast Radio Station (9PA) maintains a continuous listening watch for distress calls on 2182 kHz, 4125 kHz, and VHF channel 16.

Time Zone

The Democratic Republic of Congo is covered by two Time Zones, as follows:

1. Eastern zone—The Time Zone description is BRAVO (-2). Daylight Savings Time is not observed.
2. Western zone—The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 310 Avenue des Aviateurs, Kinshasa-Gombe.

The mailing addresses are, as follows:

1. Congo address—
310 Avenue des Aviateurs
B.P. 697
Kinshasa 1
2. U.S. address—
Unit 31550
APO AE 09828

**U. S. Embassy Democratic Republic of
Congo (Zaire) Home Page**
<http://kinshasa.usembassy.gov>



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General

Congo, known as the Republic of Congo, is located in the W part of Africa. It is bounded on the W by Gabon; on the NW by Cameroon; on the NE by the Central African Republic; on the E and S by Zaire, which is now known as the Democratic Republic of Congo; and on the S by the Angolan province of Cabinda.

The coast, which is 84 miles long, fronts the South Atlantic Ocean and extends between a position lying 10 miles SE of Pointe Banda (3°49'S., 11°01'E.) and a point lying 19 miles SSE of Pointe Noire.

The terrain is partly mountainous, with a dense forest in the N part.

The climate is equatorial, being constantly hot and humid. There is a long dry season, from May to October, in the SW region. The NE region is more humid, with a heavy annual rainfall.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

It is reported that some obsolescent buoyage (Uniform System of Buoyage) may still be encountered.

Cautions

Aids to Navigation

It is reported that lights and navigational aids on the coast of Republic of Congo are unreliable; they may be missing, unlit, or out of position.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government

The Republic of Congo is a republic. The country is divided into nine regions and one commune.

The Republic of Congo is governed by a directly-elected President serving a 7-year term. The President appoints a Council of Ministers. The bicameral Parliaments consists of a 66-member directly-elected Seante serving 5-year terms and a 137-member directly-elected National Assembly serving 5-year terms.

The legal system is based on French civil law and customary law.

The capital is Brazzaville.



Flag of Republic of Congo

Holidays

The following holidays are observed:

January 1	New Year's Day
February 5	President's Day
February 8	Youth Day
March 8	Congolese Women's Day
March 18	Marien Ngoubai Day
May 1	Labor Day
June 22	National People's Army Day
July 31	Congo Revolution Day
August 15	Independence Day (Anniversary of the Revolution)
December 25	Christmas Day
December 31	Congolese Labour Party Foundation Day/Republic Day

Industries

The major industries are crude oil, timber, breweries, cigarettes, sugar, food processing, textiles, chemicals, cement, leather goods, soap, livestock raising, and fishing.

The main minerals mined are lead, zinc, gold, diamonds, iron ore, and potash.

Crops include bananas, cassava, yams, maize, coffee, cocoa, rice, and peanuts.

Languages

French is the official language. Lingala, Kongo, and Monokutuba are the most widely used of several African languages.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The only maritime territorial claim of the Republic of Congo is a territorial sea of 200 miles. It also requires advance permission or notification for innocent passage of warships in the territorial sea.

Regulations

In the event of congestion at the ports, vessels are obligated to work cargo at night and on Sundays. If they refuse to do this, vessels may be relegated to the roadstead anchorages and thereby lose their turn to berth alongside.

As the customs officials are very strict, store lists and crew declarations must be accurate, as the slightest error is penalized and a fine imposed.

Search and Rescue

The Congolese Navy is responsible for coordinating search and rescue operations.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

As of 2001, the U.S. Embassy was co-located at the U.S. Embassy in Democratic Republic of the Congo (Zaire).

The U.S. Embassy in Democratic Republic of the Congo (Zaire) is situated at 310 Avenue des Aviateurs, Kinshasa-Gombe.

The mailing addresses are, as follows:

1. Congo address—
310 Avenue des Aviateurs
B.P. 697
Kinshasa 1
2. U.S. address—
Unit 31550
APO AE 09828

**U. S. Embassy Democratic Republic of
Congo (Zaire) Home Page**
<http://kinshasa.usembassy.gov>



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Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Djibouti franc, consisting of 100 centimes.

Government

Djibouti is a republic. The country is divided into five provinces.

General

Djibouti, located in the NE part of Africa, has a coast, about 195 miles long, and extends for about 48 miles inland. It is bordered on the NW by Eritrea, on the W by Ethiopia, on the SE by Somalia, and on the E by the Gulf of Aden.

The country has a coastal plain and a plateau, separated by central mountains.

The climate is dry, with high temperatures and sparse rainfall.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Djibouti is governed by a directly-elected President serving a 6-year term. The unicameral Parliament consists of a 65-member directly-elected Chamber of Deputies serving 5-year terms.

The legal system is based on French civil law, Islamic law, and traditional practices.

The capital is Djibouti.



Flag of Djibouti

Holidays

The following holidays are observed:

January 1	New Year's Day
May 1	Labor Day
June 27	Independence Day (2 days)
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid-il-Fitr (End of Ramadan), Eid-il-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

The country provides services as both a transit port for the region (free trade zone) and an international transshipment and refueling center. It has few natural resources and little industry.

Scanty rainfall limits crop production. The principal exports are hides, cattle, and coffee (in transit).

Languages

French and Arabic are the official languages. Several Somali and Afar dialects are also widely used.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Djibouti are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Nuclear-powered vessels and vessels transporting nuclear materials or other radioactive substances are required to give notice prior to entering the territorial sea.

Search and Rescue

Djibouti Coast Radio Station (J2A) maintains a continuous listening watch for distress calls on VHF channel 16.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Plateau du Serpent, Boulevard Marechal Joffre, Djibouti.

The mailing address is B.P. 185, Djibouti.

U. S. Embassy Djibouti Home Page
<http://djibouti.usembassy.gov>



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General

Egypt is located in the N part of Africa. It is bordered on the N by the Mediterranean Sea; on the W side by Libya; on the E side by the Gaza Strip, Israel, the Gulf of Aqaba, and the Red Sea; and on the S by Sudan. The Sinai Peninsula, which forms the E part of the country, is bordered on its W by the Gulf of Suez and the Suez Canal and on its E by the Gulf of Aqaba.

A number of Egyptian islands lie within the Gulf of Suez and the Red Sea. These include Jazirat Jubal, Jazirat Shakir, Jazair Jiftun, and Jazirat Zabarjad (St. Johns Island).

The Nile River, in the 960 miles of its course through Egypt, does not receive a single tributary. The First Cataract is near Aswan (24°05'N., 32°52'E.), above which has been constructed the High Dam. Most of the country is an arid desert. Only the

Nile valley, the Nile delta, and some oases are cultivated. Several mountain ranges intersect the desert between the Nile River and the Red Sea. The climate is arid with hot, dry summers and moderate winters.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Oil Exploration

Numerous oil rigs and platforms, most of which are marked by lights and, in some cases, for structures near the traffic lanes, by racons, are situated in the Gulf of Suez.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches.

For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Egyptian pound, consisting of 100 piastres.

Government



Flag of Egypt

Egypt is a republic. The country is divided into 26 governorates.

Egypt is governed by a President, nominated by the People’s Assembly to serve a 6-year term, and confirmed in a national referendum. The unicameral 454-member People’s Assembly, which is the principal legislative body, consists of 444 directly-elected members and ten appointed members, all serving 5-year terms. There is also a 264-member Advisory Council, which functions only in a consultive capacity; it is composed of 176 directly-elected members and 88 appointed members.

The legal system is based on English common law, Islamic law, and the Napoleonic code.

The capital is Cairo.

Holidays

The following holidays are observed:

January 7	Coptic Christmas
April 25	Sinai Liberation Day
Easter Monday	Variable
May 1	Labor Day
June 18	Evacuation Day
July 23	Revolution Day
October 6	Armed Forces Day
October 24	Suez Victory Day
December 23	Victory Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Sham El Nessim (Spring Holiday), and the Prophet’s Birthday.

Industries

Agriculture is the chief industry, with cotton being the most important crop. Other crops include rice, onions, beans, wheat, corn, and barley. Other industries include textiles, chemicals, petroleum products, cement, tourism, and shipping (via the Suez Canal).

Languages

Arabic is the official language. English and French are widely understood by the educated classes.

Mined Areas

Due to dangerous mines, navigation is prohibited within an area on the W side of the Red Sea in an area bounded by the following positions:

- a. 28°38.5'N, 32°51'E.
- b. 28°38.5'N, 32°53'E.
- c. 28°35.0'N, 32°56'E.
- d. 28°33.5'N, 32°55'E.

Navigational Information

Enroute Volumes

Pub. 132, Sailing Directions (Enroute) Eastern Mediterranean.

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Egypt are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

** Also considered a Security Zone. Egypt claims the right to prior permission for entry of nuclear-powered vessels, vessels carrying nuclear materials, and foreign vessels carrying hazardous or other wastes.

Regulations

Navigation

Navigation may be prohibited in certain areas within 20 miles of the Egyptian coast.

Vessels bound for Egyptian ports or navigating off the Egyptian coast are advised to obtain the latest information from their agents.

All vessels should send an ETA at least 24 hours in advance to the port authorities indicating their last port of call, position,

course, and speed. Vessels navigating within 24 miles of the Egyptian coast should contact the port authorities for entry instructions.

Vessels bound for Egyptian ports in the Red Sea should request permission to enter Egyptian waters from the port authorities, through their agents, at least 48 hours before crossing the parallel of 23°N.

Vessels in the Gulf of Suez (Khalij as Suways) should maintain a listening watch on VHF channel 16.

Routes

Traffic Separation Scheme

An extensive IMO-adopted Traffic Separation Scheme (TSS) exists within the Gulf of Suez.

The following TSS-associated rules for vessels navigating in the Gulf of Suez have been approved by the IMO:

1. Ships should take into account that crossing traffic may be encountered in the traffic junction eastward of Ain Sukhna and in the precautionary area off Ras Shukheir, and should be in a high state of readiness to maneuver in these areas.
2. Exceptional care is needed, when overtaking another ship within a lane, not to enter the separation zone or force the overtaken ship to do so.
3. Ships navigating in the Gulf of Suez are requested to keep a continuous listening watch on the Suez Gulf Traffic Information Broadcasts and report any aids to navigation which are malfunctioning or are out of position and that are not already included in the broadcasts.
4. All ocean-going ships should have their radar in effective use by day and at night throughout the passage between Shaker Island and Suez Port as an aid to achieving maximum feasible lane conformity and avoiding risk of collision. Particular care is required for strict adherence to the confines of relevant traffic lanes.
5. Ships proceeding S from Suez should be alert for tankers heading for the SUMED Oil Terminal, situated off Ain Sukhna.
6. Northbound tankers heading for the SUMED Oil Terminal should report their intention of using the traffic junction off Ain Sukhna on the appropriate frequencies.
7. All ships, northbound and southbound, when navigating through the precautionary area off Ras Shukheir or in the vicinity of the July Oil Field should avoid overtaking within the traffic lanes in these areas.
8. All ships, including service and supply craft serving the July Oil Field, the JRamadan Oil Field, and the JMorgan Oil Field, proceeding in and out of the Ras Shukheir Oil Terminal should only cross the southbound and northbound traffic flow through the precautionary area. Within this precautionary area, local rules relating to crossing traffic apply.
9. Tankers leaving the Ras Shukheir Oil Terminal and intending to join the northbound traffic lane should only do so when no through southbound traffic is in the vicinity and should always report their movements to other ships beforehand on VHF.
10. Ships anchored in the designated waiting area for Ras Shukheir should ensure that they are never less than 0.25

mile from the edge of the southbound traffic lane and should pay special regard to their correct light signals for ships at anchor. They should also show their deck lights.

Suez Canal

The Suez Canal, a sea-level waterway, connects Port Said (Bur Said) on the Mediterranean Sea with Suez (As Suways) on the Red Sea. It has a total length of 193.5km (including approaches); it has been reported (2003) that the Suez Canal has been dredged to a depth of 18.9m, with further plans to dredge the canal to a depth of 20.1m by 2006. The canal was originally opened for traffic on November 17, 1869 and nationalized in 1956. It was closed in June 1967 due to military conflict and reopened in June 1975. Regulations, restrictions, and other operational details concerning transit of the Suez Canal are fully described in Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Search and Rescue

The Middle East Search and Rescue Center at the Joint Rescue Coordination Center (JRCC) Cairo is responsible for coordinating search and rescue operations and can be contacted by e-mail, as follows:

jrcc136@afmic.gov.eg

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Signals

Visual storm warning signals used in Egypt are given in the accompanying table.

Egypt—Storm Signals		
Day	Night	Meaning
One black triangle, point up	—	Gale from NW quadrant
One black triangle, point down	—	Gale from SW quadrant
Two black triangle, points up, vertically disposed	—	Gale from NE quadrant
Two black triangles, points down, vertically disposed	—	Gale from SE quadrant
Two black triangle, bases together, vertically disposed	—	Storm
White flag with yellow anchors	Four red lights, vertically disposed	Sea too rough. Pilots cannot go out.

Time Zone

The Time Zone description is BRAVO (-2). Daylight Savings Time (CHARLIE (-3)) is maintained from the last Friday in April through the last Friday in September.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) on the Mediterranean coast of Egypt are, as follows:

1. Western Approaches to Mina Dumyat. (IMO adopted)
2. Eastern Approaches to Mina Dumyat. (IMO adopted)
3. Western Approaches to Bur Said. (IMO adopted)
4. Eastern Approaches to Bur Said. (IMO adopted)

Traffic Separation Schemes (TSS) on the Red Sea coast of Egypt are, as follows:

1. In the Gulf of Suez. (IMO adopted)
2. In the Strait of Tiran. (IMO adopted)

U.S. Embassy

The U.S. Embassy is situated at 5 Latin America Street, Garden City, Cairo.

The mailing address is Unit 64900, Box 15, APO AE 09839-4900.

<p>U. S. Embassy Egypt Home Page http://cairo.usembassy.gov</p>



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General

Equatorial Guinea consists of **Isla de Bioko** (3°30'N., 8°41'E.), formerly known as Macias Nguema Biyogo or Fernando Poo; **Pagalu** (1°26'N., 5°37'E.), formerly known as Annobon; and an enclave on the mainland, formerly known as Rio Muni, which includes the adjacent islets of Corsico, Elobey Grande, and Elobey Chico. The mainland portion of the country is bounded on the N by Cameroon and on the E and S by Gabon.

Much volcanic activity exists on the various islands. In the cultivated areas of the islands, mosquitoes, phalaria flies, and tsetse flies are common up to a height of about 600m. Only sand flies and mosquitoes are encountered in the townships.

Isla de Bioko is the largest island in the Gulf of Guinea. It has two large volcanic formations separated by a valley that bisects the island at its narrowest point. The coast is high in the S part, while lower and more accessible in the N.

The climate is very hot and the island has a very heavy annual rainfall, especially in the S part. The period from April

to October is the wettest, while the period from December to February is relatively dry. The warmest period is from January through May when the average temperature is 26°C. The slightly cooler period is from July to October, when the mean annual temperature is 24°C. The island has recorded extreme temperatures of 16°C and 39°C.

Rio Muni has a coastal plain which gives way to a succession of valleys separated by low hills and spurs of the Crystal Mountains. The terrain is mostly made up of forest and woodland.

The climate is very hot and humid.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Aids to Navigation

It is reported that lights and navigational aids on Isla de Bioko are unreliable.

Piracy

Mariners are advised to be alert for pirates in the waters off the coast of Isla de Bioko.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government



Flag of Equatorial Guinea

Equatorial Guinea is a republic. The country is divided into seven provinces.

Equatorial Guinea is governed by a directly-elected President serving a 7-year term. The President appoints a Council of Ministers. The unicameral House of People's Representatives consists of 80 directly-elected members serving 5-year terms.

The legal system is based on Spanish civil law and tribal customs.

The capital is Malabo, located on Isla de Bioko.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Sunday	Variable
May 1	Labor Day
May 25	Organization of African Unity Day
June 5	President's Birthday
Corpus Christi	Variable
August 3	Armed Forces Day
August 15	Constitution Day
October 12	Independence Day
November 17	St. Isabel of Hungary Day
December 8	Immaculate Conception
December 10	Human Rights Day
December 25	Christmas Day

Other holidays include Victory Day, Declaration of President Vitalicio S.E. Massie Nguema Biyogo Day, and Ascension of Equatorial Guinea's Life President Day.

Industries

Cocoa is the principal crop of Isla de Bioko. Mainland products include petroleum, natural gas, timber, coffee, coconuts, copra, palm oil, and bananas.

Languages

Spanish is the official language. Pidgin English and several local dialects are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Equatorial Guinea are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.

Maritime Boundary Disputes

Creation of a maritime boundary in Corisco Bay with Gabon has been hampered by a dispute over Islote Mbane (0°48'N., 9°22'E.), which has been occupied and administered by Gabon since the 1970s.

An equidistant settlement of the Cameroon-Equatorial Guinea-Nigeria maritime boundary was reached in 2002, but a dispute between Cameroon and Equatorial Guinea over an island at the mouth of the Riviere Ntem, imprecisely-defined coordinates in the settlement, and the unresolved Bakasi Peninsula allocation contribute to the delay in adopting the settlement.

Search and Rescue

The Captain of the Port of Malabo is responsible for coordinating search and rescue operations up to 50 miles off the coast of Equatorial Guinea.

Malabo Port Control maintains a continuous listening watch for distress traffic on VHF channel 16.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy in Equatorial Guinea is located at K-3 Carratera de Aeropuerto, Malabo.

The mailing address is K-3, Carratera de Aeropuerto, Al Lado de Restaurante El Paraíso, Malabo.

U. S. Embassy Equatorial Guinea Home Page
<http://malabo.usembassy.gov>



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General

Eritrea, located in the NE part of Africa, is bounded on the NE by the Red Sea, on the SE by Djibouti, and on the NW by Sudan. The Dahlak Archipelago, consisting of about 300 small and mostly uninhabited islands, lies close off the coast.

Highlands in the W part of the country descend to a desert strip along the coast.

The climate is hot and dry along the desert strip while the highlands are cooler and wetter. The rain is heaviest between June and September except on the coastal desert. Frequent droughts occur.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Navigational lights in Eritrea have been reported to be unreliable.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Oil Exploration

Oil exploration activities are being conducted off the coast of Eritrea.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the nakfa.

Government



Flag of Eritrea

Eritrea obtained its independence from Ethiopia in 1993. The government is still in transition. The country is divided into six regions.

Eritrea is governed by a President who is elected by the unicameral 150-member National Assembly. The President appoints ministers to the State Council.

The legal system is based on a decree of May, 1993.

The capital is Asmara.

An agreement of July, 1993 gives Ethiopia the right to use the ports of Assab and Massawa.

Holidays

The following holidays are observed:

January 1	New Year's Day
March 8	International Women's Day
May 24	National Liberation Day
June 20	Martyr's Day
September 1	Launching of Armed Struggle Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitter (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoorra, and the Prophet's Birthday.

Coptic Christian holidays, which are subject to the appearance of the moon, include Coptic Christmas, Epiphany, Good Friday, Coptic Easter, Coptic New Year, and Meskal (Finding of the True Cross).

Industries

The country is basically an agricultural economy, with 80 per cent of the population living in rural areas. Industries include mining, textiles, oil products, leather and hide products, and food processing. Production has been heavily damaged by 30 years of war and reoccurring droughts.

Languages

Arabic and Tigrinya are the official languages. There are eight other indigenous languages. English is used in secondary education.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The only maritime claim of Eritrea is a territorial sea of 12 miles; jurisdiction is claimed to the limit of the pearl and sedentary fishing grounds.

Regulations

When entering the territorial waters of Eritrea, vessels may be challenged by naval vessels. Vessels should be prepared to identify themselves by their signal letters or by other means.

It is prohibited to stop, anchor, or lower boats while in Eritrean territorial waters.

Vessels arriving at or leaving Eritrean ports are subject to medical inspections.

Search and Rescue

Port Harbormaster offices are responsible for coordinating maritime search and rescue operations.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) off Eritrea are, as follows:

1. In Bab-el-Mandeb. (IMO adopted)
2. West and S of Hanish al Kubra. (IMO adopted)
3. East of Az Zuqar (Jabal Zuqar). (IMO adopted)

U.S. Embassy

The U.S. Embassy is situated at Franklin D. Roosevelt Street, Asmara.

The mailing address is P.O. Box 211, Asmara.

U. S. Embassy Eritrea Home Page
<http://asmara.usembassy.gov>



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The islands have a cool temperate climate, very much affected by strong winds, particularly in the spring.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Falkland Islands pound, consisting of 100 pence.

Government

General

The Falkland Islands (Islas Malvinas), consisting of a group of numerous islands, are a Crown Colony of Great Britain.

East Falkland Island and West Falkland Island, the only two islands of any size, are separated from each other by a sound that varies in width from 2.3 to 12 miles. The group as a whole provides numerous sounds and bays which form excellent harbors. The S part of East Falkland Island is low, but the N part rises to a considerable elevation.

The aspect of the islands is not striking. Ridges of rocky hills, more than 300m high, traverse extensive tracts of treeless moorland, which are bounded by rocky coasts.

West Falkland Island is slightly greater in average elevation than East Falkland Island. Steep cliffs, exposed to the fury of the W seas, front the W sides of this island and the adjoining islets.



Flag of Falkland Islands

The Falkland Islands, a dependency of the United Kingdom, are claimed by Argentina. In April 1982, Argentine forces occupied the islands but the United Nations Security Council voted for their immediate withdrawal. After a military campaign, the Argentine forces surrendered and the United Kingdom regained possession in June 1982.

The colony is administered by an appointed Governor, assisted by an Executive Council (which is the equivalent of a cabinet) and an 8-member elected Legislative Council. A Military Commissioner is responsible for defense and internal security.

The legal system is based on English common law.

Stanley, the principal city, stands at the E side of East Falkland Island and is the location of the seat of government.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
April 21	The Queen's Birthday
First Monday in May	May Day
Last Monday in May	Bank Holiday
June 14	Liberation Day
August 14	Falklands Day
Last Monday in August	Summer Bank Holiday
December 8	Battle Day
December 25	Christmas Day
December 26	Boxing Day

In addition, the first business day after Boxing Day is a public holiday known as Christmas Holiday. A government holiday is celebrated the two business days following Christmas Holiday.

Industries

The principal industries are sheep farming, wool processing, and fishing. Numerous foreign vessels purchase licenses to fish in the adjacent waters. Offshore exploration for oil and gas is being carried out in the vicinity of the islands.

Languages

English is the official language.

Mined Areas

Mines laid in the vicinity of the Falkland Islands during the 1982 conflict have been cleared and hazards to shipping have been marked; however, undiscovered dangers to navigation may still exist. Vessels wishing to enter Falkland Islands' waters are advised to contact the Harbor Master in Stanley.

Dangerous materials and ammunition may be found on many of the shores.

Stanley, Port Fitzroy, Goose Green Settlement, Darwin Settlement, Port Howard, and Fox Bay are areas within which land mines or booby traps are known to exist. There is no evidence that other areas contain land mines or booby traps; however, they may contain unexploded bombs or missiles. Mines have been found on beaches and river banks outside of known mine fields. The seaward approaches to land mine fields are not marked. Special care is required when approaching the beaches and rivers lying adjacent to the above-mentioned areas.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of the Falkland Islands are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles. *
Continental Shelf	Defined by coordinates.

* Only enforced to a distance of 150 miles.

Maritime Boundary Disputes

Argentina claims the United Kingdom-administered Falkland Islands, South Georgia, and the South Sandwich Islands. The United Kingdom rejects sovereignty talks requested by Argentina.

Offshore Islands

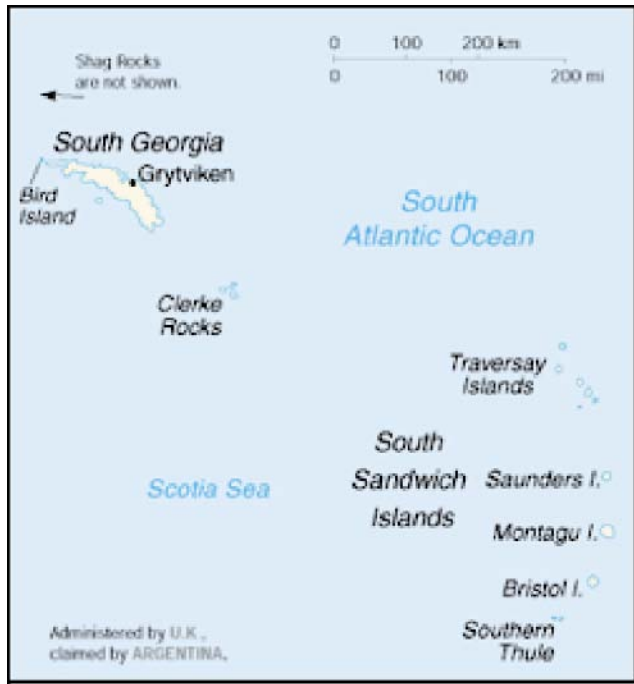
The South Atlantic Territories of South Georgia and the South Sandwich Islands

South Georgia Island, the South Sandwich Islands, Shag Rocks, and Clerke Rocks are all dependencies of the United Kingdom.

South Georgia Island lies 800 miles SE of the Falkland Islands and has an area of about 1,450 square miles. It has no permanent population and is administered by a Commissioner, who resides in the Falkland Islands. A small military garrison is situated at Grytviken, on South Georgia, and a biological station, maintained by the British Antarctic Survey, is reported to be located on Bird Island.

Argentine forces invaded the island on 3 April 1982; however, a British naval task force recovered the territory on 25 April 1992.

The terrain is high and consists of very steep glacier-covered mountains. Mount Paget, the summit, is 2,934m high and saddle-shaped. In summer, the lower hills standing near the coast appear to be light brown in color, being free from snow and, in most cases, covered with grass and moss. There is little flat land and the island, except for patches of sparse grass and



South Georgia and the South Sandwich Islands



Flag of South Georgia and the South Sandwich Islands

moss, is almost entirely barren. The SW side of the island is permanently frozen. The shores, especially at the N side, are deeply indented, but the bays are dangerous during most of the year because of large quantities of loose ice.

The climate is the same as for the Falkland Islands, being cloudy and humid with strong W winds.

The South Sandwich Islands have an area of about 130 square miles and lie 470 miles SE of South Georgia Island. The group consists of a chain of nine uninhabited islands, connected by a low submarine ledge. The islands, which offer little shelter, are mostly volcanic with some showing signs of activity. Zavodovski, the northernmost island, is reported to be in constant eruption.

The climate consists of fog, mist, and snow. The inclement weather and poor visibility render the islands difficult to ap-

proach. During the winter and spring, the group is completely surrounded by pack ice.

The maritime territorial claims of South Georgia and the South Sandwich Islands are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

*South Georgia claims straight baselines.

Regulations

Vessel Reporting System

Vessels are advised to send in their ETA 24 hours in advance. All vessels engaged in transshipment operations in Falkland waters and entering or leaving Berkeley Sound, Port William, or Stanley Harbor are required to report to Stanley Port Control. For further information, see Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Search and Rescue

The Falkland Islands Rescue Coordination Center (FIRCC) is responsible for coordinating search and rescue operations. FIRCC maintains a continuous listening watch on VHF channel 16 and can be contacted by e-mail, as follows:

irics@horizon.co.fk

The Falkland Islands Fisheries Department maintains a continuous listening watch on VHF channel 16 and 2182 kHz, a daylight hours only listening watch on 4066.1 kHz, and can be contacted by e-mail, as follows:

fishops@fisheries.gov.fk

Time Zone

For the Falkland Islands, the Time Zone description is QUEBEC (+4). Daylight Savings Time (PAPA (+3)) is maintained from the first Sunday in September until April 21 of the following year.

For the South Atlantic Territories of South Georgia and the South Sandwich Islands, the Time Zone description is OSCAR (+2). Daylight Savings Time is not observed.

U.S. Embassy

There is no U.S. Embassy in the Falkland Islands or the South Atlantic Territories of South Georgia and the South Sandwich Islands.

These groups are dependencies of the United Kingdom.



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General

French Guiana, located in the N part of South America, is bounded on the W by Suriname and on the S and E by Brazil. It includes the offshore islands of Devil's Island, Royal Island, and St. Joseph Island.

The land rises gradually from a low swampy coastline, 200 miles long, to higher slopes and plains about 50 miles inland. The low mountains are composed entirely of granite and extend in an E/W direction.

The country is well drained, with more than 20 rivers discharging into the ocean. Immense forests of rich timber cover about 90 per cent of the land.

The climate is tropical, hot, and humid with very little seasonal temperature variation.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official monetary unit is the Euro, consisting of 100 cents.

Firing Areas

Rocket firings, associated with the space program at the Centre Spatial de Kourou (5°15'N., 52°45'W.), are conducted off the coast of French Guiana.

Danger areas are promulgated by Radio Navigational Warning Messages.

Government

French Guiana is an overseas department of France.

French Guiana is administered by a directly-elected 19-member General Council and a 31-member Regional Council; members of both bodies serve 6-year terms. It is represented in the French National Assembly and Senate. The French government is represented by an appointed Prefect.

The legal system is based on French civil law.
The capital is Cayenne.



Flag of French Guiana

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 8	World War II Victory Day
Ascension Day	Variable
Whitsunday	Variable
Whitmonday	Variable
June 10	Abolition of Slavery
July 14	Bastille Day
August 15	Assumption Day
October 15	Cayenne Festival
November 1	All Saint's Day
November 2	All Soul's Day
November 11	Armistice Day
December 25	Christmas Day

Industries

The principal crops are rice, manioc, bananas, sugarcane, and pineapples.

Tropical hardwoods are the chief resource of French Guiana. Important industries include construction materials, shrimp processing, forestry products, tourism, and gold mining.

Languages

French is the official language.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of French Guiana are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

Regulations

General

Vessels in transit or stationary within the territorial waters, except when alongside in port, should maintain a continuous listening watch on VHF channel 16 and respond to calls by official vessels and French coast radio stations.

Dangerous cargo is handled during daylight hours only. Vessels must provide an advance notice of 24 hours when carrying dangerous cargo.

Reporting System (SURNV)

The SURNV system is intended to prevent accidental pollution in the territorial water of French Guiana and the waters within 50 miles of the coast of French Guiana.

Covered Vessels.—The regulations are mandatory for the following vessels:

- Vessels carrying hydrocarbons or the gaseous residues of hydrocarbons as specified in Annex 1 of MARPOL 73.
- Non-inert tankers and vessels carrying the following:
 - Noxious liquid substances as specified in Annex 2 of MARPOL 73 and classed in Category A and Category B in Chapter 17 of the IBC Code.
 - Liquefied gas in bulk.
 - Plutonium-239, uranium-233, uranium-235, or uranium-238, or all materials containing them with the exception of ores.
 - Acetaldehyde (UN 1089), ether ethyl (UN 1155), ethyl vinyl ether (UN 1302), monoethylamine (UN 1036), ammonium nitrate (UN 0222), or propylene oxide (UN 1280).
 - Composite organochlorides, such as organochloride pesticides (UN 2761, UN 2762, UN 2995, and UN 2996).
- Vessels carrying the following:
 - Noxious liquid substances as specified in Annex 2 of MARPOL 73 and not listed above.
 - Harmful liquid substances as specified in Annex 3 of MARPOL 73.
 - Dangerous cargo as specified in the International Maritime Code of Dangerous Goods (IMDG), including radioactive materials specified in the INF Code.
 - Dangerous cargo as specified in Chapter 17 of the IBC Code and Chapter 19 of the IGC Code.

SURNV-FRANCE Messages.—All vessels listed in paragraph 1 and paragraph 2 of **Covered Vessels** preparing to pass through or stay in the territorial waters of French Guiana must send a SURNV-FRANCE message to CROSS Antilles-Guyane 6 hours prior to entering the territorial waters of

French Guiana or 6 hours prior to departing from a port or anchorage in French Guiana.

The message covers the entire planned voyage in the territorial waters until departure or until arrival at the destination, even if the vessel's route takes it out of these waters and back in again. If there is a change in the vessel's planned route, or the vessel is unable to maneuver or navigate, the vessel must send a correcting message as soon as possible.

SURNAV-FRANCE messages should be sent to CROSS Antilles-Guyane and prefixed SURNAV-FRANCE using any method available to the vessel. Messages should be sent in the format given in the table below and should also include the following additional information:

1. Intended movements within territorial waters.
2. Current ability to maneuver and navigate.

SURNAV-FRANCE Message	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
HOTEL	1. Date, time UT (GMT), and position of entering territorial waters. * 2. Date, time UT (GMT), and place of departure. * *Whichever is appropriate.
INDIA	Destination.
KILO	1. Date, time UT (GMT), and position of leaving territorial waters. * 2. Date and time UT (GMT), of arrival at destination (port, anchorage, waiting position, deballasting position) within territorial waters. * *Whichever is appropriate.
MIKE	Radio watch maintained.
OSCAR	Draft.
PAPA **	Cargo—type (as defined by MARPOL 73) and quantity.
QUEBEC	Any defects, damage, faults, or restrictions.
UNIFORM	Type of vessel.
XRAY	Other remarks.
ZULU	End of message.
** Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Vessels arriving from outside the European Union.—All vessels listed in paragraph 1, paragraph 2, and paragraph 3 of

Covered Vessels arriving from a port outside the European Union and intending to anchor in territorial waters of French Guiana must send a message when departing from the loading port, or as soon as possible if changing destinations, using any method available to the vessel to CROSS Antilles-Guyane stating either the following information or indicating the authority holding this information in the European Union:

1. Vessel name and call sign.
2. Flag.
3. Draft and loa.
4. Destination port.
5. ETA at destination port, pilot station, or designated anchorage, as requested by the local authority
6. ETD.
7. Planned itinerary.
8. Precise technical names of dangerous or polluting cargo; UN numbers, if necessary; risk classes, as defined by the IMO in accordance with the IMDG Code and the IBC/IGC compendium; and the INF category of the vessel, if necessary.
9. Confirmation that a list, manifesto, or loading diagram held on board that details the dangerous or polluting cargo on board the vessel and the location of it.
10. Number of crew.

Incident/Accident Report.—Vessels of 300 gross tons and over on a commercial voyage and navigating with the limits of the Economic Zone, or when outside the limits of the zone but less than 50 miles from the coast must immediately report the following:

1. Every incident or accident affecting the safety of the vessel (collision, stranding, damage, breakdown or failure, invasion or movement of cargo, or all defects within the hull or damage to the structure).
2. Every incident or accident affecting the safety of navigation (damage likely to affect the vessel's maneuverability or navigation, or every defect affecting the propulsion systems, steering gear, the production of power, or the navigation or communication equipment).
3. Every situation likely to lead to pollution (discharge or risk of discharge of pollutants into the sea).
4. Every slick of pollution and every drifting container seen in the sea.

Messages should be sent to CROSS Antilles-Guyane using any method available to the vessel, in the format given below.

Incident/Accident Report	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
INDIA	Destination and ETA.
MIKE	Radio watch maintained.

Incident/Accident Report	
Designator	Information required
OSCAR	Draft.
PAPA *	Cargo and details of dangerous or pollutant cargo on board.
QUEBEC *	Nature of incident or situation, with damage or problem suffered.
ROMEO *	Description of the pollution caused and of all containers, parcels, or cargo lost overboard or observed drifting and presenting a danger to navigation and/or the environment.
TANGO	Owner's details, charter company, and possible consignees in France.
UNIFORM	Vessel type, characteristic, and tonnage.
WHISKEY	Number of people on board.
XRAY *	Date and time (UT/GMT) of possible call for assistance or towing, possible presence and name of assisting vessel, time (UT/GMT) of contacting a possible assisting vessel, or other information.
YANKEE	Request transmission of report to another system (AMVER, AUSREP, JASREP, MAREP, etc.).
ZULU	End of message.
* Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Listening watch—Throughout the duration of a transit or stay in territorial waters, vessels listed in paragraph 1, paragraph 2, and paragraph 3 of **Covered Vessels** must maintain a continuous listening watch on 2182 kHz, VHF channel 16, and any other frequency they are advised to listen on.

Search and Rescue

Maritime Rescue Coordination Subcenter (MRSC) Cayenne is associated with MRCC Fort-de-France, which is located on

Martinique and is the Centre Regional de Surveillance et de Sauvetage aux Antilles-Guyana (CROSSAG). CROSSAG is responsible for coordinating search and rescue operations in its area of responsibility and maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

MRSC Cayenne can be contacted by e-mail, as follows:

marine.guyana@wanadoo.fr

MRCC Fort de France can be contacted by e-mail, as follows:

fortdefrance.mrcc@equipement.gouv.fr

mrcc.fortdefrance@wanadoo.fr

Signals

Special signals, which may be used in certain ports, are given in the accompanying table. The use of these signals may signify that obstructions may exist in the fairway; vessels must proceed with extreme caution and obey any signals given by the port authorities.

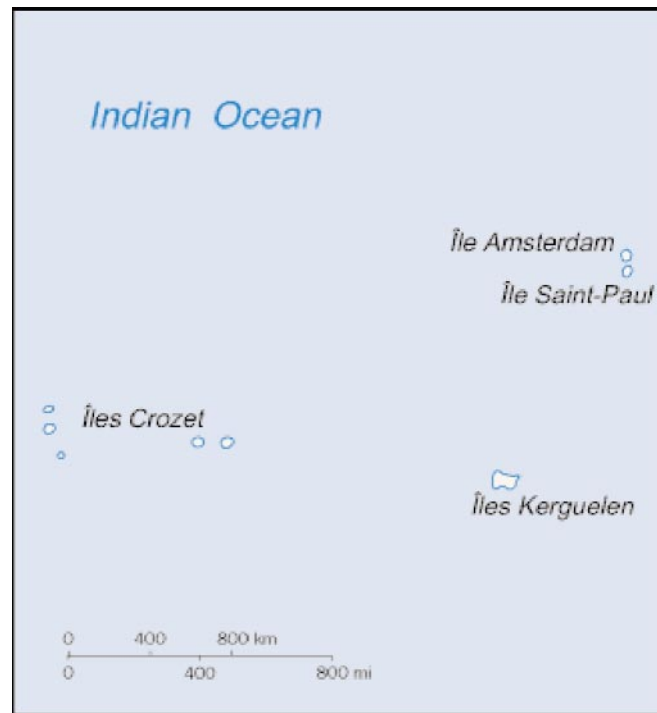
Meaning	Day signal	Night signal
Port closed	Three red balls, vertically disposed	Three red lights, vertically disposed
Port open	The appropriate signal from the International Code of Signals	Three red lights, vertically disposed

Time Zone

The Time Zone description is PAPA (+3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. maintains no resident representation in French Guiana. The country lies within the consular district of the U.S. Consulate General at Fort-de-France, Martinique.



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General

The Crozet Islands (Îles Crozet)

The Crozet Islands are an archipelago consisting of two groups of volcanic islands lying about 50 miles apart. The islands lie between 45°57'S and 46°30'S, and between 50°10'E and 52°20'E.

Île aux Cochons, with an area of 26 square miles, is the main island of the W group. Its summit, 775m high, is always covered with snow.

Île de la Possession, the largest island, lies in the E group. It is mostly formed by a splendid mass of volcanic mountains, the summit of which is 935m high and usually covered with snow.

The winds are often extremity violent in the vicinity of these islands. The sky is usually overcast and the weather cold and bleak.

Amsterdam Island (Île Amsterdam)

Amsterdam Island (37°51'S., 77°33'E.) has an area of 21 square miles and has been declared a sanctuary for all forms of wild life. Antipollution laws are strictly enforced in the vicinity

of this island. The island is of volcanic origin and composed of basaltic lava and ashes. It has a high rugged cone on which stand several old volcanic craters. Some wild cattle, penguins, and seals frequent the W side of the island.

Saint-Paul Island (Île Saint Paul)

Saint-Paul Island (38°43'S., 77°33'E.) has an area of 2 square miles and has been declared a sanctuary for all forms of wildlife.

The island is formed by the above-water part of an extinct volcano; a large section is occupied by a submerged crater. It has sulfurous hot springs and is overrun with rabbits and rats.

Strong W winds and overcast skies predominate for most of the year. Significant E winds blow between December and March. Gales are common. When SW winds blow, violent squalls usually sweep down the sides of the crater.

The Kerguelen Islands (Îles de Kerguelen)

The Kerguelen Islands are an archipelago consisting of over 300 islands, islets, and rocks. The islands, islets, and rocks lie between 48°27'S and 49°58'S, and between 68°25'E and 70°35'E.

Mont Grand Ross, 1,849m high, is the summit of Grand Terre, the main island. It is always covered with snow and glaciers descend down the sides. Because of the rugged and boggy nature of the ground, in addition to the severity of the climate and the absence of trees and wood, the interior of the island is little visited. It is reported that reindeer, trout, and sheep have been acclimatized.

Squalls, descending from the heights with great speed and a deafening roar, quickly transform the surface of the sea near the island into a froth. Even in summer, scarcely a day passes without winds of force 8 or 9 blowing for a few minutes.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Antipollution laws are strictly enforced in the vicinity of Amsterdam Island and Saint-Paul Island.

The NW and W coasts of the Kerguelen Islands have been declared a national park, in which hunting and fishing are forbidden.

Currency

The official unit of currency is the Euro.

Government



Flag of French Southern/Antarctic Territories

All the islands and archipelagos are dependent territories of France.

The territory is administered from France.

The legal system is based on French law.

The Crozet Islands (Iles Crozet)

The seat of administration is situated in Port Alfred, at the head of **Crique du Navire** (46°25'S., 51°52'E.), on Ile de la Possession. It is reported that a permanent scientific station is maintained by the French government at Port Alfred.

Amsterdam Island (Ile Amsterdam)

The seat of administration is situated at Roche Godon, on the NE part of the island. A permanently-inhabited meteorological and scientific station stands at Roche Godon.

The Kerguelen Islands (Iles de Kerguelen)

The seat of administration is situated in **Port aux Francais** (49°21'S., 70°13'E.), on Grand Terre. It is the only permanent and inhabited settlement in the archipelago and is the site of a meteorological and scientific station.

Industries

Economic activity is limited to service French and other fishing fleets, as well as the meteorological and geophysical research stations.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

As a dependent territories of France, the maritime territorial claims of are identical to the maritime territorial claims of France, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

Regulations

Single-Hull Tankers

Single-hull tankers carrying heavy petroleum products are not permitted to enter, leave, or anchor.

Fishing

French regulations prohibit all fishing within the 12-mile zone of territorial waters and the 200-mile economic zone surrounding the Crozet Islands.

French regulations prohibit all fishing within the 12-mile zone of territorial waters surrounding Iles de Kerguelen. All fishing, with the exception of trawling, is prohibited within the 200-mile economic zone. However, trawling is prohibited within the economic zone during the months of March, April, and May and in the SE quadrant of the economic zone, bounded on the N side by 49°30'S and on the W side by 69°00'E, between 15 September and 15 November.

Reporting System (SURNV)

Vessels bound to and from the Crozet Islands, Amsterdam Island, Saint-Paul Island, and the Kerguelan Islands are all subject to the reporting requirements of SURNV.

The SURNV system is intended to prevent accidental pollution in French territorial waters of the South Indian Ocean, hereafter known as the Area, and the waters within 50 miles of the coast of the Area. The Area includes the following:

1. Reunion, including Mayotte and Iles Esparses.
2. The Crozet Islands.
3. Amsterdam Island.
4. Saint-Paul Island.
5. The Kerguelen Islands.

Covered Vessels.—The regulations are mandatory for the following vessels:

1. Vessels carrying hydrocarbons or the gaseous residues of hydrocarbons as specified in Annex 1 of MARPOL 73.
2. Non-inert tankers and vessels carrying the following:
 - a. Noxious liquid substances as specified in Annex 2 of MARPOL 73 and classed in Category A and Category B in Chapter 17 of the IBC Code.
 - b. Liquefied gas in bulk.

c. Plutonium-239, uranium-233, uranium-235, or uranium-238, or all materials containing them with the exception of ores.

d. Acetaldehyde (UN 1089), ether ethyl (UN 1155), ethyl vinyl ether (UN 1302), monoethylamine (UN 1036), ammonium nitrate (UN 0222), or propylene oxide (UN 1280).

e. Composite organochlorides, such as organochloride pesticides (UN 2761, UN 2762, UN 2995, and UN 2996).

3. Vessels carrying the following:

a. Noxious liquid substances as specified in Annex 2 of MARPOL 73 and not listed above.

b. Harmful liquid substances as specified in Annex 3 of MARPOL 73.

c. Dangerous cargo as specified in the International Maritime Code of Dangerous Goods (IMDG), including radioactive materials specified in the INF Code.

d. Dangerous cargo as specified in Chapter 17 of the IBC Code and Chapter 19 of the IGC Code.

SURNAV-FRANCE Messages.—All vessels listed in paragraph 1 and paragraph 2 of **Covered Vessels** preparing to pass through of stay in the territorial waters of the Area must contact CROSSRU 6 hours prior to entering the territorial waters of the Area or 4 hours prior to departing from a port or anchorage in the Area.

SURNAV messages should be addressed to SURNAV CROSSRU and headed RAPPORT SURNAV—CIRCULATION EAUX TERRITORIALES/SIGNALEMENT CARGAISON TRANSPORTEE by telephone, facsimile, telex, e-mail, or INMARSAT-C.. Messages should be sent in the format given in the table below and should also include the following additional information:

1. Intended movements within territorial waters.
2. Current ability to maneuver and navigate.

SURNAV-FRANCE Message	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
HOTEL	1. Date, time UT (GMT), and position of entering territorial waters. * 2. Date, time UT (GMT), and place of departure. * *Whichever is appropriate.
INDIA	Destination.

SURNAV-FRANCE Message	
Designator	Information required
KILO	1. Date, time UT (GMT), and position of leaving territorial waters. * 2. Date and time UT (GMT), of arrival at destination (port, anchorage, waiting position, deballasting position) within territorial waters. * *Whichever is appropriate.
LIMA	Intentions.
MIKE	Radio watch maintained.
OSCAR	Draft.
PAPA **	Cargo—type (as defined by MARPOL 73) and quantity.
QUEBEC	Any defects, damage, faults, or restrictions.
SIERRA	Weather conditions in the area.
TANGO	Notification to authorities relating to dangerous cargo on board.
UNIFORM	Type of vessel, loa, and draft.
WHISKEY	Number of people on board.
XRAY	Other remarks.
ZULU	End of message.
** Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Any subsequent changes to the above information should be reported immediately.

Incident/Accident Report.—Vessels of 300 gross tons and over on a commercial voyage and navigating with the limits of the Economic Zone, or when outside the limits of the zone but less than 50 miles from the coast must immediately report the following:

1. Every incident or accident affecting the safety of the vessel (collision, stranding, damage, breakdown or failure, invasion or movement of cargo, or all defects within the hull or damage to the structure).

2. Every incident or accident affecting the safety of navigation (damage likely to affect the vessel's maneuverability or navigation, or every defect affecting the propulsion systems, steering gear, the production of power, or the navigation or communication equipment).

3. Every situation likely to lead to pollution (discharge or risk of discharge of pollutants into the sea).

4. Every slick of pollution and every drifting container seen in the sea.

Messages should be addressed to CROSSRU, prefixed SURNAV-AVIERES, in the format given below.

Incident/Accident Report	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
INDIA	Destination and ETA.
MIKE	Radio watch maintained.
OSCAR	Draft.
PAPA *	Cargo and details of dangerous or pollutant cargo on board.
QUEBEC *	Nature of incident or situation, with damage or problem suffered.
ROMEO *	Description of the pollution caused and of all containers, parcels, or cargo lost overboard or observed drifting and presenting a danger to navigation and/or the environment.
SIERRA	Weather conditions.
TANGO	Owner's details, charter company, and possible consignees in France.
UNIFORM	Vessel type.
WHISKEY	Number of people on board.
XRAY *	Date and time (UT/GMT) of possible call for assistance or towing, possible presence and name of assisting vessel, time (UT/GMT) of contacting a possible assisting vessel, or other information.
YANKEE	Request transmission of report to another system (AMVER, AUSREP, JASREP, MAREP, etc.).
ZULU	End of message.
* Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Assisting Vessel Report.—Vessels providing assistance to vessels of 300 gross tons and over less than 50 miles from the

coast must immediately contact CROSSRU with a message prefixed SURNAV-AVIERES, with the following information:

Assisting Vessel Report	
Designator	Information required
ALFA	Vessel's name, call sign, MMSI number, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position of assisting vessel.
ECHO	Course of assisting vessel.
FOXTROT	Speed of assisting vessel.
INDIA	Destination and ETA.
MIKE	Available means of communication.
OSCAR	Draft.
PAPA	Cargo of vessel being assisted.
QUEBEC	Damage sustained to vessel being assisted, if known.
TANGO	Owner's details, charter company, and possible consignees of assisting vessel in France.
UNIFORM	Type of assisting vessel.
WHISKEY	Number of people on board.
XRAY	Date and time (UT/GMT), position, weather, name, call sign, flag of vessel, course and speed of vessel involved in the accident, or other information.
YANKEE	Request transmission of report to another system (AMVER, AUSREP, JASREP, MAREP, etc.).
ZULU	End of message.

Listening watch—Vessels must maintain a continuous listening watch, except when alongside, on 2182 kHz, VHF channel 16, and any other frequency they are advised to listen on.

Time Zone

The Time Zone description is ECHO (-5). Daylight Savings Time is not observed

U.S. Embassy

The islands are Overseas Departments of France. There is no diplomatic representation.



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Cautions

Aids to Navigation

It is reported that lights and navigational aids on the coast of Gabon are unreliable; they may be missing, unlit, or out of position.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government

General

Gabon, located on the Equator, is bounded on the N by Equatorial Guinea and Cameroon, on the E and S by the Republic of Congo, and on the W by the Atlantic Ocean.

The country consists of a narrow coastal plain, a hilly interior, and savanna regions in the E and S.

The land is mostly covered with a dense equatorial forest.

The climate is always hot and humid. There is a heavy rainfall. The dry periods are from the middle of May to the middle of September and from the middle of December to the middle of February.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

It is reported that obsolescent buoyage (Uniform System of Buoyage) may still be encountered in some waters.



Flag of Gabon

Gabon is a republic. The country is divided into nine provinces.

Gabon is governed by a directly-elected President serving a 7-year term. The Prime Minister, who is appointed by the President, is the head of government and appoints a Council of Ministers in consultation with the President. The bicameral

legislature consists of a 91-member indirectly-elected Senate and a directly-elected 120-member National Assembly, serving a 5-year term.

The legal system is based on French civil law and customary law.

The capital is Libreville.

Holidays

The following holidays are observed:

January 1	New Year's Day
March 12	Renovation Day
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 6	Martyrs' Day
Whitsunday	Variable
Whitmonday	Variable
August 15	Assumption Day
August 17	Independence Day
November 1	All Saints' Day
December 25	Christmas Day

Eid-il-Fitr (End of Ramadan) and Eid-il-Adha (End of Pilgrimage) are observed Islamic holidays, the dates of which vary from year to year and are subject to the appearance of the moon.

Industries

The major industries are petroleum and natural gas production, timber, mining, and food processing. Other industries include livestock raising, fishing, and tourism.

Minerals include manganese, uranium, gold, iron ore, zinc, and phosphates.

Crops include sugarcane, cassava, plantains, maize, ground-nuts, bananas, palm kernels, cocoa, coffee, and rice.

Languages

French is the official language. Several native dialects are also spoken, with the principal ones being Fang, Myene, Bateke, Bapounou (Eschira), and Bandjabi.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Gabon are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines.

Maritime Boundary Disputes

Creation of a maritime boundary in Corisco Bay with Equatorial Guinea has been hampered by a dispute over Islote Mbane (0°48'N., 9°22'E.), which has been occupied and administered by Gabon since the 1970s.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Boulevard de la Mer, Libreville.

The mailing address is Centre Ville, B.P. 4000, Libreville.

U. S. Embassy Gabon Home Page
<http://libreville.usembassy.gov>



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Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the cedi, consisting of 100 pesewas.

Government

General

Ghana, located on the W coast of Africa, is bounded on the W by the Ivory Coast, on the N by Burkina Faso, and on the E by Togo. The seacoast, about 290 miles long, lies between a position 2.5 miles W of **Newtown** (5°05'N., 3°04'W.) and a point 0.8 mile SW of Lome.

The land is fronted by a low, sandy shore and backed by plains and scrub. In the extreme W and E parts, sand spits enclose large lagoons which are bordered by mangrove forests.

A tropical rain forest belt extends N for 175 miles from a point on the shore near the border with the Ivory Coast. It is broken by several hills and many streams and rivers. This area, known as the Ashanti, produces most of Ghana's cocoa, minerals, and timber.

The country lying to the N of this belt varies from 90 to 390m in elevation and is covered by low bush, parkland savannah, and grassland plains.

The climate ranges from equatorial along the coast to savannah in the N part and is typified by the existence of well-defined dry and wet seasons.



Flag of Ghana

Ghana is a constitutional democracy. The country is divided into ten regions.

Ghana is governed by a directly-elected President who serves a 4-year term. The President appoints a Council of Ministers, subject to approval by the Parliament. The unicameral Parliament consists of 200 directly-elected members serving 4-year terms.

The legal system is based on English common law and customary law.

The capital is Accra.

Holidays

The following holidays are observed:

January 1	New Year's Day
March 6	Independence Day
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	May Day
June 1	Anniversary of the Coup of 1979
July 1	Republic Day
December 7	Framer's Day
December 25	Christmas Day
December 26	Boxing Day
December 31	Revolution Day

Islamic holidays, which are subject to the appearance of the moon, include Eid-il-Fitr (End of Ramadan) and Eid-il-Adha (End of Pilgrimage).

Industries

Cocoa is the most important crop. Coffee, improved types of palm oil, coconuts, and tobacco are being planted on a larger scale. Progress has been made in the planting of clonal rubber in the SW part of the country.

There are large areas of forest land, providing a large export in sawn and log timber.

Oil has been found and produced in commercial quantities.

Natural mineral resources include gold, diamonds, manganese, bauxite, and aluminum. These are almost all exported in their primary state.

Languages

English is the official language. In addition, about 75 native dialects are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Ghana are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles.

Search and Rescue

Rescue Coordination Center (RCC) Accra is located at the main building of the Ghana Ports and Harbor Authority.

Tema Coast Radio Station (9GX) maintains a continuous listening watch on all international distress frequencies.

Time Zone

The Time Zone description is ZULU. Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated Ring Road East, Accra.
The mailing address is P.O. Box 194, Accra.

U. S. Embassy Ghana Home Page
<http://accra.usembassy.gov>



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General

Guyana, located on the NE coast of Latin America, is fronted by the Atlantic Ocean. It is bounded on the E by Suriname, on the W by Venezuela, and on the S and W by Brazil.

The country can be divided roughly into three regions, as follows:

1. A low coastal region, about 250 miles long, which varies in width up to 30 miles and constitutes the agricultural area.
2. An intermediate area, about 100 miles wide, which is composed of slightly higher undulating land and which provides the chief mineral and forest resources

3. A hinterland composed of several mountain ranges and extensive savannahs

Approximately 87 per cent of the land area is covered with forests.

The climate is tropical, with rainy seasons from April to July and November to January. The humidity is high all year, but temperatures are moderated by sea breezes.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Guyana dollar, consisting of 100 cents.

Government



Flag of Guyana

Guyana is a republic. The country is divided into ten regions.

Guyana is governed by a President elected by the National Assembly to a 5-year term. The President appoints the Prime Minister and the Cabinet of Ministers. The National Assembly consists of 65 directly-elected members, under a system of proportional representation, and three appointed members, all serving 5-year terms.

The legal system is based on English common law, with certain admixtures of Roman-Dutch law.

The capital is Georgetown.

Holidays

The following holidays are observed:

January 1	New Year's Day
February 23	Republic Day
Phagwah (Holi)	Variable
Good Friday	Variable
Holy Saturday	Variable
Easter Sunday	Variable
Easter Monday	Variable

May 1	Labor Day
May 5	Indian Heritage Day
May 26	Independence Day
First Monday in July	CARICOM Day
First Monday in August	Emancipation Day/Free-dom Day
Diwali (Deepavali)	Variable
December 25	Christmas Day
December 26	Boxing Day
December 31	Old Year's Night

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), and the Prophet's Birthday.

Industries

The major industries include bauxite mining, alumina production, livestock raising, timber, edible oil processing, and fishing.

Gold, diamonds, manganese, copper, tungsten, nickel, quartz, iron ore, and molybdenum are also mined. Other industries include tourism and the production of textiles and pharmaceuticals. The chief crops are sugar, rice, coffee, cocoa, copra, tobacco, coconut, and several tropical fruits.

Languages

English is the official language. Several Amerindian dialects are also spoken.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of Guyana are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea.

Maritime Boundary Disputes

Guyana and Suriname seek United Nations arbitration to resolve a long-standing dispute over the axis of the territorial sea in potentially oil-rich waters.

Venezuela's claim of all territory W of the River Essequibo has prevented any discussions regarding the maritime boundary between Guyana and Venezuela.

Guyana has expressed its intention to challenge the N limit of Trinidad and Tobago's maritime boundary with Venezuela under the claim that this boundary extends into the territorial waters of Guyana.

Regulations

Dangerous cargo is handled during daylight hours only.

Search and Rescue

The Maritime Corps of the Guyana Defense Force is responsible for coordinating search and rescue operations. A Maritime Rescue Coordination Center is located in Georgetown.

Demerara Coast Radio Station (8RB) maintains a continuous listening watch for distress calls on 2182 kHz.

Time Zone

The Time Zone description is QUEBEC (+4). Daylight Savings Time is not observed.

U.S. Embassy

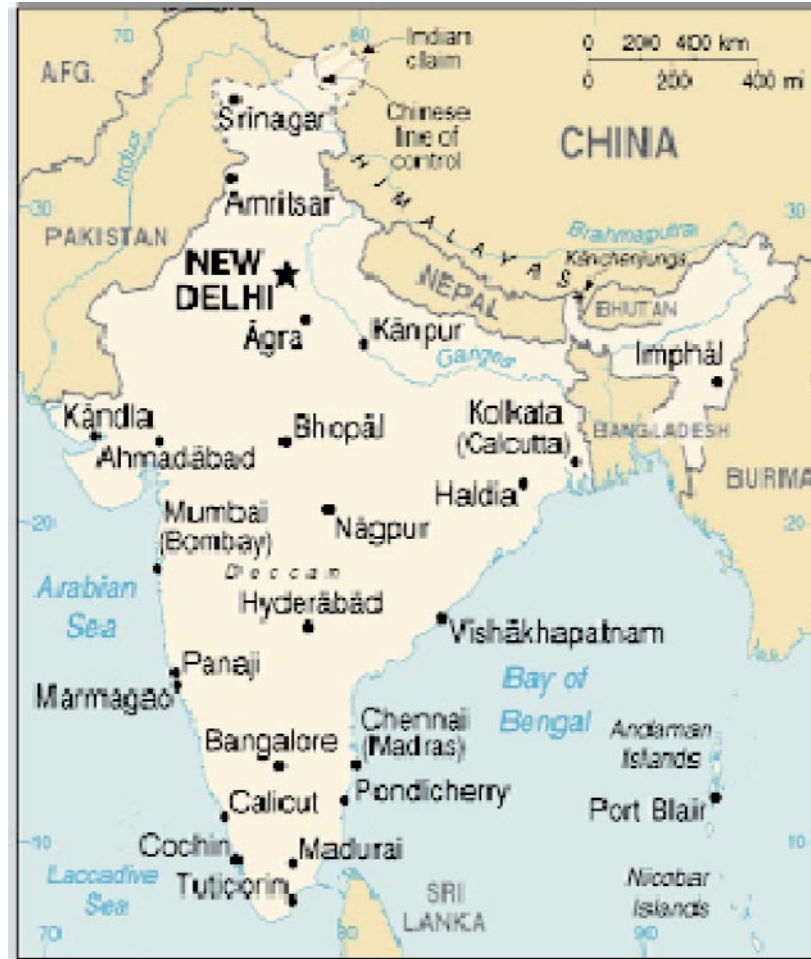
The U.S. Embassy is situated at 100 Young and Duke Streets, Kingston, Georgetown.

The mailing addresses are, as follows:

1. Guyana address—
P.O. Box 10507
Kingston, Georgetown
2. U.S. address—
3170 Georgetown Place
Washington DC 20521-3170

U. S. Embassy Guyana Home Page

<http://georgetown.usembassy.gov>



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General

India is located in the S part of Asia. It is bounded on the W by Pakistan and the Arabian Sea; on the E by Bangladesh, Burma, and the Bay of Bengal; on the N by the disputed territory of Jammu and Kashmir; and on the NE by China, Nepal,

Tibet, and Bhutan. The far E part is almost separated from the rest of the country by Bangladesh.

The terrain varies and includes the mountainous region of the Himalayas in the N, the coastal lowlands, the almost flat plain of the Ganges River in the NE, and a desert in the W.

The climate varies from tropical monsoon in the S part to temperate in the N.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Development Area

An extensive offshore area, which is designated as a Development Area, lies in the approaches to the port of Bombay. Several oil fields and exploration sites lie within this area. In addition, numerous derricks, oil production platforms, wells, single point moorings, and other obstructions hinder safe navigation in this area.

Vessels not associated with oil field operations are strongly advised by the Government of India not to approach within 2.5

miles of any production platforms or structures in any Development Area.

Routes

The Indian authorities have established recommended routes for vessels bound for the port of Bombay in order to aid traffic transiting the approach areas. The local authorities request that vessels remain 1 to 2 miles to starboard of the recommended route tracklines, which may be seen on the chart, consistent with safe navigation and the International Regulations for Preventing Collisions at sea, 1972 (72 COLREGS).

Seismic Surveys

Seismic surveys, in connection with offshore oil and mineral exploration, are conducted in and around Indian waters. Details of these surveys are generally provided to mariners by local radio navigational warning or by Indian Notices to Mariners. It is seldom practicable to publish details of the areas of operation except in general terms; therefore, vessels carrying out seismic surveys may be encountered without prior notice. Seismic survey vessels operate either alone or in company and may tow a sensing device in the form of buoyant cable streamed 1 to 2 miles astern. This sensing device may be on the surface or lie at depths of up to 12m below. An orange buoy, which displays a quick flashing light and carries a radar reflector, is usually attached to the end of the cable.

In the process of the survey, repeated shock waves are created, at any level between the bottom and the surface, by the use of explosive charges, compressed air, mechanical librators, or electrical means. Vessels surveying will usually make way through the water, but sometimes they stop for extended periods.

Seismic survey vessels that are unable to maneuver are required to carry the lights and signals as described in the 72 COLREGS and should be given a wide berth.

If charges are being fired by radio or electrically triggered detonators, survey vessels may suspend radio and radar transmissions in order to avoid accidental firings. The charges may be contained in a variety of cylinders, tubes, or bags which may be marked as "Dangerous." No attempt to recover such items should be made and if any are inadvertently taken aboard in trawls, etc., should be jettisoned immediately.

Locust Reports

See Indian Ocean—Cautions for further information.

Piracy

Attacks on all classes of vessels occur in the waters of India and have been reported at or off many of the ports; they are most prevalent at Cochin. They also occur at a considerable distance offshore.

Currency

The official unit of currency is the rupee, consisting of 100 paise.

Firing Areas

Firing, bombing, and other defense practice exercises take place within a number of areas lying off the coast of India. The

responsibility to avoid accidents rests entirely with the Range Authorities. Therefore, the limits of these areas may not, in all cases, be shown on the charts and their descriptions may not appear in the Sailing Directions (Enroute).

When air to air, air to sea, or ground firing are carried out by aircraft, a large white or red sleeve, a winged target, or a flag is towed by another aircraft moving on a steady course. Generally, warning signals are shown when the targets are stationary, but not when towed targets are used.

All marine craft operating as range-safety craft, target towers, or control launches for remote controlled targets will display for identification purposes, while within or in the vicinity of the danger area, a large red flag at the masthead.

Remote-controlled craft are about 21m in length and carry "Not Under Command" shapes and lights, as well as normal navigation lights. Exercises consisting of surface firing by ships, practice bombing, air to sea firing, and rocket firing may be carried out against these craft or targets towed by them. In such cases, a control craft will keep a visual and a radar watch extending up to about 8 miles and there will be cover from the air over a much greater range to ensure that shipping is not endangered.

Rocket and guided weapons firing exercises are conducted under Clear (Air and Sea) Range procedures. Devices are generally incorporated whereby the missiles may be destroyed should their flights be erratic.

Warning signals, when given, usually consist of red flags by day and red fixed or red flashing lights at night. However, the absence of any such signal cannot be accepted as evidence that a practice area does not exist. Warning signals are shown from shortly before practice commences until it ceases.

Ships and aircraft carrying out night exercises may illuminate with bright red or orange flares.

Vessels may be aware of the existence of practice areas by monitoring the NAVAREA VIII warning messages, the coastal warning messages, local Notice to Mariners, and by observing warning signals.

The Range Authorities are responsible for ensuring that there is no risk of damage from falling shell-splinters, bullets, etc., to any vessel which may be in the practice area.

Rocket Launching Areas

1. Thumba Equatorial Rocket Launching Station.—

Experimental high altitude meteorological/scientific rocket firing will take place periodically from a launching site at Thumba on the W coast of India (8°32'34"N., 76°51'32"E.).

The danger areas are, as follows:

a. Area I.—Within a sector contained in a 5 mile radius from the launching site, between bearings 010° and 120° from seaward.

b. Area II.—Within a sector contained in arcs of 10 and 125 miles radii from the launching site, between bearings 010° and 120° from seaward.

Mariners are advised to keep clear of the above danger areas when firing is due to take place. NAVAREA VIII and coastal radio warnings will be issued sufficiently in advance in accordance with Indian Annual Notices Nos. 12 and 13. No visual warning signals will be displayed. Vessels unavoidably in the danger areas should contact VWB (Bombay) on 500kHz or 8MHz.

2. Balasore Rocket Launching Station.—Experimental high altitude meteorological/scientific rocket firing will take place periodically from a launching site a Balasore on the E coast of India (21°25'30"N., 87°00'10"E.).

The danger areas are, as follows:

a. Area I.—Within a sector contained in a 10 mile radius from the launching site between bearings 280° and 010° from seaward.

b. Area II.—Within a sector contained in arcs of 45 miles and 75 miles radii from the launching site between bearings 305° and 345° from seaward.

Mariners are advised to keep clear of the above danger areas when firing is due to take place. NAVAREA VIII and coastal radio warnings will be issued sufficiently in advance in accordance with Indian Annual Notices Nos. 12 and 13. No visual warning signals will be displayed. Vessels unavoidably in the danger areas should contact VWC (Calcutta) on 500kHz.

3. Sriharikota Satellite/Sounding Rocket Launching Stations.—Experimental high altitude satellite/sounding rocket launching will take place periodically from Sriharikota launching sites on the E coast of India.

a. Satellite Launching Station 1 (13°40'N., 80°14'E.) with danger areas, as follows:

(i) A circular zone of 5 miles radius around the launch pad.

(ii) A sector, with a radius of 16 miles, from the launch pad between the azimuth angles of 115° and 155°.

(iii) A circular zone, with a radius of 22 miles, with its center in position 10°21'N, 84°42'E.

(iv) A circular zone, with a radius of 46 miles, with its center in position 2°45'N, 90°14'E.

(v) A circular zone, with a radius of 88 miles, with its center in position 13°20'S, 104°50'E.

b. Sounding Rocket Launching Station (13°42'N., 80°14'E.) with danger areas, as follows:

(i) Within a circular zone, with radius of 20 miles, with its center in position 13°42'N, 80°29'E (launch pad).

(ii) Within a sector contained in arcs of 45 miles and 95 miles radii from the launch pad, between azimuth angles of 50° and 120° from True North.

(iii) Within a sector contained in arcs of 90 miles and 140 miles radii from the launching pad, between the azimuth angles of 50° and 140° from True North.

(iv) Within a sector contained in arcs of 200 miles and 450 miles from the launch pad, between the azimuth angles of 50° and 140° from True North.

c. PSLV Mission Station 2 (13°44'N., 80°14'E.) with danger areas, as follows:

(i) Within a circular zone, with radius of 10 miles, with its center in position 13°44'N, 80°14'E (launch pad).

(ii) Within a sector contained in arcs of 15 miles and 40 miles radii from the launch pad, between azimuth angles of 130° and 150° from True North.

(iii) Within a sector contained in arcs of 95 miles and 190 miles radii from the launching pad, between the azimuth angles of 130° and 150° from True North.

(iv) Area enclosed by lines joining the following positions:

- 2°00'S, 81°00'E.
- 2°00'S, 83°00'E.
- 8°00'S, 83°00'E.
- 8°00'S, 81°00'E.

(v) Area enclosed by lines joining the following positions:

- 39°00'S, 72°00'E.
- 39°00'S, 77°00'E.
- 44°00'S, 77°00'E.
- 44°00'S, 72°00'E.

d. GSLV Mission Station (13°44'N., 80°14'E.) with danger areas, as follows:

(i) Within a circular zone, with radius of 10 miles, with its center in position 13°44'N, 80°14'E (launch pad).

(ii) Within a sector contained in an arc 15 miles in radius from the launch pad, between azimuth angles of 130° and 150° from True North.

(iii) Within a sector contained in arcs of 95 miles and 190 miles radii from the launching pad, between the azimuth angles of 130° and 150° from True North.

(iv) Area enclosed by lines joining the following positions:

- 10°30'N, 94°30'E.
- 10°30'N, 95°30'E.
- 9°00'N, 95°30'E.
- 9°00'N, 94°30'E.

e. Satellite Launching Station 2 (13°40'N., 80°14'E.) with danger areas, as follows:

(i) Within a circular zone, with radius of 20 miles, with its center in position 13°40'N, 80°14'E (launch pad).

(ii) Within a sector contained in arcs of 20 miles and 37 miles radii from the launch pad, between azimuth angles of 130° and 150° from True North.

(iii) Within a sector contained in arcs of 95 miles and 190 miles radii from the launching pad, between the azimuth angles of 130° and 150° from True North.

(iv) Area enclosed by the following positions:

- 2°00'S, 81°00'E.
- 2°00'S, 83°00'E.
- 8°00'S, 83°00'E.
- 8°00'S, 81°00'E.

(v) Area enclosed by lines joining the following positions:

- 39°00'S, 72°00'E.
- 39°00'S, 77°00'E.
- 44°00'S, 77°00'E.
- 44°00'S, 72°00'E.

Mariners are advised to keep clear of the above danger areas when launching is due to take place. NAVAREA VIII and coast radio warnings will be issued sufficiently in advance in accordance with Indian Annual Notices Nos. 12 and 13. No visual warning signals will be displayed. Vessels unavoidably in the danger areas should contact Madras Coast Radio Station (VWM) or Vishakhapatnam (VWV) on 500 kHz.

Firing Practice and Exercise Areas

1. **Bedi (off Balachiri).**—Area enclosed by lines joining the following positions:

- a. 22°49'00"N, 70°06'00"E.
- b. 22°45'50"N, 70°13'10"E.
- c. 22°38'15"N, 70°09'20"E.
- d. 22°41'10"N, 70°01'50"E.

2. **Nora Island.**—Area of 2 miles around Nora Island (22°31'00"N., 69°20'30"E.).

3. **Dwarka**

(i) Area enclosed by lines joining the following positions:

- a. 22°18'30"N, 68°25'00"E.
- b. 22°06'00"N, 68°49'00"E.
- c. 21°30'45"N, 69°27'00"E.
- d. 21°00'00"N, 69°40'30"E.
- e. 21°30'30"N, 68°48'30"E.

(ii) Rushton Firing Area—Area enclosed by lines joining the following positions:

- a. 22°06'00"N, 68°49'00"E.
- b. 21°30'45"N, 69°27'00"E.
- c. 21°15'00"N, 69°08'00"E.
- d. 21°49'00"N, 68°31'30"E.

4. **Bombay**

(i) General Firing Area A—Area enclosed by lines joining the following positions:

- a. 18°28'N, 70°56'E.
- b. 18°28'N, 71°16'E.
- c. 18°10'N, 71°16'E.
- d. 18°10'N, 70°56'E.

(Reference position "AA" 18°19'N, 71°31'E.)

(ii) Surface Firing Area B—Area enclosed by lines joining the following positions:

- a. 17°48'N, 71°52'E.
- b. 17°48'N, 72°10'E.
- c. 17°28'N, 72°10'E.
- d. 17°28'N, 71°52'E.

(Reference position "BB" 17°38'N, 72°01'E.)

(iii) Middle Ground Firing Area—Area enclosed by lines joining the following positions:

- a. 18°50'00"N, 72°54'30"E.
- b. 18°54'30"N, 72°54'00"E.
- c. 18°55'10"N, 72°50'58"E.
- d. 18°54'39"N, 72°50'35"E.

(iv) Oyster Rock Firing Area—Area enclosed by lines joining the following positions:

- a. 18°48'00"N, 72°52'00"E.
- b. 18°50'00"N, 72°54'30"E.
- c. 18°54'39"N, 72°50'35"E.
- d. 18°54'05"N, 72°49'48"E.

(v) Firing area enclosed by lines joining the following positions:

- a. 18°48'00"N, 72°38'00"E.
- b. 18°52'00"N, 72°46'00"E.
- c. 18°51'00"N, 72°47'00"E.
- d. 18°53'35"N, 72°48'45"E. (Colaba Point)
- e. 19°00'00"N, 72°44'05"E.
- f. 19°00'00"N, 72°38'00"E.

(Position a and position f are to be joined by an arc with position d as the center.)

(vi) Firing area enclosed by lines joining the following positions:

- a. 18°51'50"N, 72°38'20"E.
- b. 19°01'20"N, 72°49'00"E.
- c. 19°05'00"N, 72°47'00"E.
- d. 19°04'00"N, 72°35'00"E.

5. **West coast off Ratnagiri**—Missile Firing Area L—Area enclosed by lines joining the following positions:

- a. 16°53'N, 72°00'E.
- b. 16°32'N, 72°35'E.
- c. 15°43'N, 71°28'E.
- d. 15°22'N, 72°05'E.

(Reference position "LL" 16°05'N, 72°05'E.)

6. **Goa**

(i) General Exercise Area A—Area enclosed by lines joining the following positions:

- a. 15°12'30"N, 73°20'30"E.
- b. 14°54'00"N, 73°28'30"E.
- c. 15°16'30"N, 73°29'30"E.
- d. 14°58'00"N, 73°38'00"E.

(Reference position "AA" 15°05'30"N, 73°29'00"E.)

(ii) Live Firing Area B—Area enclosed by lines joining the following positions:

- a. 15°08'00"N, 73°10'30"E.
- b. 14°50'00"N, 73°19'00"E.
- c. 15°12'30"N, 73°20'30"E.
- d. 14°54'00"N, 73°28'30"E.

(Reference position "BB" 15°01'00"N, 73°19'30"E.)

(iii) Air to air range enclosed by lines joining the following positions:

- a. 15°44'N, 72°54'E.
- b. 15°53'N, 73°12'E.
- c. 14°58'N, 73°38'E.
- d. 14°50'N, 73°19'E.

(iv) Firing area enclosed by lines joining the following positions:

- a. 15°13'N, 73°57'E.
- b. 15°13'N, 73°52'E.
- c. 15°11'N, 73°52'E.
- d. 15°11'N, 73°57'E.

7. **Cochin**

(i) General Exercise Area A—Area enclosed by lines joining the following positions:

- a. 11°00'N, 74°40'E.
- b. 11°00'N, 75°50'E.
- c. 10°10'N, 74°40'E.
- d. 10°10'N, 76°00'E.

(Reference position "AA" 10°35'N, 75°15'E.)

(ii) Live Firing Area B—Area enclosed by lines joining the following positions:

- a. 10°40'N, 75°20'E.
- b. 10°40'N, 75°50'E.
- c. 10°20'N, 75°50'E.
- d. 10°20'N, 75°20'E.

(Reference position "BB" 10°30'N, 75°35'E.)

(iii) Firing sector with (a) as center and enclosing (b) and (c) as following below:

- a. 9°57'20"N, 76°14'10"E.
- b. 10°03'50"N, 76°03'10"E.
- c. 9°44'50"N, 76°15'09"E.

(iv) Area enclosed by lines joining the following positions:

- a. 9°57'30"N, 75°59'30"E.
- b. 9°57'42"N, 76°14'12"E.
- c. 9°44'00"N, 76°17'30"E.
- d. 9°42'30"N, 76°09'30"E.

(v) Live and Practice Underwater Firing Area U—Area enclosed by lines joining the following positions:

- a. 10°40'N, 74°50'E.
- b. 10°40'N, 75°10'E.
- c. 10°20'N, 75°10'E.
- d. 10°20'N, 74°50'E.

(Reference position "UU" 10°30'N, 75°00'E.)

8. Madras

(i) Firing area enclosed by lines joining the following positions:

- a. 12°56'52"N, 80°20'07"E.
- b. 13°04'21"N, 80°17'23"E.
- c. 13°09'45"N, 80°23'52"E.
- d. 13°02'08"N, 80°25'21"E.

(ii) Firing area enclosed by lines joining the following positions:

- a. 12°55'36"N, 80°25'25"E.
- b. 13°07'03"N, 80°17'37"E.
- c. 13°17'40"N, 80°26'51"E.
- d. 13°06'13"N, 80°32'00"E.

(iii) Firing area enclosed by lines joining the following positions:

- a. 12°51'10"N, 80°17'08"E.
- b. 13°04'00"N, 80°17'08"E.
- c. 13°10'03"N, 80°28'08"E.
- d. 12°58'00"N, 80°28'08"E.

(iv) Live and Practice Underwater Firing Area U—Area enclosed by lines joining the following positions:

- a. 12°47'00"N, 80°40'42"E.
- b. 12°47'00"N, 80°48'42"E.
- c. 12°36'48"N, 80°48'42"E.
- d. 12°36'48"N, 80°40'42"E.

(Reference position "UU" 12°42'00"N, 80°44'42"E.)

(v) Rushton Tracking and Firing Area V—Area enclosed by lines joining the following positions:

- a. 13°15'N, 82°20'E.
- b. 13°15'N, 83°00'E.
- c. 13°50'N, 83°00'E.
- d. 13°50'N, 82°20'E.

(Reference position "VV" 13°32'30"N, 82°40'00"E.)

9. **Nizampatnam Bay.**—Weapons Firing Range—Area enclosed by lines joining the following positions:

- a. 14°45'N, 80°08'E.
- b. 15°00'N, 81°30'E.
- c. 16°00'N, 81°10'E.

then along the coast to join back with position a.

10. Vishakhapatnam

(i) General Exercise/Live Firing Area A—Area enclosed by lines joining the following positions:

- a. 17°44'00"N, 84°05'00"E.
- b. 17°44'00"N, 83°48'00"E.
- c. 17°48'08"N, 83°42'00"E.
- d. 17°58'00"N, 83°52'00"E.
- e. 17°58'00"N, 84°19'00"E.

(Reference position "AA" 17°50'18"N, 84°00'00"E.)

(ii) General Exercise/Live Firing Area B—Area enclosed by lines joining the following positions:

- a. 17°10'N, 83°33'E.
- b. 17°09'N, 84°05'E.
- c. 17°25'N, 83°45'E.
- d. 16°54'N, 83°53'E.

(Reference position "BB" 17°09'30"N, 83°49'00"E.)

(iii) Firing Area D—Area enclosed by lines joining the following positions:

- a. 17°28'N, 83°43'E.
- b. 17°28'N, 84°16'E.
- c. 17°43'N, 83°56'E.
- d. 17°12'N, 84°03'E.

(Reference position "DD" 17°28'N, 84°00'E.)

(iv) Firing from Naval Coast Battery Area E—Area enclosed by lines joining the following positions:

- a. 17°42'03"N, 83°18'24"E.
- b. 17°41'30"N, 83°18'07"E.
- c. 17°30'24"N, 83°18'07"E.
- d. 17°34'04"N, 83°30'18"E.
- e. 17°46'04"N, 83°32'04"E.

(Reference position "EE" 17°38'12"N, 83°25'06"E.)

(v) Missile Firing Area M—Area enclosed by lines joining the following positions:

- a. 17°05'N, 83°30'E.
- b. 16°35'N, 83°52'E.
- c. 16°00'N, 84°15'E.
- d. 15°16'N, 83°20'E.
- e. 15°50'N, 82°55'E.
- f. 16°05'N, 82°45'E.

(Reference position "MM" 16°10'30"N, 83°30'00"E.)

11. **Gopalpur**—Area enclosed by lines joining the following positions:

- a. 19°14'24"N, 84°53'42"E.
- b. 19°10'32"N, 85°01'00"E.
- c. 19°01'43"N, 84°56'46"E.
- d. 19°05'05"N, 84°48'25"E.
- e. 19°12'37"N, 84°51'34"E.

12. **Kalaikunda**—Firing area enclosed by lines joining the following positions:

- a. 20°00'N, 88°00'E.
- b. 20°00'N, 89°00'E.
- c. 20°35'N, 89°00'E.
- d. 20°35'N, 88°00'E.

13. **Balasore**—Firing Area B—Area enclosed by lines joining the following positions:

- a. 21°27'30"N, 87°02'00"E.
- b. 21°10'54"N, 87°04'24"E.
- c. 21°09'00"N, 87°21'51"E.

- d. 21°00'18"N, 87°03'00"E.
- e. 20°58'30"N, 86°53'30"E.

14. **Calcutta**—Firing area enclosed by lines joining the following positions:

- a. 22°11'30"N, 88°11'00"E.
- b. 22°11'24"N, 88°08'00"E.
- c. 22°06'00"N, 88°09'30"E.
- d. 22°01'00"N, 88°03'18"E.
- e. 22°07'00"N, 88°10'30"E.
- f. 22°05'00"N, 88°15'00"E.

15. **Port Cornwallis**—Firing Area A—Area enclosed by lines joining the following positions:

- a. 13°10'N, 93°24'E.
- b. 13°10'N, 93°48'E.
- c. 13°30'N, 93°48'E.
- d. 13°30'N, 93°24'E.

(Reference position "AA" 13°20'N, 93°36'E.)

16. **Port Blair**

(i) Firing Area A—Area enclosed by lines joining the following positions:

- a. 11°39'N, 92°49'E.
- b. 11°39'N, 93°03'E.
- c. 11°24'N, 93°03'E.
- d. 11°24'N, 92°49'E.

(Reference position "AA" 11°31'30"N, 92°56'00"E.)

(ii) Firing Area B—Area enclosed by lines joining the following positions:

- a. 11°39'N, 93°03'E.
- b. 11°39'N, 93°18'E.
- c. 11°24'N, 93°18'E.
- d. 11°24'N, 93°03'E.

(Reference position "BB" 11°31'30"N, 93°10'30"E.)

(iii) Missile Firing Area C—Area enclosed by lines joining the following positions:

- a. 11°00'N, 92°50'E.
- b. 10°30'N, 92°50'E.
- c. 10°30'N, 93°40'E.
- d. 10°00'N, 93°40'E.

(Reference position "CC" 10°30'N, 93°15'E.)

(iv) Firing Area D—Area enclosed by lines joining the following positions:

- a. 11°24'N, 92°55'E.
- b. 11°24'N, 93°12'E.
- c. 11°00'N, 93°12'E.
- d. 11°00'N, 92°55'E.

(Reference position "DD" 11°15'N, 93°04'E.)

Note.—The safe flying heights in these areas are, as follows:

1. In areas of firing by aircraft:
 - a. Air to air range—10,000m.
 - b. Air to sea/ground range—7,000m.
2. In gunnery practice areas:
 - a. 4 inch and above—13,000m.
 - b. 40/60 and 20mm—8,000m.
3. In missile firing areas—20,000m.

Government



Flag of India

India is a federal republic with a parliamentary government. The country is divided into 28 states and seven union territories.

Each state is administered by a Governor appointed by the President for a 5-year term. Each union territory is administered by the President through an appointed administrator or Lieutenant-Governor.

The head of the Union is the President, who is elected by an electoral college for a 5-year term, in whom all executive power is vested. The electoral college consists of all the elected members of the Parliament and the State Assemblies.

The Council of Ministers aids and advises the President. The Prime Minister is elected by the members of the majority party.

The bicameral Parliament consists of the Council of States (the upper house) and the House of the People (the lower house). The Council of States consists of not more than 250 members and is a combination of members selected by the elected members of the state and territorial assemblies and up to 12 members appointed by the President. All members serve 6-year terms. The House of the People consists of 542 directly-elected members and three appointed members, all serving 5-year terms.

The legal system is based on English common law.

The capital is New Delhi.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 26	Republic Day
Good Friday	Variable
August 15	Independence Day
October 2	Mahatma Gandhi's Birthday
December 25	Christmas Day (Natal)

Hindu holidays subject to the Hindu solar calendar include Vishnu/Bahag, Mesadi, and Maghi.

Hindu holidays subject to the Hindu lunar calendar include Holi, Sri Rami Navami, Mahavir Jayanthi, Buddha Purnima, Krishna Janamashti (Janmastami), Dussehra (Vijaya Dashmi), Diwali (Deepavali), and Hazrat Ali's Birthday.

There are many smaller Hindu holidays that may be celebrated locally.

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

The major industries include textiles, chemicals, food processing, petroleum and natural gas production, steel, mining, pharmaceuticals, cement, transportation equipment, livestock raising, and fishing.

The main agricultural crops are rice, cereals, tea, oil seed, cotton, jute, and sugarcane.

Languages

Hindi is the official language. English is also very widely used, especially in business, communications, and government. In addition, there are 14 other official languages; numerous dialects are also spoken.

Navigational Information

Enroute Volume

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of India are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims the Gulf of Mannar and Polk Bay as historic waters.

** Also considered a Security Zone.

Maritime Boundary Disputes

A dispute with Bangladesh over New Moore Island (South Talpatty Island) (Purbasha Island) (21°37'N., 89°09'E.), in the Bay of Bengal, has prevented the establishment of a maritime boundary.

A dispute with Pakistan over the terminus of the estuary of Sir Creek (23°38'N., 68°02'E.), at the mouth of the Rann of Kutch, has prevented the establishment of a maritime boundary.

Offshore Islands

The Andaman Islands

The Andaman Islands, a group of about 204 islands and rocks, lie between 10°30'N and 13°40'N, and between 92°11'E and 93°07'E.

The Andaman Islands, together with the Nicobar Islands, are administered as a Union Territory by the President of the Republic of India, acting through a Lieutenant Governor. The seat of administration is situated at Port Blair. The islands are densely wooded and contain valuable hardwood and softwood trees which form the principal export. They are deeply indented and form several deep and spacious harbors.

The observed Standard Time is 5 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.

The Nicobar Islands

The Nicobar Islands, a group of about 19 islands, are a dependency of the Andaman Islands. They lie between 6°45'N and 9°15'N, and between 92°40'E and 93°55'E.

The islands are mostly hilly and undulating. Rivers are found only on the island of Great Nicobar. Severe earthquakes can be expected in this vicinity as the islands lie on a fault line. Coconuts and tobacco are grown.

The observed Standard Time is 5 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.

The Laccadive Islands (Lakshadweep Islands)

The Laccadive Islands (10°00'N., 72°30'E.), meaning the hundred thousand islands, consist of a group of coral atolls lying between 115 and 215 miles off the SW coast of India; several detached shoals and banks lie off the islands.

The islands are divided into two groups, N and S, separated approximately by the parallel of 11°N. The N group is known as the Amindivi Islands. The S group is known as the Cannanore Islands.

Each of these islands lies on extensive coral shoals and no parts of these formations are more than about 4m high. As these islets and islands are low, with coconut trees only 18 to 24m high and not discernible for any great distance, they should be avoided. There are, however, some wide and deep channels between them.

The observed Standard Time is 5 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.

Regulations

Dangerous and Hazardous Cargo

It is required that all vessels above 100 grt carrying dangerous and hazardous cargo transiting through the Indian Exclusive Economic Zone (EEZ) report the details of the cargo carried 48 hours before entering any Indian port or 24 hours prior to entering the Indian EEZ. Vessels sailing from neighboring countries are also required to report on their cargo 24 hours prior to departure.

This information shall be included in line P of the Indian Ship Position and Information Reporting System (INSPIRES) reporting format.

Vessel Age Restrictions

The following restrictions apply to foreign-flagged tankers in Indian waters:

1. Crude oil carriers—Must have segregated ballast tanks and be less than 25 years old.
2. Product tankers—Must have segregated ballast tanks and be less than 25 years old.
3. Chemical tankers—Must be less than 25 years old.

Restricted Area

The union territories of the Andaman Islands and the Nicobar Islands has been declared a Restricted Area by the Government of India. Foreign vessels and foreign nationals are prohibited from visiting the Andaman Islands and the Nicobar Islands without prior permission from the Government of India.

All foreign vessels must contact Port Blair Port Radio at 0230 UTC when entering the Indian Exclusive Economic Zone and provide the following information:

1. Vessel particulars.
2. Position.
3. Course.
4. Speed.
5. Nationality of crew and passengers.

International Ship and Port Facility (ISPS) Code

The ISPS Code applies to ships of 500 grt and over on international voyages and port facilities directly interfacing with these ships. The following information must be submitted at least 24 hours prior to the vessel's arrival:

1. Vessel name.
2. Name and designation of the Ship Security Officer.
3. Validation of the International Ship Security Certificate or the Interim Certificate and the issuing authority.
4. Security level at which the ship is currently operating.
5. Names of the last ten ports-of-call where interface with a port or vessel took place.
6. The security level at which the ship operated at during the ports-of-call listed in 5.
7. Any special or additional security measures taken at the ports-of-call listed in 5.
8. Confirmation that appropriate security measures were maintained during ship-to-ship activity at the ports-of-call listed in 5.
9. Any other security-related information pertaining to ensuring the safety and security of persons, port facilities, ships, and other property?
10. Will the vessel require stores/spares/bunkers/provisions/fresh water during this port call?
11. Will there be a change of crew or passengers during this port call?
12. Are there stowaways on board?

Search and Rescue

The Indian Coast Guard is responsible for coordinating Search and Rescue Operations (SAR) in the Indian Search and Rescue Region (ISRR). For the limits of the ISRR, see Ship

Reporting System—INDSAR. The Indian Coast Guard can be contacted by e-mail, as follows:

vprotect@vsnl.com

The ISRR is divided into three subregions. Each subregion has an assigned Maritime Rescue Coordination Center (MRCC) co-located with a Coast Guard Regional Headquarters (CGRHQ). Each MRCC and CGRHQ combination coordinates search and rescue missions with other agencies via a network of Maritime Rescue Coordination Subcenters (MRSC). Many centers can be reached by e-mail, as follows:

Western Region	
MRCC Mumbai	indsar@vsnl.net
CGRHQ West	opswest@vsnl.net
MRSC Porbandar	comdis_1ad1@sancharnet.in
MRSC Goa	comdis1@email.com
MRSC New Mangalore	cgman@sancharnet.in
MRSC Kochi	kripa@md3.vsnl.net.in
Eastern Region	
MRCC Chennai	cgpoorav@md2.vsnl.net.in
CGRHQ East	isareast@md3.vsnl.net.in
MRSC Tuticorin	cgstuti@sancharnet.in
MRSC Vizag	dhq6@md4vsnl.net.in
	dhqvsp@sify.com
MRSC Paradip	cgdhqpdp@dte.vsnl.net.in
	ctk_cdghqpdp@sancharnet.in
MRSC Haldia	cgdhq8@cal2.vsnl.net.in
MRSC Mandapam	cgsmp@md5.vsnl.net.in
	mdcgmp@ @sancharnet.in
Andaman and Nicobar Region	
MRCC Port Blair	pblmrccpb@sancharnet.in
CGRHQ (A and N)	pblcgrhqan@sancharnet.in
MRSC Diglipur	—
MRSC Campbell Bay	—

Rescue craft are stationed at Aguada Bay.

Ship Reporting System—INSPIRES

The Indian Ship Position and Information Reporting System (INSPIRES) covers the sea area within the limits defined by the following:

- a. The India-Pakistan border at the coast.
- b. 12°00'N, 63°00'E.
- c. The African coast at 12°00'N.
- d. The African coast at 10°30'S.
- e. 10°30'S, 55°00'E.
- f. 30°00'S, 55°00'E.
- g. 30°00'S, 95°00'E and N to the coast.

The Indian Ship Position and Information Reporting System (INSPIRES) is mandatory for all Indian merchant vessels, including coastal and fishing vessels, of more than 300 grt. Other vessels within the reporting area are encouraged to participate in the system.

The purpose of the system is to provide data for SAR operations, vessel traffic management, weather forecasting, and the prevention and containment of marine pollution.

Vessels participating in the system should send regular reports through selected radio stations.

There are four types of messages, each containing a selection of the items listed in the Message Format in the accompanying table, as follows:

1. The Sailing Plan (SP) should be sent just prior to sailing or as soon as possible after leaving from a port within the reporting area, or when the vessel enters the area.
2. A Position Report (PR) should be sent every day according to the accompanying table.
3. A Deviation Report (DR) should be sent when the vessel's position varies significantly from the position that would have been predicted from previous reports, when changing the reported route, or as decided by the Master.
4. A Final Report (FR) should be sent on arrival at the destination or when leaving the reporting area.

Brief reports on cyclones, deep depressions, defect and damage to the participating vessel, and marine pollution may be sent at the discretion of the Master.

The first line of every message should always state the INSPIRES/message type (SP, PR, DR, FR, or title in full for other reports). Subsequent lines should start with the line identifier; the line identifier and other data items on a line should be separated by "/" and lines should be terminated by "/".

Message Format.—The line identifiers listed in the accompanying table should be used when preparing an INSPIRES message

INSPIRES messages will be accepted free of charge by Indian Naval Communication Centers (COMCEN) Mumbai (Bombay) (VTF) and Vizag (Vishakhapatnam) (VTO). On establishing contact, vessels are requested to forward their working frequencies.

Reports sent through Mumbai (Bombay) Radio (VWB) and Chennai (Madras) Radio (VWM) are chargeable at present but are likely to be made free in the near future. Vessels are advised to use telex through their agent for SP reports. Vessels fitted with WT are requested to assist vessels fitted with RT only to relay PR reports.

INSPIRES Position Report Schedule		
Longitude of vessel	Latitude of vessel	Time Schedule UT (GMT)
West of 80°E	0°-10°N	0400-0455
	10°N-20°N	0500-0655
	N of 20°N	0700-0755
	0°-30°S	0400-0455
East of 80°E	0°-10°N	0300-0355
	10°N-20°N	0500-0555
	N of 20°N	0600-0655
	0°-30°S	0400-0455

Position Reports must be received within 6 hours of the scheduled times. A list of vessels holding overdue reports will be broadcast daily at 1400 UT(GMT) by Mumbai (Bombay) Naval Radio (VTG) for vessels W of 80°E and by Vishakhapatnam Naval Radio (VTO) for vessels E of 80°E. Vessels listed in these broadcasts must send their reports immediately to COMCEN.

INSPIRES Message Format					
Identifier	Content	SP	PR	DR	FR
A/	Vessel's name/Call sign//	X	X	X	X
B/	Time (UT (GMT))//—(date and time of report 6 digits, day of month 2 digits, and hour and minutes is a 4 digits)	X	X	X	X
C/	Lat/Long//—(latitude is 4-digit group in degrees and minutes with N or S; longitude is 4-digit group in degrees and minutes E)	X ¹	X ²	X ²	X ²
D/	Position//—(true bearing is 3 digits; distance in miles is 2 digits from clearly identified stated landmark)				
E/	Course//—(true heading is a 3-digit group)	X	X	X ³	X ⁴
F/	Speed//—(knots and tenths of knots e.g. 155=15.5)	X	X	X ³	X ⁴
G/	Port of departure//—(name of last port of call)	X	X		
H/	Time/Position of entry into the system//—(time as expressed in B; position as expressed in C or D)	X ¹	X		
I/	Destination/ETA//—(port and ETA as expressed in B)	X	X		

INSPIRES Message Format					
Identifier	Content	SP	PR	DR	FR
J/	Pilot carried//—(state whether deep sea or local pilot is on board)				
K/	Time/point of exit from system//—(time as expressed in B; position as expressed in C or D)				X ⁴
L/	Route//—(position of each turn point should be given as expressed in C, together with type of intended track between e. g. RL=Rhumb Line, GC=Great Circle or Coast {in this case ETA of passing significant points expressed as expressed in B should be given})	X	X	X ³	X ⁴
M/	Radio communications//—(state full name of stations and frequencies guarded)	X	X		
N/	Time of next report//—(as expressed in B)	X	X	X ³	
O/	Draft//—(in meters and centimeters expressed as 4 digits)	X	X		
P/	Cargo//—(brief details of any dangerous or hazardous cargo—See Note 1 below.)	X ⁵	X ⁵		
Q/	Defects or damage//—(brief details of any defects, damage, or other limitations)			X ³	
R/	Pollution//—(brief details of type of pollution and position as in C or D)				
S/	Weather//—(brief details of cyclonic conditions only)				
T/	Vessel's agent//—(name and particulars)	I	I	I	I
U/	Vessel size/type//—(length, beam in meters, grt, and type)	I	I	I	I
V/	Medical personnel//—(doctor, physician's assistant, nurse, or no medic)	X	X		
W/	Number of persons on board//	X	X		
X/	Remarks//—(any other information—brief details)				
Key to Symbols: X—Required information. X ¹ —Required information when entering the area. Either item C or D may be used. X ² —Either item C or D may be used. X ³ —Include if appropriate. X ⁴ —Required information when leaving the area. X ⁵ —Reports on dangerous and hazardous cargo shall be made in accordance with the list below: 1 Correct technical name(s) of cargo. 2 UN number(s). 3 IMO hazard class(es). 4 Name of consignee/consignor and manufacturer of cargo. 5 Types of packages, including identification, make(s), or whether in portable tank, vehicle, or packaged in vehicle freight container or other portable tank unit. 6 Quantity and likely condition of the cargo. 7 Details of arms and ammunition being carried on board.					

Key to Symbols (continued):

I—Must be included by all Indian vessels. Other vessels may include these items in the Sailing Plan (SP) at their discretion.

Note 1.—Dangerous and hazardous cargo shall include the following:

1. Cargo classified in the International Maritime Dangerous Goods (IMDG) Code.
2. Substances classified in Chapter 17 of the IBC Code (dangerous bulk chemicals) and Chapter 19 of the IGC Code (liquefied gasses in bulk).
3. Oil as identified in MARPOL Annex I.
4. Noxious liquid substances as defined in MARPOL Annex II.
5. Harmful substances as defined in MARPOL Annex III.
6. Radioactive material as specified in the INF Code for the safe carriage of irradiated nuclear fuel, plutonium, and high level radioactive wastes in flasks.

Note 2.—The International Code of Signals should be used to send messages when language problems exist.

Ship Reporting System—INDSAR

The India Ship Reporting System for SAR (INDSAR) is a voluntary system designed to contribute to the safety of life at sea. It is designed to be used by foreign-flag vessels over 300 gross tons operating or transiting in the Indian Search and Rescue Region (ISRR). The ISRR consists of the waters adjoining the Indian coast within the limits defined by the following:

- a. 21°00'N, 68°15'E.
- b. 12°00'N, 63°00'E.
- c. 12°00'N, 60°00'E.
- d. 6°00'S, 60°00'E.
- e. 6°00'S, 68°00'E.
- f. 0°00', 68°00'E.
- g. 8°00'N, 73°00'E.
- h. 6°10'N, 78°00'E.
- i. 10°00'N, 80°00'E.
- j. 10°00'N, 82°00'E.
- k. 6°00'N, 92°00'E.
- l. 6°00'N, 97°32'E.

The objective of INDSAR is to contribute to the safety of life at sea by:

1. Limiting the time between the loss of a vessel and the initiation of SAR action, in cases where no distress signal is sent out.
2. Limiting the search area for a rescue action.
3. Providing up-to-date information on shipping resources available in the area in the event of a SAR incident.

INDSAR is supplementary to INSPIRES and is an advanced computerized system operated and maintained by the Indian

Coast Guard through the Maritime Rescue Coordination Center in Mumbai. Participation in INDSAR is voluntary and vessels will not incur any charges, if the INDSAR report is sent to MRCC Mumbai through NMARSAT- C using code 43, or additional responsibilities other than those that already exist under SOLAS 74 and SAR 79.

The efficiency of INDSAR depends on the number of vessels regularly participating in the system. The more vessels maintained in the computerized plot, the greater the chance that a vessel will be identified near the position of distress. Since INDSAR will identify the most suitable vessel(s) to respond to a vessel in distress, MRCC Mumbai can release other vessels to continue their voyage.

The following actions are taken during a vessel's participation in INDSAR:

1. Upon departure from an Indian port or upon entering the ISSR area from overseas, masters are required to send a Sailing Plan (SP) or an Entry Report (ENR) to MRCC Mumbai by INMARSAT- C on code 43.
2. A computerized plot of the vessel's position will be maintained by the Indian Coast Guard through MRCC Mumbai.
3. Masters are required to send a Position Report (PR) each day at a convenient time chosen by the vessel. The maximum time between any two reports is not to exceed 24 hours. All dates and times in INDSAR reports are to be in UTC.
4. A Final Report (FR) or an Exit Report (EXR) is to be sent on arrival at the destination or on departure from the INDSAR area.

INDSAR Message Format

Identifier	Content	SP	ENR	PR	DR	FR	EXR
A/	Vessel's name/Call sign//	X	X	X	X	X	X
B/	Time (UT (GMT))//—(date and time of report 6 digits, day of month 2 digits, and hour and minutes is a 4 digits)	X	X	X	X		
C/	Lat/Long//—(latitude is 4-digit group in degrees and minutes with N or S; longitude is 4-digit group in degrees and minutes E)	X	X	X	X		
E/	Course//—(true heading is a 3-digit group)	X	X	X	X		
F/	Speed//—(knots and tenths of knots e.g. 15.5=15.5)	X	X	X	X		

INDSAR Message Format							
Identifier	Content	SP	ENR	PR	DR	FR	EXR
G/	Port of departure/(name of last port of call)	X	X				
I/	Destination/ETA/(port and ETA as expressed in B)	X	X	R	X ¹		X
K/	Time/point of exit from system/(time as expressed in B; position as expressed in C)					X	
L/	Route/(position of each turn point should be given as expressed in C, together with type of intended track between e. g. RL=Rhumb Line, GC=Great Circle or Coast {in this case ETA of passing significant points expressed as expressed in B should be given})	O	O		X ²		
M/	Radio communications/(state full name of stations and frequencies guarded)	X	X	X	O		
T/	Vessel's agent/(name and particulars)	I	I	I	I	I	I
U/	Vessel size/type/(length, beam in meters, grt, and type)	I	I	I	I	I	I
V/	Medical personnel/(doctor, physician's assistant, nurse, or no medic)	O	O				
X/	Remarks/(other information; brief details)	O	O	O	O	O	O
Z/	EOR/	X	X	X	X	X	X

Key to Symbols:
X—Required information
X¹—Required information if destination or route changes. This line is always strongly recommended, even when not required.
X²—Required information if destination or route changes.
I—Must be included by all Indian vessels. Other vessels may include these items in the Sailing Plan (SP) at their discretion.
O—Optional information.
R—Recommended information.
Note.—The International Code of Signals should be used to send messages when language problems exist.

There are six types of messages, each containing a selection of the items listed in the Message Format in the accompanying table, as follows:

1. **Sailing Plan (SP).**—This report contains the complete routing information for the vessel and should be sent a few hours before departure, upon departure, or within a few hours after departure from a port within the limits of the ISRR. It must contain enough information to predict the vessel's actual position within 25 miles at any time during the voyage.

2. **Entry Report (ENR).**—This report contains the complete routing information for the vessel and should be sent a few hours before entry, upon entry, or within a few hours after entry into the limits of the ISRR from overseas. It must contain enough information to predict the vessel's actual position within 25 miles at any time during the voyage.

3. **Position Report (PR).**—This report should be sent within 24 hours of departing a port within the limits of the ISRR or when entering the limits of the ISRR from overseas; it should then be sent at least once every 24 hours thereafter. The destination should be included, at least in the first few reports, in case INDSAR has not received the SP or ENR information.

4. **Deviation Report (DR).**—This report should be sent whenever any voyage information changes which could affect INDSAR's ability to accurately predict the vessel's position. Changes in course and speed due to weather, change in destination, diverting to evacuate a sick or injured crewman, diverting to assist another vessel, or any other deviation from the original SP or ENR should be reported as soon as possible.

5. **Final Report (FR).**—This report should be sent upon arrival at the port of destination. This report terminates the vessel's voyage in the INDSAR computer.

6. **Exit Report (EXR).**—This report should be sent upon exiting the ISRR. This report terminates the vessel's voyage in the INDSAR computer.

If the vessel is unable to pass a PR, FR, or EXR through normal methods, the vessel should attempt to pass the message through another vessel, through a harbor authority, or through another shore authority, as appropriate.

Format of messages.—The first line begins with INDSAR, followed by a slash (/), the report type (SP, ENR, etc.), and ends with a double slash (/). Each remaining line begins with a specified letter, followed by a slash (/), to identify the line type. The remainder of each line contains one or more data fields

separated by single slashes (/). Each line ends with a double slash (/). All reports end with a Z (end of report) line.

Note.—All reports are to be prefixed INDSAR and can be transmitted to MRCC Mumbai by the following:

1. Telephone: +91-22-24376133
2. Fax: +91-22-24316558
3. INMARSAT-C: 441907210
4. INMARSAT-M: 641901610
5. E-mail: indsar@vsnl.net

Reports can be sent to MRCC Mumbai via INMARSAT Code 43 through LES Arvi or using any MRCC/MRSC listed in the beginning of this section (Search and Rescue).

Ship Reporting System—ISLEREP

Description.—The Island (M-SAR) Reporting System (ISLEREP) was instituted to enhance navigational safety in and around the waters of the Andaman Islands and the Nicobar Islands (A&N), located on the E side of the Bay of Bengal, and the Laccadive Islands (Lakshadweep Islands) and Minicoy Island (L&M), in the Arabian Sea of the SW coast of India. The purpose of the system is to minimize the risk of a maritime accident and consequential pollution and damage to the marine environment and to respond quickly in the event of any safety or pollution incident.

The ISLEREP Area is the area within 20 miles of the A&N coasts and within 20 miles of the K&M coasts.

Participation.—The following vessels are required to participate in this reporting system:

1. All vessels with a length of 50m and over.
2. All oil tankers, regardless of length. For the purposes of this requirement, oil tanker means a vessel defined in Regulation 1(4) of Annex I to MARPOL 73/78, together with those vessels other than oil tankers to which Regulation 2(2) of Annex I to MARPOL 73/78 applies; that is, vessels fitted with cargo spaces which are constructed and utilized to carry oil in bulk of an aggregate capacity of 200 cubic meters or more.
3. All liquefied gas carriers, chemical tankers, or vessels coming under the INF Code, regardless of length.
4. Vessels engaged in towing or pushing where the towing or pushing vessel or the towed or pushed vessel is a vessel describe in one of the categories above or where the length of the tow, measured from the stern of the towing vessel to the aft end of the tow, is greater than 150m.

Warships, naval auxiliaries, and government vessels are encouraged to participate in ISLEREP on a voluntary basis.

Operating Authority.—ISLEREP is operated under a joint arrangement between the Indian Coast Guard and the A&N/L&M administrations. It is operated 24 hours and is based on VHF reporting employing a radio network along the A&N and L&M coasts to the Ship Reporting Center (call sign ISLEREP CENTER) using VHF channels 8 and 16 with Port Blair Radio (A&N) and Kavaratti Radio (L&M).

Concept of ISLEREP.—ISLEREP is based on a VHF voice reporting system employing a radio network along the A&N coast and the L&M coast, as well as on islands in the adjacent area. Through this network, certain categories of vessels are required to report their entry into, and progress through, the area.

The purpose is to monitor compliance with the reporting requirements and provide enhanced ship traffic information at

these locations. This will maintain a surface picture of participating vessels established from position reports and dead reckoning.

Entering the ISLEREP Area.—When entering the area from seaward within 20 miles of the islands or when departing from a port within the area, vessels are required to provide a Position Report (PR), which should include such information as vessel name, position, intended route, cargo, and other supplementary information. The extent of the PR will depend on whether the vessels has previously sent an INDSAR Sailing Plan (SP) message. If a vessel has already reported in the INDSAR system, the ISLEREP system will only require a reduced PR from the vessel.

Enroute Position Reports.—As a monitor of progress through the reporting area, enroute reporting points have generally been placed at intervals of 80 to 100 miles apart, depending on location and the siting of shore-based VHF radio stations. The Enroute Position Reports are generally limited to the vessel name, position, speed or ETA, and any further information the master considers might be of value to the system, such as concentration of fishing vessels or abnormal weather conditions.

In A&N, a high frequency link called “Atlanta” is manned by port authorities, as follows:

1. Day—8294 kHz.
2. Night—6224 kHz.

The Lakshadweep Islands also maintains a high frequency watch from 0600 to 2200 (Indian Standard Time) on 4393.4 khz, 6275 kHz, 7344 kHz, and 8275 kHz.

Survey vessels, research vessels, aids to navigation support vessels, and tourist related or local trading vessels, which may not be on a continuous passage, are required to provide a PR to ISLEREP at intervals not to exceed 12 hours.

Consistent with the aim of avoiding dual reporting, vessels within the ISLEREP area who are already participating in INDSAR do not need to submit separate INDSAR PRs; instead they can be messaged to INDSAR.

Leaving the ISLEREP Area.—Vessels sending their final report to the ISLEREP system when about to enter port or in the vicinity of a port of entry/departure reporting point will be required to advise if this is also an INDSAR Final Report (FR). Likewise, vessels, vessels sending their final report to the ISLEREP system when in the vicinity of an area entry/departure reporting point must advise if they intend to report to the INDSAR system for the remainder of their voyage in the Indian SRR area.

Special Reports.—Vessels must also advise ISLEREP in the following circumstances:

1. Significant deviation from track reported in the last PR.
2. Significant speed alterations, for reasons other than normal course and/or speed alterations.
3. Damage or defects to the vessel or its equipment which will affect its operations and/or seaworthiness.
4. Damage to the ship or its equipment that could make a discharge of dangerous cargo, harmful substances, or marine pollutants about to/or likely to occur.

Examples of such incidents include, but are not limited to, failure or breakdown of steering gear propulsion plant, electrical generating system, or essential shipboard navigational

aids; collision; grounding; fire; explosion; structural failure; flooding; or cargo shifting.

Communications.—Vessels participating in ISLEREP must communicate with ISLEREP Center using VHF channel 8 and 16 as the primary means of communication. The working VHF channel to be used will depend on the vessel's position.

Vessels may also provide cargo details to INDSAR/ISLEREP by non-radio means (telephone, fax, or INMARSAT-C) provided this is done prior to their first report. The language to be used for ISLEREP reports is English, using the IMO Standard Marine Communication Phrases where necessary.

Alternative communication methods may be used, in order of preference, as follows:

1. INMARSTA-C, through ARVI LES, using Toll Free Code 43.
2. Other INMARSAT (or non-INMARSAT) telephone/fax/telex services.
3. HF radiotelephone or telex services.

Automated Position Reporting.—Vessels transiting the ISLEREP region are encouraged to participate in Automated Position Reporting (APR) via INMARSAT-C Code 43. INMARSAT-C APR costs will be borne by the Indian Coast Guard. This is only for use when communications in the VHF network have failed and a satellite link with MRCC Mumbai (INMARSAT-C: 441907210) is necessary.

Types of Reports.—There are five types of ISLEREP reports, as follows:

1. **FIRST ISLEREP PR**—entering the ISLEREP system, if vessel is previously logged in with an INDREP SP. The vessel will, at the first reporting point, normally only need to:
 - a. Identify itself to the ISLEREP Center.
 - b. Confirm that the vessel is an INDAR participant.
 - c. Report its position.

d. Confirm there are no changes to the information provided or report any changes or additional information relevant to the voyage.

2. **FULL ISLEREP PR**—entering the ISLEREP system, if vessel is not previously logged in with an INDREP SP. If the ship does not intend to report to INDSAR, a FULL ISLEREP PR must be submitted

3. **ISLEREP PR (enroute)**—enroute within the ISLEREP system. Following the first report to ISLEREP Center, further position reports are required, as follows:

- a. At each subsequent reporting of islands.
- b. At intervals not to exceed 12 hours.

4. **Final ISLEREP PR**—leaving the ISLEREP system. Vessels should notify ISLEREP Center when:

- a. Departing the ISLEREP area or when 20 miles from the island.
- b. Arriving at a port within the island

5. **ISLEREP PR**—when reporting defects, damages, deficiencies, or other limitations. For further information, see the “Special Reports” paragraph above.

The required information for each report can be found in the accompanying table.

Reporting Format.—The basic format for ISLEREP reports follows the International Maritime Organization (IMO) standard. The first line in every report begins with the word ISLEREP, followed by a slash (/), continuing with the report type, and ending with a double slash (/). Each remaining line begins with a specified letter followed by a slash(/) to identify the line type. The remainder of each line contains one or more data fields separated by single slashes (/). Each line ends with a double slash (/). All reports should end with the Z (end of report) line

For VHF reporting, vessels do not need to prefix each field with the IMO format letter, but may do so if they wish.

ISLEREP Message Format						
Designator	Information	FIRST ISLEREP PR (INDSAR SP lodged)	FULL ISLEREP PR (INDSAR SP not lodged)	Enroute ISLEREP PR	Final ISLEREP PR	Changed circumstances ISLEREP PR
A	Vessel name and call sign	X	X	X	X	X
B	Date and time (UTC) of vessel's actual position if within 20 miles of the island	X	X	X	X	X
C	Latitude and longitude of vessel's actual position if within 20 miles of the island	X	X	X	X	X
E	True course in whole degrees	X	X	X		X
F	Speed in knots	X	X	X		X
J	Coastal pilot on board? (Yes or no)		X			
L	Final mandatory entry/anchoring in island, with name		X			
O	Draft fore and aft in meters and tenths of meters		X			
P	Cargo name. Dangerous cargo (Yes or no)		X			

ISLEREP Message Format						
Designator	Information	FIRST ISLEREP PR (INDSAR SP lodged)	FULL ISLEREP PR (INDSAR SP not lodged)	Enroute ISLEREP PR	Final ISLEREP PR	Changed circumstances ISLEREP PR
Q	Defects and other limitations (Yes or no. Supply details)		X			X
R	Brief details of type of pollution lost overboard (oil, chemicals, etc.). Also report if any pollution sighted.		X			X
U	Vessel type/length in meters/gross tonnage		X			
X	Remarks	X	X	X	X (see note)	X
Z	End of report	X	X	X	X	X
Note: <ol style="list-style-type: none"> 1. Yes INDSAR next report ddhhhh, where dd is the date and hhhh is the hour (if the vessel is also an INDSAR reporting vessel and is continuing to report to INDSAR) 2. Yes INDSAR final report (if the vessel is also an INDSAR vessel and is arriving at a port in the ISLEREP area) 3. Not INDSAR (if the vessel is not an INDSAR vessel) 						

Signals

Harbor Signals

Should it become necessary to control the movement of ships into and within ports in India, the signals described below will be displayed from a conspicuous position in or near the port approaches and/or from any Examination or Traffic Control Vessel operating in the approaches to the port, as follows:

1. Entry to port prohibited:
 - Day signal—Three red balls, vertically disposed.
 - Night signal—Three flashing red lights, vertically disposed.
2. Entry to port permitted:
 - Night signal—Three fixed green lights, vertically disposed.
3. Movement or anchorage within port prohibited:
 - Day signal—Blue flag.
 - Night signal—A fixed green light between two fixed red lights, vertically disposed.

Storm Signals

The system of storm warnings may be briefly described as consisting of the following:

1. A General System, consisting of 11 signals. Two of these signals indicate the existence of distant disturbed weather; eight indicate that local bad weather threatens the port; and the remaining one indicates that communication with the Meteorological Office concerned has broken down and that, in the opinion of the local officer, there is danger of bad weather.
2. A Brief System, consisting of only five of the above signals. This system is used at ports frequented mainly by smaller vessels engaged in local traffic. The signals used by the Brief System are III, IV, VII, X, and XI.

3. An Extended System, which, in addition to the signals of the General System, includes signals to indicate the position of the disturbance. This system is in use only at certain ports in the Bay of Bengal and is further described at the end of this section.













The Meteorological Offices of India, Sri Lanka, and Pakistan keep port offices informed of all necessary warnings and the latest information with respect to disturbances in the seas off the coasts of the Indian peninsula.

The Chennai (Madras) Meteorological Office is the warning center for ports on the W shore of the Bay of Bengal S of, and including, Kalingapatam. The Calcutta Meteorological Office is the warning center for Indian ports N and E of Baruva. The Rangoon Meteorological Office is the warning center for Burmese ports. These authorities keep the Port Officers informed of all necessary warnings and the latest information with respect to disturbances in the seas off the shores of the Bay of Bengal. Therefore, vessels may contact the Port Officers for details to supplement the indications of the signals displayed. Vessels will also receive detailed information in the broadcast weather bulletins issued by the Meteorological Offices through the coast radio stations. Vessels are advised to obtain a copy of the Meteorological Manual listing the day signals used in the three warning systems at the first port of call or through their agents.

Extended System—Explanation

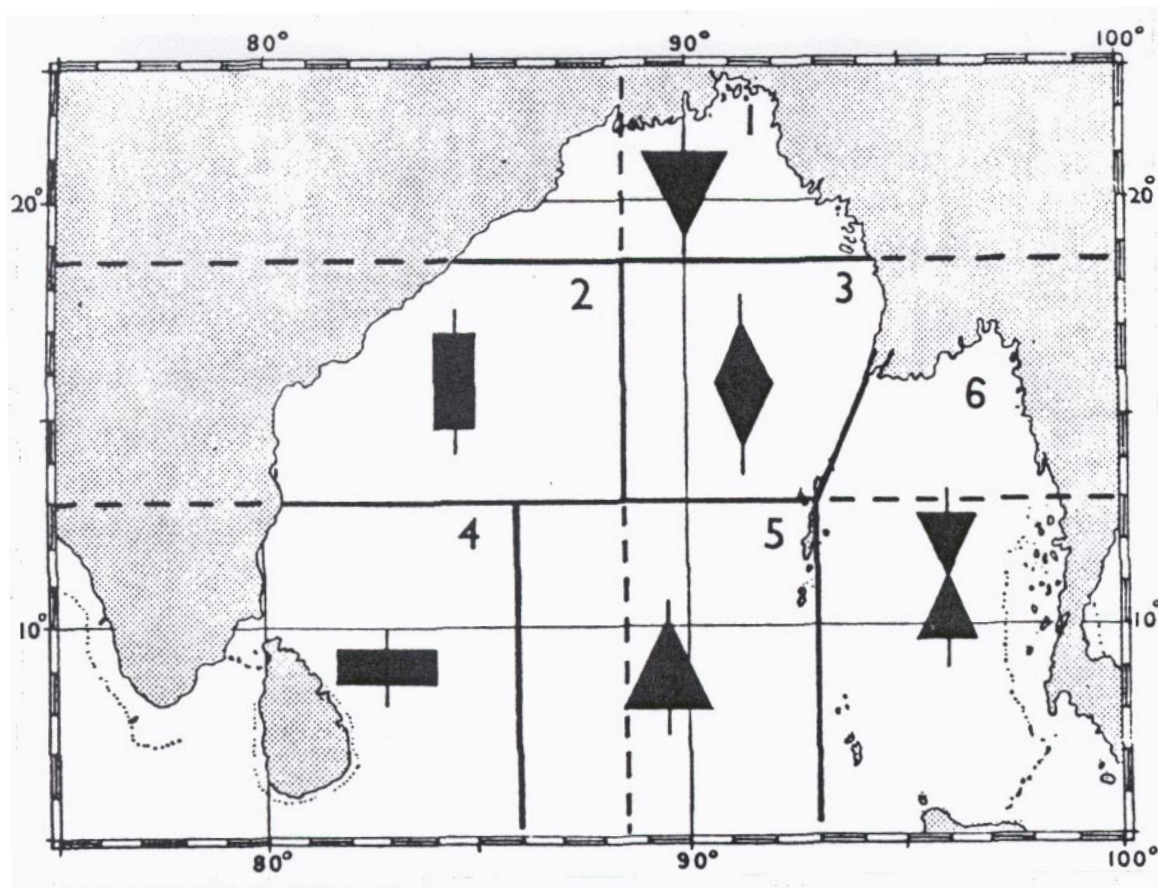
These special signals are shown in many ports in the Bay of Bengal. These signals help locate areas of bad weather in the Bay of Bengal with some degree of certainty, even though the indicated bad weather may be located a considerable distance from the coast. The Bay of Bengal is divided into six Sections, along with a corresponding Section Signal, as shown in the accompanying graphic.

INDIA—PORT STORM SIGNALS—GENERAL SYSTEM

No.	Day	Night	Remarks
I			<p>Cautionary.—There is a region of squally weather in which a storm may be forming.</p> <p>This signal is shown at ports so situated with reference to the disturbed weather that a ship leaving the port might run into danger during its voyage.</p>
II			<p>Warning.—A storm has formed.</p> <p>This signal is shown when there is no immediate danger of the port itself being affected, but ships leaving the port might run into the storm.</p> <p>But if, in addition to distant warnings (I and II), there is risk of the port experiencing bad weather, then the appropriate local signals (III to XI) are shown.</p> <p>In general, if the weather situation warrents two or three signals, then the highest-numbered signal is shown.</p>
III			<p>Cautionary.—The port is threatened by squally weather (i.e., winds over 20 knots accompanied by rain).</p>
IV			<p>Warning.—The port is threatened by a storm, but it does not appear that the danger is as yet sufficiently great to justify extreme measures of precaution.</p> <p>The existence of a storm can often be determined before its direction of motion can be fixed. In this case all those ports which the storm could possibly strike are warned by this signal.</p>
V			<p>Danger.—The port will experience severe weather from a cyclone expected to move keeping the port to the left of its track.</p>
VI			<p>Danger.—The port will experience severe weather from a cyclone expected to move keeping the port to the right of its track.</p>

INDIA—PORT STORM SIGNALS—GENERAL SYSTEM

No.	Day	Night	Remarks
VII			Danger. —The port will experience severe weather from a cyclone expected to move over or close to the port. The signal is also used when a storm is expected to skirt the coast without actually crossing it.
VIII			Great danger. — The port will experience severe weather from a severe cyclone expected to move keeping the port to the left of its track.
IX			Great danger. — The port will experience severe weather from a severe cyclone expected to move keeping the port to the right of its track.
X			Great danger. — The port will experience severe weather from a severe cyclone expected to move over or close to the port. The signal is also used when a storm is expected to skirt the coast without actually crossing it.
XI			Failure of communication. — Communications with the Meteorological Warning Center have broken down and the local port officers consider that there is danger of bad weather.
Key to Color of Lights: <div style="display: inline-block; vertical-align: middle; margin-right: 20px;"> GREEN </div> <div style="display: inline-block; vertical-align: middle;"> WHITE </div>			



Indian Extended System

At ports not threatened, the Section signal for the affected Section is displayed below the General System Signal I or the General System Signal II and indicates the general position of the bad weather in the Bay of Bengal. Some examples of the Extended System are, as follows:

1. **Bad weather located in Section 5**—A horizontally-disposed cylinder (General Signal I) displayed over a black cone, point up (Extended System Section Signal 5).

2. **Storm located in Section 2**—A vertically-disposed cylinder (General Signal II) displayed over a vertically-disposed cylinder (Extended System Section Signal 2) would be shown at all ports which are not directly affected by the storm. If the port itself is threatened, only the signals of the General System would be displayed.

If the storm center is near the boundary of two Sections, two Extended System Section Signals will be given. The first Extended System Section Signal will indicate which Section the storm center is in; the second Extended System Section Signal will indicate the neighboring Section.

If the storm center is near the boundary of three Sections, three Extended System Section Signals will be given. The first Extended System Section Signal will indicate which Section the storm center is in; the second Extended System Section Signal will indicate the nearest adjoining Section; and the third Extended System Section Signal will indicate the remaining Section.

Submarine Operating Areas

Submarine Exercise Areas

Areas in which submarines conduct exercises have been established off the following ports:

1. West coast:

- Cochin—25 miles W and 100 miles SW of the harbor entrance.
- Mormugao—65 miles W, 45 miles W, and 30 miles SW of Mormugao Head.
- Ratnagiri—146 miles W of the harbor. Two other areas, centered about 100 miles WNW of the harbor, lie between Angria Bank and Fifty Fathom Flat.
- Porbandar—75 miles W and 128 miles W of Diu Head (20°41'N., 70°50'E.).

2. East coast:

- Vishakhapatnam—18 miles ENE of Waltair Point (17°44'N., 83°21'E.).
- Chennai (Madras)—20 miles ENE of Covelong Point (12°47'N., 80°15'E.).
- Port Blair (Andaman Islands)—35 miles SSE of Port Blair.

Warning Signals

Indian submarines may be encountered by day or at night while operating in any of the waters off the Indian coast. Under

certain circumstances, warnings that submarines are exercising in specified areas may be broadcast by local coastal radio stations.

Indian escort vessels fly the International Code Group "NE2" to denote that submarines, which may be submerged or surfaced, are exercising in the vicinity. Vessels are cautioned to give a wide berth to any vessel flying this signal.

It must not be inferred from the above that submarines exercise only when in the company of escorting vessels.

A submarine submerged at a depth too great to show the periscope may sometimes indicate its position by releasing a "smoke candle" that gives off a considerable volume of smoke on first reaching the surface. Submarines may sometimes also indicate their positions by towing on the surface close astern a red-and-white or red-and-yellow float.

In order to enable the accompanying vessel to identify the position of a submerged Shishumar Class of submarine, an identification light is provided in the aft section of the conning tower. This light emits a white light upward through plexiglass and has a luminous range of 7 miles when measured in the air during clear visibility.

The following signals are used by submerged submarines within designated Submarine Exercise Areas:

1. Red grenades fired in quick succession indicate that vessels should clear the area immediately as the submarine is carrying out emergency surfacing procedure. Vessels must not stop their propellers and should standby to render assistance.
2. Two colored grenades fired 3 minutes apart (white, yellow, or green) indicate that vessels should clear the immediate vicinity. The submarine has indicated its position and is intending to carry out surfacing procedure. Vessels must not stop their propellers.

Navigation Lights

The masthead and sidelights of Indian submarines are placed well forward and very low over the water in proportion to the length and tonnage of these vessels. The steaming lights, bow lights, and overtaking lights are closely spaced and as a result give no indication of the submarine's length, its course, or its change of course. The stern lights are placed very low and may at times be partially obscured by sea spray and wash. In summary, the overall arrangement of the submarine's navigational lights is unusual and may give the impression of a markedly smaller and shorter vessel than they truly represent.

Some submarines are fitted with a very quick yellow anti-collision light. These lights flash between 90 and 105 flashes per minute and are fitted 1 to 2m above or below the masthead light. They should not be confused with a similar light exhibited by hovercraft (1220 flashes or more per minute).

Sunken Submarine

An Indian submarine that is bottomed and unable to surface will try to indicate its position by the following methods:

1. Releasing an indicator buoy as soon as the accident occurs.
2. On the approach of surface vessels and at regular intervals by firing red and green grenades accompanied by red, orange, white, or yellow smoke candles. (It should be noted that submarines may not be able to fire their grenades. Correspondingly, a partially flooded submarine may have

only a certain number of grenades available and searching ships should not therefore expect many to appear.)

3. Pumping out fuel or lubricating oil.
4. Blowing out air.

Since oil streaks or debris may be the only indication of the presence or position of the sunken submarine, it is vitally important that surface vessels refrain from discharging anything which might appear to have come from a submarine while in the probability area. Searching vessels and aircraft can waste many valuable hours investigating these false contacts.

In any submarine accident, time is the most vital factor effecting the chances of rescue of survivors. As the sighting of a buoy may be the first indication that an accident has, in fact, occurred, it is vital that no time should be lost in taking action.

At any time after a submarine accident, survivors may start attempting to escape. Conditions inside are likely to deteriorate rapidly and postponement of escape will only be made in order to allow rescue ships to reach the scene. Therefore, any ship finding a moored submarine indicator buoy should not leave the position but should standby, well clear, ready to pick up survivors. Survivors will ascend nearly vertically and it is important that plenty of sea room is given to enable them to do so in safety. On arrival at the surface, survivors may be exhausted or ill, and if circumstances are favorable, the presence of a boat already lowered is very desirable. Some survivors may require a recompression chamber and it will, therefore, be the aim of the Naval authorities to get such a chamber to the scene as soon as possible.

Submarine Indicator Buoys

The Vela class of submarine carries two Emergency Indicator Buoys. The diameter of the buoy is 132 cm and floats 15 to 23 cm above the water level. The buoys are painted in four quadrants. The diagonally opposite quadrants are painted yellow and orange. The name of the submarine is painted on the buoy. Each buoy has a white light which can either show steadily or exhibit 120 flashes per minute. A sound-powered telephone is fitted in each buoy, under the base of the light, for communication with the submarine. No radiobeacon or wireless transmitter is fitted to the buoys.

The Sindhughosh Class of submarine carries one Emergency Indicator Buoy. The diameter of the buoy is 115 cm. The buoy is painted in four quadrants. The diagonally opposite quadrants are painted yellow and orange. The identification number of the submarine is painted on the buoy. This buoy has a white light which flashes once every 3 seconds. A sound-powered telephone is fitted on the top of the buoy for communication with the submarine. Two-way radiotelephony communications can be established with the submarine on 121.5 MHz when the buoy is recovered. The buoy is also fitted with a radiobeacon transmitting on 51.2MHz (the transmission may be continuous or for 20 seconds with a pause of 60 seconds).

The Shishumar Class of submarine carries one Emergency Indicator Buoy. The buoy is made of plastic foam covered with a GRP skin; it is semi-spherical in shape, being 76 cm in diameter and 90 cm high. The buoy floats end up with a freeboard of about 15 cm and is covered with alternating longitudinal strips of red and white reflective tape. A three-digit identification number is displayed on each side of a flashing ultraviolet light centered on the top surface of the buoy; in darkness and good weather the light is visible for 5 miles. Two-way

telephone conversation with the submarine is not possible. The buoy carries HF and UHF whip antennas (168 cm long and 100 cm long, respectively). The following transmissions/signals are automatically activated when the indicator buoy is released:

1. An HF transmission, at a frequency of 8364kHz, consisting of the international distress call "SOS" together with the submarine's identification number.
2. A UHF Sarbe tone transmitted on 243MHz.
3. A Xenon light flashing approximately 33 times per minute that is visible at a distance of 5 miles in good weather conditions.

The finder of any Emergency Indicator Buoy should inform the nearest Naval/Port/Police authorities and should not secure to or attempt to lift the buoy.

Time Zone

The observed Standard Time is 5 hours 30 minutes fast of UT(GMT). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Shanti Path, Chanakyapuri, New Delhi.

The mailing address is Shanti Path, Chanakyapuri, New Delhi 110021.

<p>U. S. Embassy India Home Page http://newdelhi.usembassy.gov</p>



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General

The Indian Ocean, the third largest ocean, is bordered on the W by Africa, on the S by Antarctica, on the N by Asia, and on the E by Australia.

The Mid-Indian Ridge, the most notable bathymetric feature of the ocean, lies near the center. It takes the form of an inverted "Y" and has a depth of 2,743m. The Mid-Indian Ocean Basin, with depths of over 5,000m, lies E of this ridge. The Ninetyeast Ridge extends S from the Bay of Bengal on the E side of the basin.

The **Vema Trench** (9°00'S., 67°30'E.), with depths of over 6,000m, lies on the E side of the Mid-Indian Ridge.

The **Java Trench** (10°20'S., 110°10'E.), with a reported maximum depth of 7,449m, is the deepest part of the Indian Ocean.

Cautions

Special Warning 122 (Issued 11 March 2005)

As of early 2005, the United States Government has received unconfirmed information that terrorists may attempt to mount a maritime attack using speedboats against a Western ship, possibly in East Africa. This information is unconfirmed and

the United States is not aware of additional information on the planning, timing, or intended targets of the maritime attack.

Special Warning 120 (Issued 16 November 2001)

1. Due to recent events in the Middle East and the American homeland, U.S. forces worldwide are operating at a heightened state of readiness and taking additional defensive precautions against terrorist and other potential threats. Consequently, all aircraft, surface vessels and subsurface vessels approaching U.S. forces are requested to maintain radio contact with U.S. forces on bridge-to-bridge channel 16, international air distress (121.5 MHz VHF), or MILAR Distress (243 MHz UHF)

2. U.S. forces will exercise appropriate measures in self-defense if warranted by the circumstances. Aircraft, surface vessels, and subsurface vessels approaching U.S. forces will, by making prior contact as described above, help make their intentions clear and avoid unnecessary initiation of such defensive measures.

3. U.S. forces, especially when operating in confined waters, shall remain mindful of navigational considerations of aircraft, surface vessels, and subsurface vessels in their immediate vicinity.

4. Nothing in this special warning is intended to impede or otherwise interfere with the freedom of navigation or overflight of any vessel or aircraft, or to limit or expand the inherent self-defense right of U.S. forces. This special warning is published solely to advise of the heightened state of readiness of U.S. forces and to request that radio contact be maintained as described above.

ODAS

The term Ocean Data Acquisition System (ODAS) covers a wide range of devices for collecting weather and oceanographic data. However, the devices of most concern to vessels

consist of buoy systems which support instruments. These buoy systems may be expected to become more numerous each year and may be found in most oceans.

The buoy systems vary considerably in size and are either moored or free-floating. As far as possible, positions of the former will always be widely promulgated, and, if considered to be of a permanent enough nature, will be charted. In both types, the instruments may be either in the float or attached at any depth beneath it.

The buoys are colored yellow and marked ODAS with an identification number. The moored buoys usually display a yellow light, showing a group of five flashes every 20 seconds.

ODAS equipment may be encountered in unexpected areas and often in deep water where navigational buoys would not be found. It should be noted that valuable instruments are often suspended beneath these systems or attached to the mooring lines. In some cases, the moorings have been cut loose beneath the buoy by unauthorized persons, with the consequent loss of the most valuable part of the system.

The moored buoys may be up to 7.5m in diameter and 2 to 3m in height. The free-floating buoys are usually much smaller, 2m wide, and do not display a light.

Locust Reports

General.—Many countries in Africa and Southwest Asia are, from time to time, invaded by swarms of Desert Locust. These locusts are capable of traveling for hundreds of miles and have repeatedly been seen in flight at sea within the North Arabian Sea, the Red Sea, the Gulf of Aden, the Persian Gulf, and the N part of the Indian Ocean. The adult Desert Locust is about 60mm long with a wingspan of about 120mm. They vary in color from red to yellow according to their state of maturity.

Reports of locusts in all infested countries are exchanged through the Desert Locust Information Service, Food and Agriculture Organization (FAO) of the United Nations, Rome. To assist in the provision of appropriate warnings to countries threatened by locust invasion, mariners sighting locusts are requested to report by radio or, as follows:

1. Telephone: +39-06-570-52420
2. Fax: +39-06-570-55271
3. Telex: 625852 FAO
610181 FAO
4. Telegraph: FOODAGRI ROME
5. E-mail: eclo@fao.org
6. Web site below:

<http://www.fao.org/news/global/locusts/locuhome.htm>

The report should include the following particulars:

1. Date and time (specifying UT/GMT or zone time) when locust first seen.
2. Latitude and longitude, if possible to nearest second, where locusts first seen.
3. Time and position at which locusts were last seen.
4. Whether isolated locusts (seen in flight singly), locust groups(s) (flying locusts seen intermittently in numbers), swarm (flying locusts seen continuously in numbers over a period of at least a minute), dense swarm (obscuring part of horizon or other background), or locusts appearing on board or floating dead (isolated, groups, or swarms).

5. Color of locusts (yellow, pink, red, or gray).
6. Wind direction and speed.

The cost of these messages will be defrayed by the FAO Desert Locusts Information Service.

Pakistan.—Reports of locusts seen in the Arabian Sea can also be sent directly to the Department of Plant Protection, Karachi, as follows:

1. Telephone: +92(0)-21-9248612-
+92(0)-21-9248613
+92(0)-21-9248614
+92(0)-21-9248615
2. Fax: +92(0)-21-9248673
3. E-mail: d_locust@gem.net.pk
mohd_bashirpp@yahoo.com
locust@khi.paknet.com.pk
locustgp@hotmail.com

The cost of these messages will be defrayed by the Department of Plant Protection.

Oman.—Mariners sighting locusts are asked to report the information contained in 1 to 6 above to the Omani Ministry of Agriculture and Fisheries by fax (if fax is unavailable, then by telex to FAO Rome and to Muscat Coast Radio Station), as follows:

1. Telephone: +968-696287
2. Fax: +968-696271
3. Telex: 625852 FAO
610181 FAO
4. Telegraph: FOODAGRI ROME

Off-lying Dangers

The **Madagascar Plateau** (33°13'S., 43°48'E.), a submarine ridge, lies about 460 miles S of Madagascar. Walters Shoal, with a least depth of 18m, lies on this ridge.

The **Alphard Banks** (35°02'S., 20°52'E.), a series of coral and rock formations, rise from general depths of about 85m to a least depth of 15.5m. Heavy swells and turbulent seas frequently occur, especially during strong SW winds, in the vicinity of these formations.

Muirfield Seamount (13°10'S., 96°11'E.), with a least depth of 18m, is reported to lie about 70 miles SSW of the Cocos Islands (Keeling Islands).

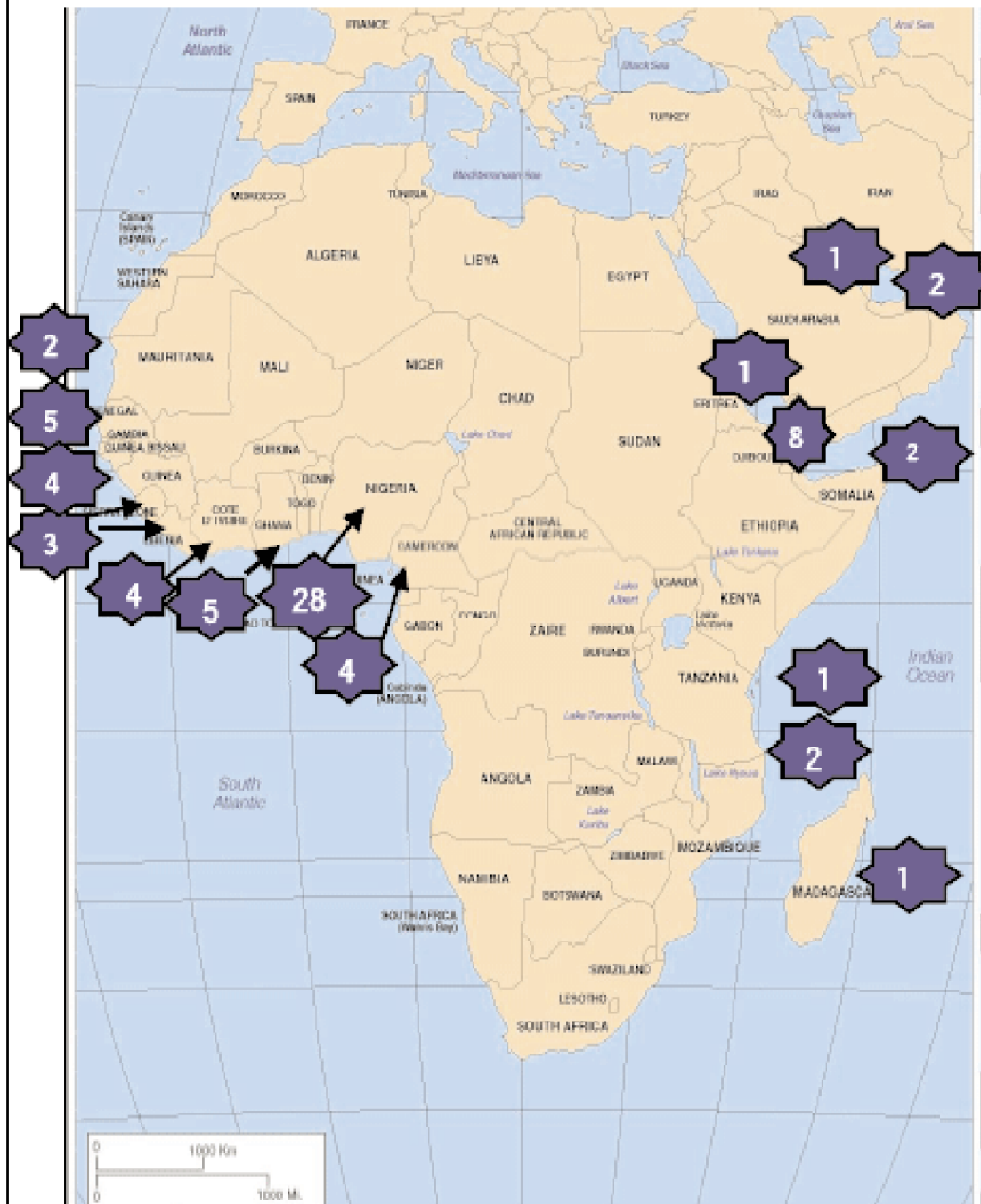
Piracy

Acts of piracy are reported to occur within the waters of the Indian Ocean lying off the W coast of Sumatra, off the coast of Somalia, and in the Strait of Hormuz. The International Maritime Bureau (IMB) of the International Chamber of Commerce has established a Piracy Countermeasures Center at Kuala Lumpur. This center operates for the Southeast Asian Region and is able to receive reports from vessels concerning attacks and advise of danger areas. Piracy warnings are broadcast by the center. For further information, see Malaysia—Cautions.

Freak Waves

An area in the Indian Ocean lying between the Cape of Good Hope and Durban has long been regarded as dangerous due to large swells and the occurrence, without warning, of abnor-

ICC International Maritime Bureau (IMB)
Piracy and Armed Robbery - 1 Jan to 31 Dec 2004
Attacks in Africa



Produced by the Cartographic Research Lab, University of Alabama

Courtesy of the International Chamber of Commerce International Maritime Bureau—<http://www.icc-ccs.org>



Courtesy of the International Chamber of Commerce International Maritime Bureau—<http://www.icc-ccs.org>

mally high freak waves. These freak waves are reported to be preceded by a steep trough, often described as a “hole,” into which vessels may plunge. Such vessels are then unable to rise up again before encountering a solid wall of water, 20 to 25m high. These freak waves have usually been reported to occur within 20 miles of the edge of the Continental Shelf.

The heavy swell is generated by the large extratropical storms to the S. These waves are often able to travel unimpeded to the coast of Africa. It is believed that the combination of SW winds and swell, the sharp drop in the Continental Shelf, and the swift southward-flowing Agulhas Current all contribute to creating these heavy swell conditions. The fact

that they often occur in clear weather with moderate breezes makes them all the more dangerous.

Freak or abnormally high waves seem to be created under the following conditions. Preceding the passage of a cold front or low along the SE coast, strong NE winds intensify the Agulhas Current, which is at its fastest and deepest just outside the 183m line. Then a rapid change in wind direction, with the storm passage, brings strong SW winds, which raise 3.1 to 4.6m seas of 53 to 61m in length against the Agulhas Current. These waves, moving toward the NE, are joined by similarly moving swells of 6.1m or more in height, which increase in height as they run up against the Agulhas Current. Their wavelengths then drop to about 152m. When waves of varying wavelengths are superimposed, an abnormally high wave can be generated for a short period of time, sometimes for just a few minutes. This abnormally high wave moving against a fast flowing current can become extremely steep on the N or leeward face. An abnormally long trough also occurs on the NE side of the wave, posing an additional problem to southwest-bound ships.

While the chances of encountering a freak wave are slight, care should be exercised when navigating in the vicinity of the edge of the Continental Shelf between Durnford Point and Cape Recife. If the previously mentioned conditions exist or are forecast, then it would be safest inside the 183m curve or, if that is not possible, then greater than 20 miles away from the Continental Shelf.

Tsunami Damage

In December 2004, a large tsunami affected the N and W coasts of Sumatera, the W coast of Thailand, the Maldive Islands, the Andaman Islands, the Nicobar Islands, Sri Lanka, the SE and SW coasts of India, and Somalia. Depths, coastlines, and sea levels may have changed throughout these areas; wrecks and obstructions may have been displaced; and aids to navigation may have been damaged, destroyed, or be out of position. Mariners in these areas should obtain local knowledge when making for ports or seeking refuge.

Seiches

Seiches (stationary oscillations superimposed upon the tide, having periods varying from a few minutes to about an hour) occur in the Persian Gulf. At Ras al Mishab, the height is about 0.1m, with periods of 30 to 60 minutes; at Ras Tannurah, the height is about 0.2m, with periods of 6 to 12 minutes.

Information on seiches in the Arabian Sea is not available; however, they should be expected because the Arabian Sea is similar in shape to the Bay of Bengal, where seiches do occur.

In the Red Sea, the water level is about 0.3m higher in winter than in summer because of the greater evaporation during the latter season. Also, strong winds and changes in barometric pressure may cause appreciable variations in the water level.

In the Bay of Bengal, seiches (stationary wave oscillations superimposed upon the tide and having periods of about 34 minutes) may raise the water level 0.05 to 0.15m along the coast. These seiches, usually attributed to strong winds or changes in barometric pressure, are more pronounced during neap tides.

Climatology

General

The Northeast Monsoon occurs from December to April. The Southwest Monsoon occurs from June to October. Tropical cyclones occur mostly during May, June, October, and November in the N part of the ocean and during January and February in the S part.

The N part of the Indian Ocean has a typical monsoon climate, with the onset of the Southwest Monsoon affecting Sri Lanka and the S part of India from late May to early June and steadily moving NW to affect the NW part of India and the SW part of Pakistan by early July. In early September, the Southwest Monsoon starts to retreat towards the SE and by mid to late December, the Southwest Monsoon has usually cleared most of Sri Lanka.

The weather pattern over much of the area is more regular than in most parts of the world, and is usually classified over most of India, as follows:

1. The cool season (December through March)—Dry NE winds, with little clouds, except in the S.
2. The hot season (April and May)—Light, variable winds, with sea breezes along the coasts, and a small chance of a tropical cyclone.
3. The Southwest Monsoon or rainy season (June through September)—Winds normally W to SW, but along the SW coast of India, winds are W to NW.
4. The interim, or transitional, period (October and November)—Light variable winds, with sea and land breezes. Occasional tropical cyclones may be experienced.

On the W coast of India, the whole period from the cessation of the Southwest Monsoon to its recommencement is often referred to as the "fine weather season." Along much of the coast of Pakistan and the W coast of India, most of the rainfall is associated with the Southwest Monsoon. The rainy season is more prolonged over the S part of India and Sri Lanka; in the extreme S part of the area, the monthly variation in rainfall is small.

Tropical cyclones (force 12) are infrequent, with an average of one or two occurring over the Arabian Sea each year.

Due to their devastating storm tides, tropical cyclones in the vicinity of the head of the Bay of Bengal have long been recognized as extremely dangerous. As far back as 1737, a "wall of water," reported to be 12m high, swept ashore killing over 300,000 people. In November 1970, a "severe cyclone" (classification used in India in lieu of hurricane) sent a 7m storm surge over Bangladesh and the offshore islands with loss of life estimated at about 310,000. This storm generated winds of 130 knots. In the past 35 years, cyclones, at times, have generated winds estimated at 150 to 175 knots and waves of up to about 10m high. However, with the increased use of satellites for detection and tracking, more advanced notice can be given and the intensity of the storm determined.

Climate—Indian Ocean—April through August

North of the Equator the boreal summer becomes the season of the Southwest Monsoon. Southwest winds are entrenched from June through August as low pressure over Asia draws the Southern Hemisphere trade winds across the Bay of Bengal and Arabian Sea. The monsoon is preceded by the N movement of the Intertropical Convergence Zone (ITCZ). This is a

semi-continuous band of clouds and showers that separates the two monsoon or trade wind systems. In the boreal summer it merges with the continental low. On its N journey, it may spawn tropical cyclones over the North Indian Ocean. The Southwest Monsoon creates an area of dangerous winds and seas near Suqutra. It also brings clouds and rain to windward coasts.

South of the Equator the austral winter brings good weather to the tropics and some storms to the subtropics. The South Indian Ocean High, at its peak, produces warm dry air masses with mild fair weather. It generates Southeast Trade Winds N of 25°S. While tropical cyclones can form in any month, April is usually the last active month in the S. However, extratropical cyclones, which travel circumpolar routes S of 40°S, edge N during this season to bring strong winds, precipitation, and clouds N to about 30°S.

Of the major routes to and from the Cape of Good Hope, the Cape Leeuwin and Bur Said passages are probably the roughest. Weather around the Cape of Good Hope is variable due to austral winter storms. Gales blow up to 15 per cent of the time on winds that are generally out of the SW through NW.

The Cape routes that run through the Mozambique Channel, including those to and from the Gulf of Aden, the Persian Gulf, Mumbai (Bombay), and Colombo, are under the threat of tropical cyclones in both hemispheres during April and May. In the S the activity extends through the Mozambique Channel to about 5°S. In the N, it occurs mainly on the runs to Mumbai (Bombay) and the Persian Gulf; however, storms are occasionally encountered near Sri Lanka and Suqutra. By June, activity is generally confined to N of 15°N. Tropical cyclones are rare in July and August. The most dangerous weather occurs near the entrance to the Gulf of Aden, where winds blow out of the S through SW at average speeds of 20 to 30 knots; they reach gale force 20 to 40 per cent of the time. These strong winds are also encountered to a lesser degree along the Persian Gulf route. Upwelling of cold water by these winds causes some fog between Somalia and Suqutra. Visibilities fall to 2 miles or less about 3 to 7 per cent of the time from June through August. Fog is also occasionally encountered off the coast of Saudi Arabia and near Mumbai (Bombay).

Winds through the channel blow mainly out of the SE through S at about 8 to 13 knots. They are strongest near the S entrance. Gales are infrequent. North of the Equator, S through SW winds blow 60 to 90 per cent of the time at average speeds of 10 to 20 knots, away from the Suqutra region. Winds often approach gale force but rarely exceed it. Precipitation is most frequent near Mumbai (Bombay), where it falls 15 to 30 per cent of the time under mostly cloudy skies. Elsewhere skies are partly cloudy and rain falls less than 10 per cent of the time. Snow is occasionally encountered around the S tip of Africa.

Between the Cape of Good Hope and Cape Leeuwin austral winter, storms bring gales. In the S route, between 50°E and 90°E, gales blow up to 30 per cent of the time. Cloudy skies and frequent precipitation are the rule, with snow falling up to 5 per cent of the time in midwinter. Visibilities fall below 5 miles in precipitation, but fog is infrequent. Both routes take advantage of following winds much of the time. Along the S route to Cape Leeuwin, winds are frequently out of the SW through NW. On the route from Cape Leeuwin, E through SE winds are frequent. Along this route, tropical cyclones are a slight threat through June.

Tropical cyclones are more of a threat on the routes that run E of Madagascar between the Cape of Good Hope and Mumbai (Bombay), Colombo, Calcutta, and Rangoon; this includes the routes between Colombo and Calcutta or Rangoon. During April, the S routes run through the heart of S activity, where there is a 10 to 20 per cent chance of a tropical cyclone occurrence. In May, the Mumbai (Bombay) route skirts this trouble, but there is still a threat on the other routes. After May, all routes are fairly safe in the S. However, in the Northern Hemisphere, tropical cyclones are a problem on the Mumbai (Bombay) route in May and June. They occur north of 10°N along the Bay of Bengal routes during April and May and N of 15°N from June through August. In May there is a 25 per cent chance of at least one tropical cyclone occurrence between the Andaman Islands and Burma. Once out of the Cape of Good Hope region, gales are mainly tropical cyclone generated and therefore infrequent; they are most likely near Calcutta in July. Winds are usually E through SE below the Equator, veering to the S near the Equator and to the SW above it. This flow is most persistent and strongest during June, July, and August, when the average speed blows at 10 to 20 knots. The Southwest Monsoon brings a blanket of clouds to the Mumbai (Bombay), Rangoon, and Calcutta regions, where rain falls 20 to 30 per cent of the time from June through August, dropping visibilities to below 2 miles up to 5 per cent of the time. Elsewhere skies are partly cloudy, with occasional showers and good visibilities.

Few weather problems crop up between the Cape of Good Hope and Torres Strait and Selat Sunda. On the route to Torres Strait, gales blow 10 to 25 per cent of the time W of 100°E. On the other routes S of 30°S, the frequency drops to 5 to 15 per cent. Winds along the W portions are variable but generally SW through NW. North of 30°S, they run E through SE. Early in the season, tropical cyclones are a threat E of 45°E on both Selat Sunda routes and along the route from Torres Strait; on the route to Torres Strait, this threat exists E of about 100°E. Except for extratropical and tropical cyclones, partly cloudy skies, occasional showers and good visibilities are the prevailing conditions along these routes. A local visibility problem is sometimes encountered off the coast of northwest Australia. Fog and haze drop visibilities to below 2 miles about 5 to 10 per cent of the time; this condition is the worst in August, when these frequencies climb to 20 per cent in Joseph Bonaparte Gulf, near Darwin.

Routes through the Red Sea and Persian Gulf experience mostly good weather during the N summer. Prevailing NW through N winds rarely reach gale force. In the S waters of both bodies, winds are most variable early in the season. Through the Strait of Hormuz, SW through NW winds give way in July to SE winds. Wind speeds average 5 to 10 knots in the Persian Gulf and southern Red Sea. In the northern Red Sea, speeds of 8 to 13 knots are common, and gales may occur, particularly where the prevailing wind is reinforced by the sea breeze. Over the Persian Gulf the persistent NW winds from July on are known as the Great Shamal (40-day Shamal). The winds occasionally blow at near gale strength, bringing clouds of dust and sand over the Persian Gulf. Dust and haze can reduce visibilities to less than 2 miles, but generally visibilities are good over both the Red Sea and Persian Gulf. Skies are often cloudless, with only a few scattered showers to break the monotony of good weather.

Outside the Red Sea and Persian Gulf the weather much more variable. The major routes to and from the Gulf of Aden rely on seasonal routings to try to avoid the strong winds and rough seas around Suqutra. At its July peak, the monsoon generates gales up to 40 per cent of the time just NE of Suqutra. Average wind speeds blow at 20 to 30 knots; conditions are only slightly better in June and August. Visibilities drop below 2 miles about 3 to 6 per cent of the time over these W portions of the routes. North of the Equator, early season variable winds give way to the persistent SW winds of summer. On the Cape Leeuwin and Torres Strait routes, light W winds near the Equator back to the E through SE at average speeds of 10 to 15 knots. Near Cape Leeuwin, variable winds blow mainly out of the SW through NW, reaching gale force 5 to 10 per cent of the time. Tropical cyclones are most likely to occur in the Arabian Sea in May and June, when there is a 5 to 10 per cent chance of an occurrence on most routes. They are more frequent on the Bay of Bengal portion of the Calcutta routes, where there is a 10 to 20 per cent chance of at least one developing during May and a 25 to 50 per cent chance near Calcutta from June through August. On the Torres Strait routes, there is also a 10 to 20 per cent chance of an April cyclone occurrence in the Timor Sea or the Arafura Sea. Over the Arabian Sea portions of the major routes, partly cloudy skies and occasional showers are the rule. Near the Maldiv Islands, skies become cloudier and showers occur 10 to 20 per cent of the time. These conditions extend to Selat Sunda on the Torres Strait routes and to 15°S on the Cape Leeuwin routes. Conditions improve to the E and SE. On the Bay of Bengal portion of the Calcutta route, skies are cloudy and rain falls 20 to 30 per cent the time; these same conditions occur near Mumbai (Bombay). Visibilities often fall below 5 miles in these showers and sometimes below 2 miles.

Along the routes between the Persian Gulf and Colombo and the Persian Gulf and Cape Leeuwin, tropical cyclones and monsoonal rains pose a hazard to navigation. Near Cape Leeuwin, extratropical cyclones generate gales 5 to 10 per cent of the time. Tropical cyclones are most likely in June, N of 15°N, where the chance of occurrence is 10 to 15 per cent. There is also a slight chance in April and May N of about 5°N. Winds N of the Equator are mainly SW, with some W winds. They gradually back to the S then SE below the Equator on the Cape Leeuwin runs. South of 25°S, they blow mainly out of the SW through NW. Between 10°N and 20°N and between 10°S and 20°S, average wind speeds are 15 knots or more, with gales occurring 5 to 10 per cent of the time in July and August. In the N, the monsoon brings rain up to 25 per cent of the time off the SW coast of India, under mostly cloudy skies. Rain is almost as frequent between 5°S and 15°S during midwinter. Visibilities along all routes are good except in showers.

Climate—Indian Ocean—September through March

Subtle changes signal the approach of the northern winter and southern summer. Southwest winds become lighter and less constant in the N, starting at the upper reaches of the Bay of Bengal and Arabian Sea. The continental low begins to weaken while the Siberian High intensifies. In the S, the large high is weakening slightly under the warmth of the approaching sun. The Southeast Trade Winds give way to light variable winds near the center of the high. South of 40°S, W winds are frequent in the region of extratropical storms. By October, the Asian High is spreading the Northeast Monsoon over the N

waters. These winds are separated from the Southeast Trade Winds by the Intertropical Convergence Zone (ITCZ). This semi-continuous band of clouds and showers pushes S. By November, it has usually crossed the Equator. It affects weather from the Equator to 20°S during the next 3 months. It is partly responsible, along with a low level trough, for some of the 14 or so tropical cyclones that develop in an average year between northwestern Australia and the east African coast, from about December through April. Tropical cyclones are most frequent in the N from September through December, when about three develop on average. Weather is generally good in the N. Occasionally, a stray Mediterranean extratropical storm will bring rainy squally weather to the seas N of 20°N. South of the ITCZ, weather is also good. The circumpolar storm belt shifts S and the worst weather is concentrated S of 50°S.

The weather around the Cape of Good Hope is influenced by extratropical cyclones early and late in the season, when gales blow 5 to 10 per cent of the time. In midsummer, a moderate 20 to 30 knot SE through SW flow is created by the heat low over Africa and the highs over the ocean; occasionally, gale force winds are experienced. These strong winds often occur under clear skies, particularly between the Cape of Good Hope and Durban. Good weather is the rule throughout the summer, as showers occur 5 to 10 per cent of the time and skies are partly cloudy.

On the routes to and from the Cape of Good Hope through Mozambique Channel, tropical cyclones are a threat from Durban to 5°S. They are most likely during January and February when chances of one are around 25 to 30 per cent. These storms often move S through Mozambique Channel, then recurve to the SE. While tropical storms are more likely than hurricanes, winds of 100 knots have been encountered by ships in Mozambique Channel. Winds N of Durban generally are light and variable. Between Port Elizabeth and Maputo (Lourenco Marques), rain falls 10 to 20 per cent of the time in January and February. At other times along this coast and in Mozambique Channel, rain occurs less than 10 per cent of the time under partly cloudy skies. Visibilities are good except in showers.

Between Mozambique Channel and the N ports, including Mumbai (Bombay), Colombo, and those in the Red Sea and the Persian Gulf, tropical cyclones pose a threat, N of the Equator, from September through December. They are most likely in November SW of Mumbai (Bombay), where there is a 10 to 12 per cent chance of at least one. Early in the season, SE winds cross the Equator and become SW winds. By October, NE winds are blowing over the N Arabian Sea; by December they reach Mozambique Channel. North through E winds at 5 to 15 knots prevail along these routes. This holds until March, when the reversal begins in the S. The ITCZ is a forerunner of the Northeast Monsoon, bringing clouds and showers, particularly over the easternmost routes. Otherwise skies are mostly sunny, with rain occurring less than 10 per cent of the time. Visibilities are good except for some September fog around Suqutra.

Along the routes to and from the Cape of Good Hope by way of Mauritius, tropical cyclones are a problem in both hemispheres. In the S, they are most likely to occur from December through March, when the monthly probabilities range from 20 to 90 per cent. The routes to Colombo and Calcutta run right

through the heart of this activity near Mauritius. Northern Hemisphere storms are most likely from September through December along the Calcutta route and from October through December on the way to Rangoon. Monthly frequencies range from about 30 to 50 per cent. Tropical cyclones are less of a threat along the Colombo and Bombay routes. Early in the season, along the southernmost portion of these routes, gales blow 5 to 10 per cent of the time. Between the Cape of Good Hope and Mauritius, SW through W winds become NE through SE by February. North of Mauritius, E through SE winds prevail to the Equator until December. At this time, the Northeast Monsoon above the Equator crosses it, becoming W to NW. By January, these winds extend to about 10°S. Rain along these routes is most likely N of Mauritius, where showers occur 10 to 25 per cent of the time under frequently cloudy skies; it is concentrated between 10°S and the Equator from October through February. The Northeast Monsoon brings clearer drier weather. Visibilities are good except in showers.

Between the Cape of Good Hope and Selat Sunda, tropical cyclones are a hazard from December through March between 30°S and the strait. Monthly frequencies range from about 15 to 30 per cent; the most active area lies S and SE of Mauritius. The route to the Cape of Good Hope runs nearly a 60 per cent risk in this area during January. Shower activity is concentrated east of about 60°E, where by February the ITCZ is dominant. Rain falls 15 to 20 per cent of the time under partly cloudy skies. Gales are most likely W of 60°E early in the season, when they blow 5 to 10 per cent of the time on winds mainly out of the SW through N. North of about 30°S, they blow from the E through S.

Along the routes that run from the Cape of Good Hope to Cape Leeuwin and Torres Strait and back, weather is influenced by both extratropical and tropical cyclones. The southernmost routes run into frequent early and late season extratropical storms, particularly W of 100°E. Gales along these routes to Torres Strait and Cape Leeuwin blow 10 to 20 per cent of the time, with rain falling 20 to 30 per cent of the time under frequently cloudy skies. By January, conditions improve. The other two more N routes encounter a lot less weather throughout the season. Winds are variable along the W portions of all these routes. Over the E portions, E through S winds are common. In the Timor Sea and the Arafura Sea, these winds back to the W through NW with the arrival of the ITCZ in December. Gales are infrequent, occurring mostly in tropical cyclones which are most likely from December through March; gales blow 5 per cent of the time off northwestern Australia from January through March. Off North West Cape, there is a 40 per cent chance of a tropical cyclone in March. These storms are most frequent north of 25°S but are occasionally encountered around Cape Leeuwin. Tropical cyclones and the ITCZ are responsible for the occasional showers and frequently cloudy skies in the Timor Sea and the Arafura Sea. Weather improves to the S.

There are few weather problems in the Persian Gulf and Red Sea during winter. One hazard occurs in Red Sea's narrow Babel Mandeb from October through March, when winds in this area and N to 20°N blow out of the SE through S. This creates a funneling effect in the narrow channel, causing an increase in wind speeds. While winds reach gale force just 1 to 2 per cent of the time, they blow at 22 to 33 knots up to 34 per cent of the

time. Farther N and in the Persian Gulf, mainly W through N winds blow at 6 to 12 knots on the average. Occasionally, a low pressure system or front may bring gales, rain, and cloudy skies. Most of the time skies are clear and visibilities are good.

Between the Red Sea and Mumbai (Bombay), winter weather is usually good. There is just a slight chance of a tropical cyclone from September through December. Early in the season, S through SW winds blow at 10 to 15 knots, becoming W through NW, with showers 10 per cent of the time, near Mumbai (Bombay). By November, N through NE winds at 10 knots with sunny skies are the rule. Gales are rare and visibilities good. Weather is also good between the Red Sea and Colombo and on the W leg of the Red Sea-Torres Strait route. Near Suqutra, these routes encounter strong September SW and S winds, which reach gale force about 5 per cent of the time. There is a slight chance of a tropical cyclone from October through January. Southwest through W winds are gradually replaced by a N through NE flow with clear skies. Rain and clouds become more frequent E of the Maldiv Islands. Rain falls 10 to 15 per cent of the time near Sri Lanka and 15 to 25 per cent of the time along the Torres Strait routes. These frequencies extend to the Timor Sea by December with the arrival of the ITCZ, which also brings W through NW winds. Gales are infrequent and, except in showers, visibilities are good.

Between the Red Sea and Cape Leeuwin, tropical cyclones are more apt to be encountered in the S. In March, between 70°E and 90°E there is a 15 to 25 per cent chance of an encounter. A slight threat exists in this area from December through February and in the N seas during October and November. Above the Equator, early season SW through W winds give way to NE winds, which back to the W near the Equator. Southeaster winds prevail below the Equator, with SE through SW winds most common S of 30°S. There is a 5 per cent chance of gales S of 10°S. Average wind speeds range from 5 to 15 knots, slightly stronger in the N and in September between 10°S and 20°S. Mostly sunny skies with little rain prevail near both ends of these routes. Between 5°N and 15°S, rain falls up to 25 per cent of the time under mostly cloudy skies. Visibility is only a problem in showers.

Between the Persian Gulf and Colombo and the N leg of the Cape Leeuwin run, there is a slight chance of a tropical cyclone from September through March. October and November are usually the most active months. Except in these storms, gales are rare. South to SW winds give way to N and NE winds by December. Rain is infrequent, except near Sri Lanka, where it occurs 10 to 15 per cent of the time from September through December. Skies are mostly clear and visibilities are good.

Over the S leg of the Persian Gulf-Cape Leeuwin run and along the Colombo-Cape Leeuwin route, tropical cyclones are a threat, from December through March, S of 5°S. Between 10°S and 20°S, the monthly frequencies run 10 to 20 per cent. Gales blow up to 5 per cent of the time in this region. North of 5°S, early season SW through SE wind give way to NW through NE winds above the Equator and W winds just below it. South of the ITCZ, E and SE winds prevail to about 25°S, where winds are more variable. Between Sri Lanka and 15°S, rain falls 15 to 25 per cent of the time under mostly cloudy skies. Otherwise, skies are usually partly cloudy and rain is infrequent. Visibility, except in showers, is good.

Southwest Indian Ocean (including the E coast of Africa, Madagascar, and other Indian Ocean Islands)

General.—Weather in this region is under the control of the Indian Ocean High, the monsoons, and the circumpolar belt of extratropical storms. The large high is the most important as its downward outward flow of air produces relatively warm dry air masses with mild fair weather and light variable winds. It persists throughout the year, shifting slightly from winter to summer. To the N it generates the Southeast Trade Winds, which are separated in the austral summer from the Northeast Trade Winds by the Intertropical Convergence Zone (ITCZ). This semicontinuous band of clouds and showers can also spawn tropical cyclones. To the S, W winds prevail, but they become more variable and stronger with increasing latitude, due to a steady stream of migrating extratropical storms, which bring cold air, precipitation, and sometimes gales.

Tropical Cyclones.—Eleven tropical cyclones (winds of 34 knots and greater) form in an average season. About four of these reach hurricane strength (winds of 64 knots and greater). Some have generated winds of 130 knots or more. They affect most of the region between 5°S and 30°S. South of 30°S, they usually peter out or become extratropical systems. The season generally runs from December through April, although tropical cyclones can form in any month. January and February are the most active times. In general, tropical cyclones form between 5°S and 15°S. They move toward the W through S at about 10 to 15 knots. Most recurve toward the S through SE. This recurvature usually takes place near 20°S early in the season and 15°S later on. Storms usually accelerate after recurving. Some make it to Mozambique Channel before recurving; others continue W to landfall along the African coast, which is most likely early and late in the season. In addition to strong winds, these storms can bring torrential rains and disastrous flooding to the coasts and islands of this region. Ile de la Reunion holds the world record for rainfall measured in a 24-hour period. A tropical cyclone dumped 1,870mm of rain at Cilaos in 1952. The 12-hour world record of 1,340mm was set at Belouve, Reunion, in 1964. Wave heights at sea can reach 9.1 to 12.2m in these storms.

Extratropical Cyclones.—While more frequent than tropical cyclones, many of these storms do not reach tropical storm or hurricane intensity. Their frequency increases with latitude, giving rise to such terms as the “roaring forties,” “whistling fifties,” and “screeching sixties.” These storms often intensify as they move E or SE across the region. They often come in a series or family separated by high pressure cells that break storm arrivals into 3 to 7-day periods. They make their farthest N penetration in winter, bringing snow, freezing temperatures, and gales to the islands and seas S of 30°S. During the austral summer, they are less frequent, less intense, and displaced farther S.

Winds.—The Northeast Monsoon spreads S from the Equator during October and November. North through E winds replace S and SW winds while wind speeds diminish. By December, N winds prevail; E winds are also common N of Dar es Salaam while N winds are frequent S of Lindi. The land-sea breeze is most noticeable in sheltered locations. The sea breeze along the E coasts serves to strengthen the normal onshore flow during the day. The land breeze acts as a retardant and helps foster winds with offshore components. For example, at Zanzibar, N winds in the morning give way to afternoon NE winds.

Gales are infrequent along the coast, occurring only with tropical cyclones or perhaps briefly in a thunderstorm. March is a transition month. By April, S and SE winds are common. This regime holds through September. At its peak, these winds blow up to 90 per cent of the time at average speeds of 10 to 15 knots. While gales are infrequent, speeds reach 22 knots or more about 10 per cent of the time. Nearshore winds often parallel the coast. The sea breeze often causes an increase in S winds. At Mombasa, in July, the frequency of S winds increases from 30 to 70 per cent during the day as the average speed increases from 5 to 9 knots. In the southern Mozambique Channel, the Southeast Trade Winds prevail. Winds blow from E through S year-round. Extratropical storms have a slight effect in winter, as do land and sea breezes during both seasons. Wind speeds range from 10 to 15 knots. Gales blow 1 to 3 per cent the time at their peak, which occurs in midwinter and midsummer. Between Durban and the Cape of Good Hope, winds are variable, but they tend to parallel the coastline. In winter W of Cape Agulas, NW and SE winds are common, while between Cape Agulhas and Port Elizabeth, winds are often out of the SW through NW. East of Port Elizabeth SW, W, and NW winds are all common. Summer winds are more likely to have a S component. Strong winds are more likely in summer, although gales are rare. A steep gradient between oceanic highs and a heat low over Africa generate strong winds known as “Cape Southeasters,” which are gusty, can vary within a short distance, and are not associated with bad weather. Onshore components and increasing wind speeds during the day are common in the austral summer. The coast of South Africa is subject at times to very hot dry “berg” winds that blow down from the central plateau. They are most frequent in winter but bring the highest temperatures in fall and spring. They are most common along the W coast, but can also occur on the coast in this region.

Over the islands S of 30°S, winds are strong and blow mainly out of the SW through NW all year. On Iles de Kerguelen they blow from these directions 80 to 90 per cent of the time. Wind speeds average 15 to 20 knot; winds of 65 knots or more have been observed in all seasons. On Iles de Kerguelen, winds of 40 knots or more blow on an average of 12 to 18 days per month. Ile Amsterdam and Ile St. Paul are the least windy. South of 40°S near 60°E, gales blow 25 per cent or more of the time.

Climate N of 30°S.—The climate is dependent upon exposure to prevailing winds and the position of the sun.

The general range of average annual rainfall amounts is between 762 and 1,016mm, but the overall spread is from 381mm near the Equator to 1,524mm in Heira, Mozambique. April through July is the rainy season from Kismaayo to Malindi. Monthly amounts range from 51 to 127mm on 5 to 10 days along the Somali coast, up to 356mm on 19 to 20 days in May at Lamu and Malindi. While maximum 24-hour amounts range from 102 to 152mm all along this coast, Lamu recorded 345mm one day in May. Thunderstorms occur infrequently.

October through May is the rainy season from Mombasa to Durban. Up to 330mm is recorded on 15 to 20 days during the rainiest months, which usually occur during the latter part of this season. Maximum 24-hour amounts of 127 to 203 mm have been observed. Thunderstorms occur on about 3 to 10 days per month during the rainy season.

Along the E coast of Madagascar and over the smaller islands between the Equator and 30°S, annual average rainfall ranges between 1,016 and 2,540mm, depending upon exposure. This rain is mostly showers and thundershowers. These are most likely from October through May, particularly at locations exposed to the Southeast Trade Winds. The W coast of Madagascar, particularly S of Morombe, is sheltered and rainfall is considerably less. The NW coast is subjected to the ITCZ in January and February; annual rainfall amounts of 1,016 to 1,270mm are common. Thunderstorm activity is frequent in the ITCZ. Maximum 24-hour amounts are usually produced by tropical cyclones and range up to 1,854mm plus the previously-mentioned totals.

December through April are usually the warmest months N of 30°S. Over the smaller islands, particularly those near the Equator, there is little seasonal change. North of Maputo, there is little latitudinal difference. Along this coastal section, summer daytime highs range from the upper-20s to the low-30s (°C). They are only a few degrees cooler to the S. Extreme highs reach the mid-30s (°C), but have gone well over 37.8°C at sheltered ports like Beira and Maputo. At night, temperatures often drop into the low to mid-20s (°C) everywhere. July is usually the coldest month of the year. Average daytime highs range from the low-20s (°C) near Durban and Maputo to the low-30s (°C) N of Quelimane. During hot spells, they can get into the low-30s (°C) just about everywhere. Readings in the mid to upper-teens (°C) are common at night, except it is slightly cooler S of Maputo and slightly warmer over the smaller islands. The coldest temperatures have occurred around Durban, where they have dipped into the low single digits (°C). Elsewhere extremes range from the upper single digits (°C) at Maputo to the low-20s (°C) over the smaller islands.

Relative humidities, varying with temperature, reach an early morning peak and a midafternoon low. This diurnal variation can be as much as 40 per cent at sheltered locations or as little as 10 per cent at exposed sites. Exposure to the ocean keeps diurnal and seasonal variations small. The seasonal reversal of winds, such as those along the NW coast of Madagascar, can bring a large variation. Average relative humidities in the 70 to 80 per cent range are common in the mornings as are 60 to 70 per cent readings in the afternoons. Along the Kenya and Tanzania coasts, humidities are highest from March through September, during the rainy season, when they reach the upper 80s during the morning. Seasonal changes are slight along the Mozambique coast. Over Madagascar and the smaller islands, humidities are high and even diurnal variations are small. The east coast of Madagascar is particularly humid and readings in the 85 to 95 per cent range are common in the morning. The SW coast is only a little drier, while the NW coast has high readings during the summer when it is exposed to onshore winds.

This region is cloudy. Average coverage amounts range from 35 to 65 per cent. Seasonal variations are small, but prolonged periods of cloudy or clear weather can occur at times. Clear skies are most likely during the afternoon. In general, from southern Somalia to Zanzibar, cloudy skies are most common from April through September, while clear conditions occur most often in midsummer. South of Zanzibar, summer is often the cloudiest time, while winter brings plenty of sunshine. Over the islands there is little seasonal fluctuation in cloud

cover, usually just a slight minimum during the cool season. On Madagascar, the E coast is considerably cloudier than the W coast, due to exposure. In January, however, the NW coast is under the blanket of the ITCZ, when cloud cover averages 80 per cent.

Somalia climate is divided into four seasons of about 3 months each, starting in mid August, as follows:

1. Der—The rainy Southwest Monsoon still prevails until the NE winds set in.
2. Jilal—A dry season with constant NE winds.
3. Gu—A wet season in which the NE winds prevail until the Southwest Monsoon sets in.
4. Agai—A hot season, with lesser rains at intervals, in which the Southwest Monsoon is constant.

Climate S of 30°S.—About 508 to 1,270mm of rain fall each year between Durban and the Cape of Good Hope. In general, totals decrease toward the Cape of Good Hope. From Durban to East London summer is the rainy season, when 76 to 152mm fall on 10 to 16 days per month from September through March. To the W, May through August is the rainy season, when 51 to 102mm fall on 10 to 12 days per month; maximum 24-hour amounts along the entire coast range from about 102 to 178 inches. Snow is rare. Thunderstorms are most likely between Durban and Port Elizabeth where they occur on 3 to 8 days per month during the summer. Over the islands S of 30°S, annual precipitation amounts range mostly from 889 to 1,397mm, except on Marion Island, where 2,210mm fall in an average year. Seasonal variations are small, with a slight maximum from December through May, when 127 to 254mm per month is common. For Iles de Kerguelen, winter is the rainiest period and late summer is the least rainy; maximum 24-hour amounts range from 51 to 102mm. On Heard Island, Marion Island, and Iles de Kerguelen, snow has been observed in every month. It also occurs in the Prince Edward Islands and Iles Crozet in winter. Farther N, on Ile Amsterdam and Ile St. Paul, snow is infrequent.

December through March is usually the warmest time of the year from Durban to the Cape of Good Hope. Temperatures often climb into the low to mid-20s (°C) during the day and fall into the high teens (°C) at night. They can be expected to reach 32°C or above on just 1 to 5 days each year. High temperatures can also occur in September and October, when "berg" winds can cause readings in the 37.8°C range along the S coast. Winter temperatures range from the high-teens (°C) to the low-20s (°C) during the day, falling into the single digits (°C) to the mid-teens (°C) at night. Extreme lows range from -0.6°C at Port Elizabeth to 5.6°C at Port Saint Johns. Over the S islands, temperatures vary widely. In general, Ile Amsterdam is the warmest and Heard Island is the coldest. Average summer daytime highs range from the high-teens (°C) over Ile Amsterdam down to the low single digits (°C) at Heard Island. Lows are usually 3° to 5°C cooler. The warmest temperatures are most likely in January and February. During the winter, the weather is better at Heard Island, with maximums and minimums hovering right around the freezing mark. Over the other islands, lows fall to near freezing, but during the day temperatures climb to around 4.5°C. At Ile Amsterdam, temperatures are about 8°C warmer. Extreme lows have reached -10°C at most places, except Ile Amsterdam, where the record low is 2.7°C.

Exposure to the sea temperature and elevation are important relative humidity factors along the South African coast. For

example, at exposed Cape Agulhas, humidities are high all year; they vary only 10 to 20 per cent during the day. There is a slight peak from March through September, when morning readings are greater than 85 per cent and afternoon humidities stay above 73 per cent. At higher elevations like Port Saint Johns, average morning readings vary from 82 per cent in January to 60 per cent in July; this compares to 80 per cent in January and 86 per cent in March at Cape Agulhas. On the E coast in general, humidities are highest in late summer and autumn and lowest in winter.

Over the islands, diurnal and seasonal variations are small. Highest humidities are generally observed in the summer and fall to their lowest in the spring. In general, early morning humidities are in the 80 per cent range; afternoon readings are only 1 to 8 per cent lower.

Along the South African coast, it is cloudiest in the austral summer and clearest in winter. The change is least noticeable at exposed low locations like Cape Agulhas. However, average cloud cover even decreases significantly there. Cloudy skies (cloud cover of 6/8) occur on about 15 to 20 days per month during the summer season and less than 12 days per month in winter. These figures are reversed for clear days (cloud cover of 2/8).

Over the islands S of 30°S, cloud cover increases with latitude and changes very little seasonally or diurnally. Skies are cloudy (greater than 7/10 cloud cover) on 20 to 30 days per month all year. Clear skies (cloud cover less than 3/10) can be observed on 1 to 6 days per month.

Visibility.—Visibilities N of 30°S are generally good. Precipitation reduces visibilities to less than 2 miles about 1 to 2 per cent of the time in the S Mozambique Channel in January and 1 to 3 per cent of the time round the Chagos Archipelago in the austral spring and summer. The worst conditions along both shores of the Channel occur from April through October, when an early morning haze, known on the Mozambique coast as “Cacimbo,” obscures visibilities on about 12 to 18 days per month. It is only serious enough to be reported as fog on about 1 to 6 days per month, except at Morondava, where fog is reported on 7 to 10 mornings per month from May through October. Conditions usually improve by mid-morning.

Along the African coast fog (visibility less than 0.5 mile) is infrequent and occurs on about 1 to 3 days per month at the most. It is most likely in the late summer and fall. Haze and smoke are mainly fall and winter restrictions. Durban is the worst, recording 20 to 25 days per month of haze and smoke from March through September. Conditions are worst in the morning and usually clear by afternoon. These conditions exist all along the coast but less frequently than at Durban.

Snow, rain, and fog contribute to poor visibilities over the islands S of 30°S. Heard Island is the worst and shows only a slight seasonal or daily variation. Visibilities here drop below 6 miles 45 to 55 per cent of the time year-round and below 1.2 miles 10 to 18 per cent of the time from May through September. The Prince Edward Islands suffer about one-half as much. They report fog (visibility less than 0.5 mile) on 7 days per month in February, March, and April. Visibilities improve on the other islands. For example, over Iles de Kerguelen, fog is rare, and at Ile Amsterdam visibilities drop to less than 6 miles 10 to 20 per cent of the time, with improvements in the afternoon and in winter.

Northwest Indian Ocean (including the coasts of the Arabian Sea, the Red Sea, the Gulf of Aden, the Gulf of Oman, and the Persian Gulf)

General.—Weather in this region is strongly seasonal, reflecting the monsoons. During winter, dry NE winds, out of a high over Siberia, bring cool temperatures with little rain or clouds. In the summer, strong SW winds bring warm humid air to all but the most N areas, which remain under the influence of a dry N flow. Rain and clouds are frequent along the W coast of India and the coast of Pakistan. In the Gulfs and the Red Sea, weather is often hot and oppressive. Extratropical cyclones bring some weather to N areas in winter, while tropical cyclones occur most often in spring and fall.

Tropical Cyclones.—Out of the five or six tropical cyclones (including tropical depressions) that move across the Arabian Sea in a normal year, usually just one will reach tropical storm or hurricane strength. This sparse activity is divided by the Southwest Monsoon into two seasons—May through June and October through November. Sometimes a tropical cyclone will form in the summer during a lull in the monsoon. It can also occur in winter; however, nearly 75 per cent of all tropical cyclones form during the four seasonal months.

Arabian Sea tropical cyclones usually develop in the SE waters or come across India from the Bay of Bengal. Their most common paths are either WNW toward the Arabian Peninsula or they recurve to the N or NE and come ashore over Pakistan or northwest India.

While these storms are most often tropical depressions, they can reach hurricane intensity, and winds up to 130 knots have been estimated. They often generate torrential rains which contribute significantly to otherwise sparse amounts along the S Arabian coast. One of the great dangers accompanying these storms, especially along a low-lying coast, is the storm surge. This rapid rise in water level is caused by the combination of low pressure and strong onshore winds.

Extratropical Cyclones.—Intense extratropical cyclones rarely occur in the Arabian Sea, although low-pressure systems from the eastern Mediterranean, and some from the Sahara and western Arabia, do pass through the Persian Gulf in winter. They are frequently accompanied by gales and thunderstorms, which are sometimes associated with their cold fronts. These lows may enter the northern Arabian Sea as weak systems. About 4 to 7 per month, from November through March, cross through the area.

General Winds.—During the N winter (December through March), the Northeast Monsoon prevails over most of this region. These winds, which flow from a high over India and Arabia to an equatorial low over Africa, are mainly out of the NE. However, they become SE through E in the southern Red Sea, E in the Gulf of Aden, and NW in the Persian Gulf and the Gulf of Oman. In the northern Red Sea, including the Gulf of Suez and the Gulf of Aqaba, NW through N prevailing winds are generated by an extension of the Azores High. Low-pressure systems introduce some variability in this area. Average wind speeds range from 6 to 12 knots, except along the Somalia coast, where they run 12 to 15 knots. Gales are infrequent, occurring less than 2 per cent of the time. They are most likely in the northern Red Sea and through the Bab al Mandab. Strong local winds may be encountered.

March through May is a transition period as the Southwest Monsoon replaces the Northeast Monsoon. The "burst" of the summer monsoon usually takes place in early June. During the transition, winds are light, except in tropical cyclones.

By late June, the summer monsoon is well established and persistent. Off the Somalia and southern Arabian coasts, winds blow almost exclusively from the S through SW. Southwest and W winds are most common in the Gulf of Aden and along the W coast of India. The Gulf of Oman features SE through S winds, while in the Persian Gulf and Red Sea, winds are primarily out of the W through NW. These areas are under the influence of the low pressure area over India and Arabia.

The summer monsoon is the stronger and more persistent of the two. Nowhere is this more apparent than in the seas just E of Suqutra. During the July peak, wind speeds average an incredible 30 knots, while gales blow up to 30 per cent of the time. June and August are just slightly less devastating. From June through August, the area of gales occurring 5 per cent or more of the time extends from the coast of Somalia to near the entrance to the Gulf of Oman. Elsewhere along the Arabian Sea and northern Red Sea coasts, average speeds run 15 to 20 knots during the heart of the monsoon. Along the other coasts of this region, these averages drop to 8 to 12 knots, and gales are infrequent. Winds may be strong locally in many coastal areas.

October is the principal fall transition month as winds become unsteady and light. There is an increase in NW through NE winds and, in SE part of the region, the rather frequent NW winds are referred to as a "cross monsoon." Tropical cyclones can bring severe winds. In the northern, Red Sea mean wind speeds reach an annual peak in September, when they blow at 13 to 15 knots; gales occur a little more than 1 per cent of the time.

Coastal Winds.—The land-sea breeze effect is extensive, particularly when pressure gradients are slack. At these times, the winds blow perpendicular to the coasts—onshore during the afternoon and offshore at night. The land-sea breeze system can also deflect, reinforce, or retard the prevailing monsoon. At a few locations along the Somalia shores of the Gulf of Aden and Red Sea, the sea breeze overcomes the summer monsoon during the afternoon. At some places, like Djibouti, the sea breeze strengthens both monsoons, creating strong winds year-round. Along the Sudan coast, the land breeze blows slightly offshore from October through May, while in July and August, it is perpendicular to the coast. The sea breeze is from the NE in winter and NE through E in summer. In the Persian Gulf, land and sea breezes are most conspicuous in winter, between lows, while in summer they are masked by the prevailing NW winds. On the Makran Coast, they are noticeable from October through March. Along the W coast of India on the Kathiawar Coast and the Sind Coast, winter land breezes reinforce the Northwest Monsoon, while off the Konkan Coast the deflection of the NE wind toward the NW during the afternoon is attributed to the sea breeze. On the Malabar Coast, the sea breeze is from the W. After February, the sea breeze becomes more pronounced as it begins to strengthen the Southwest Monsoon.

Local Winds.—The following local winds occur in this area and are described, as follows:

1. **Karif.**—A SW summer wind that blows on the S shores of the Gulf of Aden. It is strongest where highlands back the coast, as they do near Berbera; from mid-July to

mid-August they sometimes exceed 50 knots. The karif sets in suddenly during the night, increasing in strength until it reaches a peak in the morning, then decreases in the afternoon. However, it sometimes lows incessantly for 3 to 4 days. It brings 38° to 46°C temperatures and raises a great deal of sand and dust.

2. **Khamsin.**—A hot dry sand-laden wind that blows in both Djibouti and Egypt. In Djibouti, it is a violent NW wind that occurs from May through September, sometimes blowing for 3 or 4 days at a time. It usually begins in the early afternoon and slackens around midnight. Wind speeds have been known to exceed 50 knots. Temperatures rise sharply, making the weather unbearable during these spells. In Egypt, the khamsin blows from the S in advance of eastward-moving lows. These winds are most common from February to May.

3. **Saba.**—A cool violent W wind that blows along the Djibouti coast. It occurs only on summer mornings beginning and ending suddenly. It is often accompanied by a few raindrops, which help keep down the dust.

4. **Ha boob.**—A short-lived squall from the SE through W blowing over Sudan between July and September. This wind may reach gale force with little warning and can raise sand and dust.

5. **Belat.**—A strong sandy NW wind found in winter on the S coast of the Arabian Peninsula. It may reach gale force for a few minutes or several hours. It can persist for several days. It usually begins and ends abruptly.

6. **Shamal.**—A NW wind of the Persian Gulf, usually restricted to the stronger winds. It is most frequent in the N from early June to about mid-July, when it is referred to as the great or 40-day shamal because of its persistence. Hot dry winds under cloudless skies fill the air with a very fine dust that extends far out to sea. At other times, shamals occur in 1 to 5 day periods, setting in suddenly, dying down at night, and strengthening again during the day.

7. **Nashi.**—A strong NE winter wind that blows in the Strait of Hormuz region. It can also occur along the Iranian coast of the Persian Gulf, in the Gulf of Oman, and on the coast of Pakistan. It generally lasts from 3 to 5 days but can be much shorter. The nashi is feared by local fishermen along the Arabian coast, where there is a lack of shelter.

8. **Kaus (Arabic)/Sharqi (Persian).**—A strong SE, sometimes E, wind that occasionally reaches gale force over the Persian Gulf. It is mainly a winter wind that precedes lows to the W or NW of the Persian Gulf and brings humid cloudy weather with rain squalls. It is often followed by a clearing SW wind called a suahili.

Climate.—Precipitation is sparse from Muqdisho to Karachi. Annual averages range from less than 508mm on the E Somalia coast to less than 25mm in the northern Red Sea. Most amounts are in the 51 to 204mm range. In arid regions one or two showers may be responsible for the entire yearly total. Sometimes one heavy cloudburst can dump twice the average annual total on one location. There is also a wide variability from year to year. For example, at Bushehr, Iran, where 267mm is normal, as much as 686mm has fallen, and as little as no rain, has been recorded in a single year.

In the northern Red Sea, the meager rainfall usually comes on a few days during winter. The brief storms that bring the rain are often accompanied by thunder and occasionally by

hail. In the southern Red Sea and the Gulf of Aden, winter is usually the wettest time, but not always. Some rain falls in a local winter convergence zone that oscillates between Bur Sudan and Aseb. Maximum 24-hour amounts range from 51 to 104mm along these coasts. Along the southern Arabian coast, late summer through early winter brings the 25 to 51mm that fall on about 7 to 14 days annually. The exception is Salalah, where most of the annual total of 91mm falls during July and August. The Persian Gulf has a definite winter (November through March) maximum, with ships reporting precipitation 1 to 4 per cent of the time. During this season, much of the annual total of 76 to 127mm falls along the Arabian coast, as does much of the 76 to 279mm along the coast of Iran. Along these coasts, maximum 24-hour amounts remain below 152mm, while thunderstorms occur on 3 to 9 days each year.

Along the coast of Pakistan and the W coast of India, wet and dry seasons are pronounced, particularly between 10° and 20°N. This is where the summer monsoon exerts its greatest influence. North of Mumbai (Bombay) and S of Cochin annual amounts decrease, and there is less of a seasonal difference. Between Cochin and Ratnagiri, annual averages range from 100 to 140 inches with 50 to 70 per cent falling in June and July. At Mumbai (Bombay), where 2,082mm fall each year on the average, less than 25mm per month falls from November through May. Thunderstorms are most frequent along the SW coast of India, where they occur on up to 100 days per year, mainly during the spring and fall changes of the monsoons. Maximum 24-hour amounts range from 102mm along the Pakistan coast to nearly 559mm at Mumbai (Bombay). Along the Pakistan coast, annual amounts of 152 to 203mm are common.

The Red Sea and the Persian Gulf are among the hottest places on earth. Air temperature over water averages 29.4°C to more than 32°C during the summer months. At several ports, extremes of 48.9°C or more have been recorded. In the northern Persian Gulf, at ports like Kuwait and Abadan, temperatures reach 38°C or more on 150 to 200 days annually and just about every day from June through August. These furnace-like conditions are also encountered along the S shores of the Gulf of Aden, where average daily maximums exceed 38°C in summer.

Throughout the area June through August is usually the warmest period, except where the Southwest Monsoon brings clouds or rain as it does along the SW coast of India, the southern Arabian coast, and the NE coast of Somalia. At these locations, spring is warmer. January is usually the coolest month. In general summer daytime temperatures range in the low to upper 30s (°C) except in the cloudy regions, where they are 6 to 9°C cooler. At night they are in the mid-20 to low-30 (°C) range. In midwinter, average daily maximums range from near 32°C on the NE coast of Somalia to the low mid-teens (°C) around Kuwait, while minimums range from the low to mid-20s (°C) to around 10°C.

Diurnal, annual, and extreme temperature ranges are influenced somewhat by latitude, but mainly by exposure. This continentality is most noticeable in the northern Red Sea and the Persian Gulf. Diurnal variations of up to 12°C are common. Annual variations in average maximums and minimums range from 18° to 24°C. Extremes vary from 48.9°C or more to near or below freezing.

In this region, relative humidities are a reflection of the combination of the inverse effect of temperature and the direct ef-

fect of an onshore wind. They can be extremely misleading. The reputation of the Persian Gulf and the Red Sea as sweltering and sticky seems little deserved, with readings in the 25 to 50 per cent range. This figure, however, is due to the high temperatures of the area. The absolute humidity is quite high. The hot local winds discussed in a preceding section are capable of dropping relative humidities into the 10 per cent range.

In general, the Southwest Monsoon brings high summer relative humidities to the Arabian Sea, the coast of Somalia, Arabia, Pakistan, and India. Morning readings of 85 to 90 per cent fall into the 65 to 85 per cent range by afternoon. The winter monsoon drops these readings about 10 to 20 per cent, except at island locations, where the seasonal variation is often less than 10 per cent. The W shores of the Red Sea and the Persian Gulf and the S shores of the Gulf of Aden all record highest humidities in winter and lowest readings in summer. This is the result of low temperatures and an onshore low. This is often the case on the E shores of the Red Sea and the Persian Gulf. Here, however, conditions are more variable, as offshore winds blow in winter and summer winds are influenced by local conditions. In the N reaches of the Red Sea, particularly near the entrances to the Gulf of Suez and the Gulf of Aqaba, conditions are extremely local. In At Tur, from September through April, relative humidities increase during the day. This also occurs at Al Qusayr all year.

During winter dry stable air from the interior of Asia brings mostly clear skies, with cloud cover mainly confined to isolated patches. Maximum cloud cover is found in the Persian Gulf, where low pressure systems from the Mediterranean Sea spread stratus-type clouds; mean amounts average 2/8 or more. This also occurs in the southern Red Sea due to a local area convergence zone. The most cloud-free area is off the NW coast of India where air is extremely stable; average cloud amounts are usually less than 1/8. Cloud amounts are even less in early spring, but this changes with the onset of the Southwest Monsoon.

During the Southwest Monsoon, the W coast of India, particularly between the Kathiawar Peninsula and Mumbai (Bombay), is the cloudiest area. Cloud cover in this region averages 6/8 or more. The northern Red Sea and the Persian Gulf are the most cloud-free areas in summer; the average sky cover is 1/8 or less.

Visibility.—As is common in most tropical regions, visibilities are generally good. They are restricted briefly in showers and locally in early morning fog. However, dust storms and sand storms create a problem in this region.

The terms dust storms and sand storms are usually used interchangeably, although technically sand storms are composed of coarser particles which restrict their height and aerial spread. Dust storms can rise to 300m and carry far out to sea. Visibilities in these storms, along the coast, are often reduced below 6 miles but only occasionally below 1 mile. The most severe conditions occur in strong local winds. These storms are also caused by whichever monsoon acts as a land breeze in arid regions. Over the central and southern Red Sea they are mainly a summer phenomena, while to the N, where they are less frequent, they are more apt to occur with the khamsin from February through June. Across the Arabian Peninsula, the shamal ceases summer sand storms. Along the Arabian Sea and Persian Gulf coasts, blowing dust or sand is reported on 20 to 30 days per month during spring and summer.

Fog is generally local. Ship reports indicate visibilities fall below 2 miles less than 10 per cent of the time. Some winter-type early morning radiation fog occurs along the Pakistan and west Indian coasts on clear calm nights. Even advection fog, which forms over cool upwelled water, is mainly a morning phenomena. This type of fog occurs up to 5 per cent of the time in summer along the southern Arabian coast. A locally extreme condition exists at Salalah, where fog is reported on an average of 24 to 26 days per month during July and August; dust is also present on about 10 to 16 days. Visibilities remain below 6 miles most of the day; in the morning they fall below 0.7 mile 15 to 20 per cent of the time.

Northeast Indian Ocean (Coasts of the Bay of Bengal, including the coasts of the Andaman Sea and the Strait of Malacca)

General.—Except in the SE, where there is little seasonal difference, weather is monsoonal. The Northeast Monsoon (winter) brings mostly cool dry weather with clear skies. The Southwest Monsoon (summer) is accompanied by clouds and rain. The Intertropical Convergence Zone (ITCZ), with its showers, thunderstorms, and tropical cyclones, is present during the spring and fall transitional seasons.

Tropical Cyclones.—About five of these storms develop each year; an average of three generate winds of 48 knots or more (these are called severe cyclones). These storms occasionally cause catastrophic loss of life along the N shores of the Bay of Bengal, where they can generate devastating storm tides. One of the worst was the Backergunge Cyclone of 1876. Its storm surge at the mouth of the Meghna River combined with an abnormally high tide to submerge the surrounding land area under 3.1 to 12.2m of water in less than 30 minutes. Some 100,000 lives were lost by drowning; another 100,000 died through the pestilence that followed.

While tropical cyclones may form in any month, they are most likely from April through December, with a peak in frequency and storm intensity during October and November. The storms that form during the heart of the Southwest Monsoon are usually weak and restricted to the head of the Bay of Bengal. Early season storms usually form far S in the Bay of Bengal and move toward the N or NW, sometimes recurving toward the NW, if they reach the head of the Bay of Bengal. In September, with the recession of the Southwest Monsoon tropical cyclones once again threaten the entire Bay of Bengal.

Frequently, storms form around the Nicobar Islands and either move WNW across the Bay of Bengal and southern India or turn N toward the Mouths of the Ganges.

While tropical cyclones of the Bay of Bengal are frequently less intense than western Pacific typhoons or North Atlantic hurricanes, they have generated winds up to 130 knots on occasion. When these wind speeds combine with high tides along the low-lying coasts of this area, the results are disastrous.

Extratropical Cyclones.—These infrequent storms affect the extreme N part of the Bay of Bengal from November through May. About 8 to 12 occur each year. They are known locally as western depressions because they approach from the W. They normally pass to the N but may cause clouds, rain, and squalls at the head of the Bay of Bengal.

General Winds.—The first signs of the Southwest Monsoon show up at the head of the Bay of Bengal in February where there is a slight increase in SW winds. March is the transition

month in the N, while April is the transition month in the S. By June, SW winds blow 55 to 70 per cent of the time along most coasts. The Strait of Malacca is sheltered from this strong flow and the result is weak SW and S winds. Off the S and W coasts of Sri Lanka, W and SW winds blow 80 to 90 per cent of the time. Wind speeds during the summer average 12 to 16 knots. They climb to 22 knots or more about 15 to 25 per cent of the time along the coasts of India, Bangladesh, and northern Burma. Gales are also most likely along these coasts but blow less than 4 per cent of the time. September, October, and November are the fall transition months. By December, N through NE winds prevail throughout the area; E winds are also common in the Andaman Sea. The Northeast Monsoon is weaker and less persistent than its summer counterpart. Average wind speeds range from 5 to 10 knots, with speeds reaching 22 knots or more less than 10 per cent of the time.

While wind speeds are lightest during the spring and fall transitional months, extreme winds are most likely at these times. In tropical cyclones, winds have reached 130 knots. Severe spring thunderstorms, known as nor'westers, can generate winds of up to 100 knots in gusts along the Bengal and Orissa coasts. At the beginning or "burst" of the summer monsoon, winds can reach gale force, particularly along the lower W coast of India. This is associated with the passage of the ITCZ.

Coastal Winds.—Land and sea breezes are pronounced during the weak Northeast Monsoon and are practically nonexistent during the heart of the strong Southwest Monsoon. They are both effective along the W coast of Sri Lanka from December through March. In June, the sea breeze strengthens the Southwest Monsoon during the afternoon, causing wind speeds to occasionally climb to 30 knots, with gusts as high as 60 knots. Land and sea breezes are effective in the Strait of Malacca year-round. Where the prevailing wind and sea breeze coincide, speeds often reach 20 knots during the afternoon. The land breeze is most noticeable on clear quiet nights, attaining speeds of 4 to 8 knots. However, where the land slopes steeply to the coast, as it does in northern Sumatra, night winds can be gusty enough to cause problems to small boats.

Local Winds.—The following local winds occur in this area and are described, as follows:

1. **Sumatras.**—Squalls that occur in the Strait of Malacca from April through November. These storms usually develop at night and last from 1 to 4 hours. Winds are mainly out of the SW through NW, with gusts occasionally reaching 50 knots. They are most likely between Malacca and Singapore, particularly in June and August, when about six to eight may be expected.

2. **Nor'westers (kal-baisakhi).**—These severe thunderstorms occur on the coasts of Orissa, West Bengal, and the Sundarbans from March through early June. They usually develop inland during the late afternoon and move seaward from the NW. Occasionally, wind gusts reach 100 knots and these squalls can occur up to 100 miles at sea. A few nor'westers actually develop into tornadoes or waterspouts. During April and May, they often occur in 4 to 5 day spells at about the same place and time. They generally last for 3 to 4 hours. The Southwest Monsoon puts an end to the nor'wester season.

3. **Waterspouts.**—Waterspouts vary in intensity from the tornado type to a comparatively mild type that corresponds to dust devils ashore. The severe tornado type is most likely to be encountered during the spring transition season. It is associated with severe thunderstorms like the nor'wester. They have also been reported in fall. Waterspouts are found in both the Bay of Bengal and the Strait of Malacca.

Climate.—The coast from Chittagong to the N entrance to the Strait of Malacca is one of the rainiest in the world. During a normal year, amounts range from 2,540 to 5,588mm, depending upon exposure to the Southwest Monsoon, which brings 1,270 to 1,524mm and 20 days or more per month from June through August. Abnormal years can bring up to 2,540mm less rain or as much as 2,540mm more rain. The dry season is also well marked, with monthly totals averaging less than 1 inch at most locations during the Northeast Monsoon. The Southwest Monsoon is also responsible for much of the 1,016 to 2,540mm average annual falls along the coast of India from about Masulipatam to the Mouths of the Ganges. In the Strait of Malacca, September through December is usually the rainy season, while the least rain falls in early summer. Along the Thailand coast S of Ko Phuket and the coast of Malaysia, annual average amounts range from 1,778 to 2,540mm, with spring and fall the rainiest times. Another particularly rainy coast lies along northwest Sumatera, where annual averages of 3,810 to 5,080mm are common. There is no dry season; however, the ITCZ brings an October-November peak, with about 508mm of rain falling on about 20 days per month.

The frequency of days with thunderstorms varies from about 10 per year along the SE coast of India to more than 180 in the Strait of Malacca. They are most common during the spring transition, with a secondary maximum in the fall. They are also frequent in summer at the head of the Bay of Bengal. In addition to the high frequency along the Malaysia coast, thunderstorms occur on 140 to 160 days annually along the southern Tenasserim coast of Burma. Along the NE coast of India, severe spring thunderstorms accompanied by strong squalls are known as Kal Baisakhi (fateful thing).

Torrential rains occur in showers, thunderstorms, and tropical cyclones. They are most likely with the ITCZ in spring and fall. Along the exposed coasts, they even occur during the Southwest Monsoon. Record 24-hour amounts range from about 152 to 559mm.

Temperature ranges and variations, particularly near the Equator, are small. Rain and cloud cover are important factors in seasonal variations. While December is the coolest time of the year along the coast of India, monsoon rains make summer a few degrees cooler elsewhere. Even during the coolest months, mean daily maximums climb above 23.8°C at the head of the Bay of Bengal and above 29.4°C elsewhere. Some places, like Rangoon and Cuttack, have even recorded 37.8°C temperatures in February. Cuttack is a hot spot where average daily maximums exceed 37.8°C in April and May, while extremes have reached 47.8°C. March through June is usually the warmest time throughout the area. Average daytime temperatures, at their peak, reach the 32.2° to 37.8°C range everywhere. Extremes range from 37.8° to 48.9°C. Mean daily minimums run 6° to 14°C lower throughout the year.

Hot weather and the Northeast Monsoon, except where it is onshore, produce the lowest relative humidities. This is a factor along the NE and N coast of India, the coast of Bangladesh,

and Burma. Relative humidities are lowest in late winter and spring, with readings in the 70 per cent range during the morning and the 50 to 60 per cent range in the afternoon. Along the SE coast of India, this minimum occurs in the summer. Maximums along these coasts and year round humidities elsewhere are very high. Early morning readings are frequently in the mid-80 to upper-90 per cent range; they fall 20 to 25 per cent during the afternoon.

Cloud cover is influenced by the monsoons, resulting in a winter minimum and summer maximum over much of the area. The reverse is true along the E coast of Sri Lanka and skies are mostly cloudy all year in the Strait of Malacca. During February and March, mostly clear skies prevail along the coast and in offshore waters from Madras to Rangoon. Elsewhere, except in the Strait of Malacca, skies are partly cloudy. During the transition period, cloud cover increases. By July, the Southwest Monsoon is in full swing, and cloud cover is most extensive. Overcast conditions prevail along and off the Pakistan-Burma coast, while mostly cloudy skies are common elsewhere, except for the coast of Sri Lanka, which remains under partly cloudy skies. Sky conditions begin to improve in late summer. By September, overcast conditions no longer prevail anywhere, and the following month partly cloudy skies S.

Visibility.—Throughout this region, visibilities are usually good. Restrictions are almost always in the form of rain, which when heavy may reduce visibility to below fog limits. In a tropical cyclone, the combination of torrential rain and blowing spray may reduce visibility to near zero. Fog is infrequent, particularly at sea. Haze and smoke cause local restrictions near the coast.

Around Sri Lanka, poorest visibilities occur from October through February on the E coast and through April on the E coast. Fog is rare and showers cause brief reductions. In addition, there is an early morning mist which can be dense at times; this usually burns off rapidly right after sunrise. It is much more frequent on the W coast. Along the SE coast of India, precipitation is mainly responsible for the poor visibilities that are most common in fall. Some fog and haze does form locally at Madras in winter. The frequency of poor visibility increases N from Gopalpur.

In the offshore waters of the northern Bay of Bengal, including the Gulf of Martaban, visibilities are worst from June through October, when they fall below 2 miles up to 5 per cent of the time. On the coast, these figures are even higher during the monsoon rains. Fog is frequent over the Delta region, particularly around the Sundarbans and in the Hooghly River from November through March. Mist or fog tends to form in the evening on the low ground and over the river and persists until morning. The visibility is made worse by the smoke from Calcutta. At Calcutta itself, visibility is less than 2 miles on most evenings from October through January and every morning through March.

Along the Arakan coast of Burma, fog is relatively frequent from November through March, occurring on about 3 to 10 days per month. It is most frequent and persistent in the morning over and near river deltas. Visibilities drop below 6 miles almost nightly along some sections of this coast. Restrictions during the rainy season can be severe for brief periods. Visibility also drops below 2 miles up to 5 per cent of the time during this monsoon. Over the waters of the Gulf of Martaban and the Andaman Sea, visibilities are generally good, except in

rain showers. Fog is only a local onshore problem from about November through April. In sheltered locations it forms during the night and early morning hours, but dissipates quickly by late morning. For example, at Ko Phuket Airport, early morning visibilities drop below 7/8 mile on 18 to 21 days per month from January through April. By early afternoon, the fog is gone and visibilities are usually greater than 6 miles. There are a few restrictions to visibilities in the Strait of Malacca and along the NW coast of Sumatera. Early morning haze frequently drops visibilities to less than 6 miles, but rarely to less than 2 miles. Ground fog may form during the early morning hours over marshy areas and around river estuaries. These restrictions are most common with fine weather conditions during the Southeast Monsoon. Precipitation is also responsible for brief reductions in visibilities.

Southeast Indian Ocean including the N, W, and S coasts of Australia and the SW coast of Sumatera)

General.—The climate varies from tropical in the N to temperate in the S. During the austral summer, the Intertropical Convergence Zone (ITCZ) lies N of Australia, influencing weather along the N coast and over Sumatera. The Northwest Monsoon (summer) brings hot, humid, and rainy weather to the N coast; tropical cyclones frequent the seas off N and W coasts of Australia. A high pressure ridge S of Australia generates a cool stable SE trade wind regime over the S part of the region in summer. During the austral winter, these trades move N to bring dry weather along the N coast, but showers to the exposed Sumatera coast. To the S, extratropical systems bring variable winds and precipitation to coastal areas.

Extratropical Cyclones.—These migratory low pressure systems with their attendant fronts travel a general circumpolar route, the mean path to which lies near 60°S. The frequency and intensity of these storms are greatest during the Southern Hemisphere fall and winter. They also make their farthest N penetrations during these seasons. Some move E or E along the S coast of Australia, with their fronts trailing N across the continent. It is not uncommon for either frontal or low pressure systems to affect weather along the S coast every 4 to 5 days in fall and winter. During the austral summer, this activity is at a minimum everywhere, even in the seas to the S.

Tropical Cyclones.—All coasts of Australia and the islands of this region have been affected by tropical cyclones. The S coast is usually only affected by a storm that has been weakened by an overland journey or by the extratropical remnants of a former tropical cyclone. In an average season, about four or five tropical cyclones develop in this region; one or two usually reach hurricane strength. Sometimes these severe storms are known as “willy-willies.” Winds in severe hurricanes have exceeded 130 knots, and more than 508mm of rain has fallen along the NW coast during a storm passage. Seas of 9.1m or more can be expected in the open water.

While a tropical cyclone can form in any month, December through April is the most active period off the NW coast of Australia. Most storms are spawned in the ITCZ and accelerate along a parabolic path toward higher latitudes. While most tropical cyclones form S of 10°S, some have been encountered off the SW coast of Sumatra (near 4°S). Most storms affecting the Australian coasts form in the waters between the Bonaparte Archipelago and the Lesser Sunda Islands of Indonesia. Storms

can also develop in the Timor Sea and the Arafura Sea, as well as in the Gulf of Carpentaria.

Early season tropical cyclones tend to parallel the coast but remain offshore and N of about 30°S. An average of one storm can be expected before mid-January. From mid-January to mid-February tropical cyclones move very close to the coast and frequently recurve inland around North West Cape; one storm can be expected in an average year during this period. From mid-February through March, two to three tropical cyclones develop; at least one usually reaches hurricane intensity. Early and late March are the times that storms are most likely to move ashore over Western Australia. During late March and through April, the S limit of many tropical cyclones is pushed to 35°S in the vicinity of Perth, Cape Leeuwin, and Albany. April storms are infrequent. These paths and frequencies represent average conditions and are intended only to give a feeling for the habits of tropical cyclones.

General Winds.—During the austral summer season (December through March), the South Indian Ocean High reaches its southernmost position and its minimum intensity. This allows the Southeast Trade Winds to extend S to near Cape Leeuwin. Southeast and S winds prevail off the W coast. East of North West Cape, winds blow mainly out of the SW through NW and are even lighter. Winds of 10 knots or less occur 70 per cent or more of the time over the Timor Sea and the Arafura Sea. Northwest winds are common early in the season in the N part of these seas and also along the SW coast of Sumatera. By February, the ITCZ is fluctuating across this entire area, separating these two light wind systems, which are sometimes referred to as the doldrums. Calms occur 15 to 25 per cent of the time. By April, the ITCZ has shifted N, leaving the Southeast Trade Winds to prevail. Along the S coast, summer winds are variable, with SE through SW winds the most common. Gales are infrequent everywhere.

During the austral winter, the Indian Ocean High pushes N and intensifies, limiting the Southeast Trade Winds to the N of North West Cape. In these waters, E through SE winds prevail. Winds of 10 knots or less occur 50 to 80 per cent of the time in N waters and up to 90 per cent of the time off the SW coast of Sumatera. Gales are rare. Between North West Cape and Perth, winds are quite variable. They reach gale force up to 5 per cent of the time along the S and W coasts. Winds along the S coast are mainly out of the SW through N, as storms pass close by during the season.

While gales are uncommon along the N and W coasts, extreme winds of 130 knots or more can occur in summer tropical cyclones. A record gust of 133 knots was recorded at Onslow while Darwin measured a 117 knot gust during the same season. Along the S coast, extremes are not as high, but strong winds are more frequent. They are most likely during fall and winter in extratropical storms. Sustained winds of 45 to 55 knots have been measured and it is likely that winds occasionally reach hurricane force (64 knots). Along the SW coast of Sumatera, winds of 30 to 40 knots may blow on occasion during a thunderstorm or in the early stages of a tropical cyclone.

Coastal Winds.—Land and sea breezes are noticeable along the N and W coasts of Australia. Usually, wind speeds increase during the day, but sometimes the land breeze reinforces the prevailing wind, and there is little diurnal variation. The sea breeze strengthens any onshore flow, which in most locations

along the N coast results in an increase in W through N winds. Nighttime and early morning breezes are often from the S through W. Along the W coast, S through NW winds during the day give way to land breezes from the NE through S or SW at night. At Fremantle, the invigorating SW sea breeze is known as the "Fremantle Doctor." During the winter, the Southeast Trade Winds along the N and NW coasts are reinforced by the land breeze at night. If the gradient is slack, they are deflected to the W through NE during the day. Along the W coast, N through SE winds in the morning give way to S through W winds by afternoon.

Along the S coast, land and sea breezes are effective during light wind conditions year-round and even affect the prevailing summer flow. On summer mornings, winds are often N through NE, while by afternoon they blow out of the SE through SW. Wind speeds increase during the day. In winter, light N winds from a high that may move over Australia are often reinforced by the land breeze.

Along the SW coast of Sumatera, the sea breeze reinforces the SE summer flow, with speeds climbing up to 20 knots along some sections.

Local Winds.—The "morning glory" are squalls that occur in the S part of the Gulf of Carpentaria. They are most likely from September through November and again in April. They are similar to a line squall or a series of parallel squalls that burst in on calm clear conditions. Wind speeds generally run 15 to 25 knots.

Climate.—Precipitation from Cape York to the North West Cape falls mainly from December through April. It is mainly in the form of brief heavy showers in the ITCZ or sometimes in tropical cyclones. Rainfall is variable from year to year and even within the season. A tropical cyclone can dump an average annual amount on a location at one time. During the dry winter season, monthly amounts of less than 25mm are common. Average annual amounts decrease W in general, particularly W of Port George IV, and range from 1,778mm to less than 254mm. January is usually the wettest month. Summer thunderstorm activity is pronounced. For example, Port George IV has an average of 95 thunderstorm days annually; 84 of these occur from November through March. Tropical cyclones are mostly responsible for the maximum 24-hour amounts, which range from 203 to 406mm.

Along the W and S coasts, most rainfall is from extratropical sources. This results in a winter rainy season. However, tropical cyclones or their remnants occasionally bring heavy summer rains. Thunderstorm activity is infrequent, with an average of 4 to 16 days annually. The rainiest part of the coast is from Perth around Cape Leeuwin to Albany where an average 889 to 1,016mm is recorded each year. North of Perth and E of Albany, amounts fall to as low as 229 to 254mm. In the S, the most arid region is the central coast of the Great Australian Bight. The summer brings little rain everywhere, with monthly totals usually less than 25mm. Heavy rains can occur in either tropical or extratropical cyclones; 24-hour maximum amounts have been recorded mostly from January through July. These amounts range from about 76 to 152mm.

Along the SW coast of Sumatera, average annual amounts range from about 3,048 to 4,445mm, with only a small seasonal fluctuation. Even during the midwinter dry season, monthly amounts of 178 to 254mm are common. November is usually the rainiest month, with 381 to 508mm averages. Heavy show-

ers are common; 24-hour maximums range from 229 to 279mm. Thunderstorms occur on about 40 to 50 days annually, with a slight peak in April and September.

Along Australia's N and NW coast, winters are mild and summers are hot. Warmest temperatures often occur in the late spring or early summer (November and December) when cloud cover is less than it is in midsummer. Daytime temperatures in the mid-30s (°C); nighttime lows in the low to mid-20s (°C) are common. Extremes are most likely from October through January. They range from near 38°C at exposed locations to near 49°C at sheltered ports. July brings the coolest weather, with average daily maximums ranging from the mid-20s (°C) along the NW coast to the upper-20s (°C) along the N coast. Average daily minimums are about 8.5° to 14.0°C cooler, except on exposed Thursday Island, where there is just a 5°C difference. Extreme low temperatures, which occur mostly in June or July, range from the middle to upper low single digits (°C) on the NW coast to 17.8°C at Thursday Island.

Along much of the S and W coasts, summers are pleasant and winters moderate. January and February are the warmest months. Average daytime highs range from low-20s (°C) along the SW tip to about 32°C near Camarvon and sheltered Port Augusta. Nighttime lows are usually in the upper-teens to low-20s (°C). Extreme highs range from 42.8°C at Cape Leeuwin to 50.6°C at Eucla. July is usually the coolest month; below freezing temperatures have been recorded along the coast of the Great Australian Bight and in Spencer Gulf, where the extreme lows range from -3.9° to -0.6°C. Elsewhere the range of extremes is from just above freezing to 8.9°C at Cape Leeuwin. Average daily maximums run in the low to upper-teens (°C), except a few degrees higher N of Perth. Nighttime lows are in the upper single digits (°C) along the S coast and in the 8.9 to 11°C range along the W coast.

Temperatures are consistent along the SW coast of Sumatera. At Padang, which is representative, daytime highs are 30.0° to 31.1°C on the average year around, while minimums are often in the low to mid-20s (°C). The warmest time is March through June. Extremes range from a maximum in the mid-30s (°C) to a minimum in the upper-teens to low 20s (°C).

The NW and N coasts are cloudiest in summer, with the N being slightly cloudier. Usually, there is an afternoon peak. Winter on the N coast and spring along the NW coast are the least cloudy times and clear days are quite frequent. Along the W coast, skies are mostly gray in winter while summer days often are bright and sunny. The Great Australian Bight shores are cloudiest from March through May and least cloudy in spring. In the Spencer Gulf and Gulf St. Vincent, fall and winter are cloudiest while summer conditions are good.

Southwest Sumatera is a cloudy region throughout the year. Overcast conditions are observed nearly every day during October and November. Conditions are somewhat better in the austral winter.

Relative humidities are dependent upon temperature and exposure to the sea. The diurnal range in temperature produces a morning maximum and afternoon minimum in relative humidity in most cases. Seasonal and diurnal variations are small at exposed locations.

Along the N coast and NW coast E of Onslow, maximum relative humidities occur on summer mornings and minimum relative humidities occur on winter afternoons. At exposed locations, summer relative humidities range from 80 to 90 per

cent in the morning falling to the 50 to 70 per cent range by afternoon. During the winter, 70 to 85 per cent readings in the morning fall into the 35 to 55 per cent range during the afternoon. These readings are a little higher at some island locations and a little lower at sheltered ports.

Along the W and S coasts, relative humidities are highest in the austral winter. From Onslow to Cape Leeuwin, they are usually in the 80 per cent range during the morning and the 50 to 70 per cent range during the afternoon; however, at exposed locations like Cape Leeuwin, they only drop to about 80 per cent. Humidities along the S coast have a somewhat wider range. Highest average readings occur at Ceduna and Adelaide, where they reach 85 to 88 per cent, while the range elsewhere is from 65 to 75 per cent. During the day, these readings fall into the mid-50 to low-70 per cent range. During the austral summer, the diurnal variation is overcome at some locations along the Great Australian Bight by the strong onshore flow and average maximum temperatures below 26.7°C. Readings at places like Eucla, Eyre, and Esperance average in the mid-50 to low-60 per cent range in the morning, climbing about 2 to 5 per cent during the day. Elsewhere, summer morning readings are in the 60 to 70 per cent range; they fall into the 40 per cent range during the day.

Along the SW coast of Sumatera, the diurnal variation is much greater than any seasonal one. The early morning humidities are in the 90 per cent range throughout the year; there is a slight maximum in the austral spring. These readings fall into the mid-60 to low-70 per cent range by early afternoon.

Visibility.—Visibilities, in general, are good throughout the region year around. Heavy showers are the most frequent reduction, but this is usually brief. Mist, haze, smoke, and occasionally fog interfere with visibility. Rain and drizzle cause some problems along the SW and S coasts of Australia. Fog is an occasional problem mostly in the lagoons and estuaries of the NW coast in winter. At Broome, early morning visibilities drop below 7/8 mile 8 to 9 per cent of the time in August and September. Along the S coast, visibilities fall below 6 miles 5 to 15 per cent of the time in rain in the austral winter, but below 7/8 mile on rare occasions when both fog and rain occur. Fog is more often an early morning condition that is local and burns off quickly. Sea fog in the summer is rare. Dust storms occur E of Albany in summer, when N winds bring a reddish haze to coastal areas. When strong offshore winds follow a prolonged drought, a thick dust can affect visibilities at sea. Industrial smoke is a problem near Adelaide.

Along the SW coast of Sumatera, haze, rain showers, and a rare fog hamper visibilities. Visibilities fall below 6 miles most of the time during the rainy season from June through October. In addition, showers may also cause some early morning ground fog over the areas they have dampened the night before; this shallow type of fog also forms near rivers and swamps.

Currents

General

Non-tidal Currents.—The major surface currents of the Indian Ocean are, as follows:

1. West Wind Drift S of 50°S.
2. South Indian Current between 27°S and 50°S.
3. South Equatorial Current between 8°S and 20°S.

4. Agulhas Current along the SE coast of Africa.
5. East Africa Coastal Current along the NE coast of Africa.
6. Monsoon Drifts N of 0°.
7. The north-setting West Australia Current off the W coast of Australia.

The surface currents are influenced by the Prevailing Westerlies, in the S part of the Indian Ocean, and the Southeast Trade Winds, in the N part of the Indian Ocean. Speeds usually do not exceed 1 knot, but occasionally may reach 3 knots for short periods.

The surface flow in the Indian Ocean between 50°E and 100°E and N of 8°S is dominated by the monsoon winds and the Indian Equatorial Countercurrent.

Seasonal changes in surface current direction in the NW and NE parts of the Indian Ocean, which occur at different times, do not immediately respond to changes in wind direction. In the Arabian Sea, during the Northeast Monsoon from November through March, the current generally sets W except in the N part, where a clockwise gyre develops. In April, a transitional month, the currents are variable and begin to turn E; from May through September the flow prevails E. In October, another transitional month, the currents are variable and begin to turn E to complete the seasonal cycle.

In the NE part of the Indian Ocean, during November and December, the current predominates NW through the Strait of Malacca and in the Bay of Bengal. Northeast of Sri Lanka a large complex counterclockwise eddy results from interference between the S return flow along the coast of India and the N flow into the Bay of Bengal. January is a transition period when the clockwise circulation begins to develop in the N part of the bay; in February, the clockwise flow becomes fully established throughout the bay and continues through April. In May, the clockwise circulation changes abruptly to an E flow, which prevails through July, except for the region NE of Sri Lanka where the currents are variable. August is a transition period, with a counterclockwise circulation developing at the head of the Bay of Bengal; currents in the remainder of the bay are variable. In September, the counterclockwise pattern continues to develop in the N part of the bay; an E drift remains predominant in the S part, although the flow can at times be variable. In October, the pattern for the seasonal counterclockwise flow is fully established, but considerable variation may occur in the center of the bay.

In November and December, between the Equatorial Countercurrent and the S part of the Arabian Sea, between 50°E and 75°E, the current begins to turn from E to W and is not well established; from January to April the flow is W at 0.6 to 1.0 knot, but averages about 1.5 knots in the central region of highest speeds. During April, the current is in a state of transition, turns E, and is not well defined. From May through September, the currents in the open ocean set constantly E; during October, they are in a state of transition and become variable as they begin to turn W. During November, in the region N of the Equatorial Countercurrent and S of the Bay of Bengal, between 75°E and 100°E, the easternmost segment of the east-setting drift quickly dissipates, with part being deflected into the counterclockwise flow in the Bay of Bengal and the remainder turning SE into the South Equatorial Current. In December, the west-setting flow is noticeable mainly along 5°N latitude E and S of Sri Lanka. In January, the flow begins

to widen and becomes fully established in February, extending between Sri Lanka and the Equator. During March, the current begins to turn and in April becomes well defined, setting E. From May through October, the flow is E and averages about 1 knot.

In the S part of the Indian Ocean, the Agulhas Current is strongest in the vicinity of the 183m curve off the coast of South Africa between 31°S and 33°S, when speeds occasionally exceed 5 knots. Current speeds at times reach 1.5 knots along the S coast of Australia and 3 knots along the W coast of Australia; the direction varies.

Tidal Currents.—Tidal currents are usually weak, except in channels and inlets along the coasts, where speeds are highest. In near shore waters, the tidal currents are usually reversing, flooding toward and ebbing away from the coast or flooding and ebbing in opposite directions parallel with the coast. In regions of mixed or semidiurnal tides, two flood and two ebbs occur daily. In the region of diurnal tides, one flood and one ebb occur daily.

Rotary tidal currents occur offshore where the direction of flow is not restricted; speed will vary as direction changes continuously through all points of the compass during the tidal day. The change in direction is generally clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere.

Northwest Indian Ocean

Non-tidal Currents.—The surface circulation is greatly affected by the monsoons, but the direction of flow does not coincide entirely with the monsoons, particularly the Northeast Monsoon (November through March). The open ocean circulation consists mainly of part of the west-setting South Equatorial Countercurrent near the Equator, and the monsoon drift immediately to the N of the Equatorial Countercurrent. The time of transition from the wind and current systems of one monsoon to those of the other varies with latitude. For example, the change from the winds and currents of the Southwest Monsoon to those of the Northeast Monsoon occurs earlier at 14°N than nearer the Equator.

The main non-tidal current systems in this area are, as follows:

1. **South Equatorial Current**—Controlled by the Southeast Trade Winds and sets W throughout the year. In this region, it is perceptible only during January, April, October, November, and December; it reaches its northernmost limit of about 8°S in April.

This current divides off the W coast of Africa. One part turns S, while the other turns and flows NE as the East Africa Coastal Current (Somali Current).

2. **East Africa Coastal Current (Somali Current)**—Originates mainly from the part of the South Equatorial Current which turns N off the coast of Africa in the vicinity of 10°S. The surface current appears to vary considerably in speed and direction from month to month. The greatest changes coincide with the period of the opposing Northeast Monsoon from November through March. This coastal current is most persistent in a N or NE direction and strongest during the Southwest Monsoon from May through September, and particularly during August. Speed and frequency begin to decrease during the transition month of October. In

November, at about 4°N, a part of the current begins to reverse; this part expands N and S until February. The region of reverse flow begins to diminish in March and disappears in April, when the N set again predominates.

3. **Equatorial Countercurrent**—A complex current greatly influenced by the monsoons and the circulation of the Arabian Sea. At times this east-setting current is perceptible, whereas all other times it loses its identity to the monsoon drift.

South of the countercurrent, the currents flow clockwise. From November through January, the Equatorial Countercurrent has a tendency to move S and become narrower; in January, the axis is at about 5°S, and it remains at this latitude through March.

From April through June, the Equatorial Countercurrent widens and moves N; in April its axis is at about 3°S. In May and June, the axis of the current moves farther N and its N boundary is difficult to discern because the direction of flow is essentially the same as that of the Monsoon Drift.

In July and August, the currents set S and W between the Monsoon Drift and the South Equatorial Current; only traces of the Equatorial Countercurrent remain.

During September and October, the Equatorial Countercurrent regains its identity, but its N boundary is difficult to distinguish from the Monsoon Drift.

4. **Monsoon Drift**—Pattern changes N of the Equatorial Countercurrent and S of the Arabian Sea do not coincide with the changes in direction of the monsoon winds. From January through March, the Monsoon Drift sets W, its S edge turning counterclockwise into the Equatorial Countercurrent. In March, this current divides off the coast of Somalia; part flows N, with the remainder flowing SW. During the transition period of April, the Monsoon Drift begins to turn E, but is not well defined. From May through September, the Monsoon Drift sets E across the northwest Indian Ocean. In November and December, the Monsoon Drift turns E to W and is not well established.

In the **Arabian Sea** from November through March, the current generally sets W in the open sea except in the N part, where a clockwise gyre develops during November, February, and March. Coastal currents are, as follows:

1. November—The coastal currents set NW along the W coast of India, E and W along the coast of Pakistan, and SW off the SE coast of the Arabian Peninsula.

2. December and January—The coastal currents set in a counterclockwise direction.

3. February and March—When the clockwise gyre is discernible, the coastal currents set in opposite directions to those of the two previous months.

4. April—A transition period between the monsoons; the currents are variable.

5. May through September—The coastal circulation remains the same as for March, but currents in the open sea set E.

6. October—a transition period between the monsoons; the currents are variable.

In the **Gulf of Oman**, current directions are variable; current velocities may attain 1.5 knots but usually do not exceed 1 knot. In the northernmost part of the gulf, tidal currents appear to predominate. Coastal currents are, as follows:

1. February and March—A branch of the coastal current off Ras al Hadd turns and sets NW along the S shore of the gulf. It then turns in the W part and sets E along the N shore.

2. April through October—The coastal current from the Arabian Sea appears to extend to the N shore of the gulf, where it sets W, turning in the W part of the gulf and setting SE along the S shore

3. November—The currents appear to set SE throughout the gulf.

4. December and January—The W current in the Arabian Sea continues along the N shore of the gulf, turns in the W part, and sets SE along the S shore.

In the **Strait of Hormuz**, surface currents are mainly tidal; however, a net flow is caused by changes in the winds.

Tidal Currents.—Tidal currents are generally weak, except at springs in the straits and in the vicinity of certain shoal regions. In nearshore waters, the tidal currents are usually reversing, flooding toward and ebbing away from the coast or alternately flooding and ebbing in opposite directions parallel to the coast. In regions of diurnal tides, one flood and one ebb period occur daily; in regions of semidiurnal or mixed tides, two flood and two ebb periods occur daily.

Rotary currents occur offshore where the direction of flow is not restricted; their speed varies and their direction rotates clockwise through all points of the compass during the tidal day.

In the N part of the **Gulf of Oman**, the flood current sets NNW with speeds up to 2 knots, while the ebb current sets SSE with speeds up to 1.8 knots. Along the SW shore, tidal currents are almost negligible.

In the **Strait of Hormuz**, tidal currents are strong. They are strongest off the E coast of Ras Masandam, where the current attains a speed of 4.8 knots.

In the **Persian Gulf**, surface currents appear to be mainly tidal. Inasmuch as the Persian Gulf has three types of tides (diurnal, semidiurnal, and mixed), the tidal currents may be complex and occasionally may differ in type at the same time in the same general location. Currents in adjacent regions are at times opposed to each other because of large differences between their times of slack water and unequal periods of flooding and ebbing. Under these circumstances, rips may occur where opposing currents converge.

In the **Gulf of Aden**, tidal currents are weak and are frequently masked by nontidal currents. Along the N shore, as far E as Mirbat, the flood current sets SE; between Mirbat and Ras al Hadd it sets NE. The ebb current probably sets in the opposite direction.

In **Bab al Mandab**, the flood current sets NW and the ebb current sets SE. However, they are greatly affected by the winds; winds blowing in the same direction as the current increase its speed and duration while winds blowing in the opposite direction decrease its speed and duration.

At the SE extremity of **Barim Island**, the NW flood current divides; one part sets through Small Strait, while the other sets along the SW coast of Barim Island. The current flowing through Small Strait divides at the N extremity of Barim Island; one part sets NNW, while the other rounds Balfe Point, turns SE along the SW coast of Barim Island, and meets the branch of the NW current SW of Barim Island about 2 to 3 hours before high water. This convergence causes overfalls,

which generally extend E to the entrance of False Bay. The behavior of the ebb current is not known.

In the **Red Sea**, tidal currents are negligible, except in some narrow channels.

Northeast Indian Ocean

Non-tidal Currents.—The circulation in this region is dominated by four main current systems, as follows:

1. **South Equatorial Current**—Controlled by the Southeast Trade Winds and sets W throughout the year, with its N and S boundaries at approximately 10°S and 25°S, respectively. The N boundary of the current fluctuates seasonally between 9°S and 11°S, being at its northernmost limit during the Southwest Monsoon and at its southernmost limit during the Northeast Monsoon. The S boundary of the current remains S of the region throughout the year. Maximum current speeds occur during the Southwest Monsoon period, when the Southeast Trade Winds extend farthest N and the South Equatorial Current of the Indian Ocean is joined by its counterpart of the Pacific Ocean. Minimum current speeds and most variable current directions occur during the second half of the Northeast Monsoon.

2. **Equatorial Countercurrent**—Quite complex, being influenced by the monsoons and the circulations of the Arabian Sea and the Bay of Bengal. At times it is easily distinguishable, whereas at other times its presence is not evident.

From December through March, the Equatorial Countercurrent has a marked tendency to migrate S and to become narrower. In December, the N and S boundaries are at 2°N and 4°S respectively, moving S to 3°S and 6°S by February. The N boundary is easily discernible at this time owing to the generally W current flow in the region immediately N of the Equatorial Countercurrent.

From May through July, the cell, within which the Equatorial Countercurrent and Monsoon Drift flow clockwise, moves toward the W side of the region.

In June and July, southeast-setting currents prevail in the region between the Bay of Bengal and South Equatorial Current, and the only traces of the Equatorial Countercurrent remain apparent.

From August through November, eastward-setting currents prevail N of the Equatorial Countercurrent. As a result, the N boundary of the Equatorial Countercurrent is difficult to distinguish from the E drift currents.

3. **Monsoon Drift**—Located N of the Equatorial Countercurrent and S of the Bay of Bengal. During February and March, when the Northeast Monsoon decreases in intensity, the Monsoon Drift is formed from the outflow of the Strait of Malacca and a small amount of NW flow along the upper SW coast of Sumatra. Off the SW coast of Sumatra, a current generally sets SE during all months. It is strongest during October through April, when its mean maximum speed is 1.5 knots. The Monsoon Drift broadens as it sets W and divides off the W coast of Sri Lanka, with part joining the circulation of the Bay of Bengal and part joining the flow from the Arabian Sea.

During April, the transition period between monsoons, the Monsoon Drift is ill-defined. A counterclockwise circulation exists between Sumatra and Sri Lanka.

From May through October, the Monsoon Drift sets E to SE.

During November and December, part of the Monsoon Drift is deflected into the Bay of Bengal; the remainder turns clockwise and flows SE.

4. **Strait of Malacca**—Non-tidal currents generally set NW at a mean speed of about 1 knot and a maximum speed of about 2 knots; speeds are usually higher in the N part of the strait. Currents are most constant and strongest from December through February and less stable and weakest from June through August. Nontidal currents may be strongly influenced by reversing tidal currents; the prevailing current direction may become reversed with a strong tidal current during springs.

5. **Andaman Sea and the Bay of Bengal**—The circulation is characterized by four distinct patterns, in this order, as follows:

a. A clockwise circulation—From February through April, the clockwise circulation pattern is well established; the NW flow out of the Strait of Malacca in February and March is deflected almost immediately and joins the clockwise circulation of the bay. In April, however, the flow out of the Strait of Malacca extends farther into the Andaman Sea before it joins the clockwise circulation, which at this time is limited to the Bay of Bengal. In general, the currents in both the Andaman Sea and Bay of Bengal are somewhat weaker and more variable during April than during February and March.

b. A general E flow during the Northeast Monsoon—From the established clockwise circulation pattern of April, the circulation pattern changes abruptly in May to an E flow over the entire Andaman Sea-Bay of Bengal region. During May through July, E to NE currents prevail over most of this region. Northeast of Sri Lanka, currents are variable.

c. A counterclockwise circulation—The transition from the E flow of the Southwest Monsoon season begins in August, with a counterclockwise circulation pattern developing in the head of the Bay of Bengal. Currents in the remainder of the bay and the Andaman Sea are somewhat variable.

In September, the counterclockwise pattern continues to develop, although E drift is the predominant feature of the S part of the Bay of Bengal. Variation in direction can be expected at any location in the Andaman Sea-Bay of Bengal region during September.

In October, the counterclockwise current is fully established. However, considerable variation is still apparent, with dual centers of the counterclockwise pattern in the Bay of Bengal and an erratic current pattern in the Andaman Sea.

d. A general W flow during the Southwest Monsoon—In November and December, currents set NW out of the Strait of Malacca and predominate over the region. Northeast of Sri Lanka, a more complex pattern results from interference between the S return flow along the coast of India and the N flow into the Bay of Bengal.

January is a transition month between the predominantly west-setting current of November and December and the clockwise pattern of February through April. The clockwise circulation pattern predominates in the N part of the bay during January and is bordered by a W flow over the S part.

Note.—The change from the clockwise pattern to the E flow and from the counterclockwise pattern to the W flow is abrupt, whereas the change from the W flow to the clockwise pattern and the E flow to the counterclockwise pattern is rather slow, with a month between each change that can be considered transitional.

During the months of November through March, the currents in the **Gulf of Mannar**, between India and Sri Lanka, set S at speeds ranging from 1 to 2 knots. In the transition month of April, a branch of the southeast-setting current off the W coast of India turns into the gulf and becomes variable. From May through September, currents set N in the gulf, through Pamban Channel, and across Adams Bridge. Currents in Pamban Channel may at times attain speeds of 6 knots; across Adams Bridge the north-setting current is strong but decreases in speed toward the Indian coast. In October, a continuation of the southeast-setting current along the W coast of India sets eastward across the S part of the Gulf of Mannar.

The time of transition from one monsoon period to the other varies with latitude. For example, the change from the Southwest Monsoon to the Northeast Monsoon occurs earlier at 19°N than nearer the Equator. The boundaries between the E current and the W current follow closely the boundaries between the E winds and the W winds.

Tidal Currents.—In the Strait of Malacca, the flow is the resultant of tidal and nontidal currents; reversing tidal currents along the NE coast of Sumatera are weak and considerably affected by the persistent W current. Farther SE in the main channel, the tidal currents are stronger and average up to 2 knots. They flood SE and ebb NW; there are two flood and two ebb currents each tidal day. In Singapore Strait and among the islands in the southern approaches to the Strait of Malacca both diurnal and mixed tidal currents occur. Speeds at strength are usually less than 3 knots but may be as high as 6 knots in narrow channels.

South Indian Ocean

Non-tidal Currents.—The main non-tidal currents in this area are, as follows:

1. **West Wind Drift**—Below 39°S, strong W winds maintain this prevailing E flow at a mean speed of 0.6 knot throughout the year, although speeds of 1 to 2 knots frequently occur near its N boundary; speeds are slightly stronger in summer than in winter. Local meteorological changes may result in current sets in other directions and even weak reversals for short periods. Variations in wind force cause the N boundary of the West Wind Drift to fluctuate between about 35°S and 40°S. Off the W coast of Australia, a part of the West Wind Drift turns N and N; this current is known as the West Australia Current.

2. **South Equatorial Current.**—This current sets W toward Madagascar, with seasonal variations in speed caused by the annual variations of the Southeast Trade Winds. From May through October, the mean speed is 0.9 knot and the maximum speed is 3 knots. During the remainder of the year, the mean speed is about 0.6 knot. Its S boundary fluctuates between about 18°S and 24°S, usually extending farthest S from December through April.

The South Equatorial Current sets W toward the E coast of Madagascar to the vicinity of Tamatave and Ile Sainte-Marie, where it divides; one part turns N, flows past the N tip

of the island with speeds up to 3.3 knots, then sets W and NW toward the African coast.

The N branch of the South Equatorial Current divides upon reaching the coast of Africa near Cabo Delgado; one part turns and flows N, while the other turns and flows S in the W part of Mozambique Channel and forms the Agulhas Current. West of this S flow, in regions such as off Baia de Sofala between Cabo das Correntes and the vicinity of Rio dos Bons Sinais, countercurrents set E and NE at irregular intervals for a considerable distance offshore and occur most frequently off Baia de Sofala during July. Speeds up to 1.5 knots occur frequently. In the E part of the channel, the currents are mostly variable.

3. **West Australia Current.**—Generally sets N and NW and is controlled mainly by the Southeast Trade Winds. This current varies seasonally with the strength of the wind and is most stable during November, December, and January and least stable during May, June, and July, when sets in any direction are most likely. North of 20°S, the main part of this current sets NW into the South Equatorial Current while the remainder turns toward the coast of Australia. The speed of the current seldom exceeds 1 knot. Between the coast and the West Australia Current, the currents are variable during most months; however, along the coast the most frequent set is S from January through August and N from September through December, with a S set S of about 30°S in November and December. The maximum speed observed is 3 knots.

4. **Agulhas Current.**—A very constant coastal current that sets S and SW along the SE coast of Africa between 11°S and the Cape of Good Hope. The highest speeds and greatest constancy are observed in the vicinity of the 183m curve E of 28°E; here, the surface current is strongest from February through April when about 17 per cent of all measured speeds in the prevailing direction exceed 3 knots, particularly between 31°30'S and 33°30'S, where the speed occasionally exceeds 5 knots. These maximum speeds may occur at any time but less frequently from May through July.

West of about 23°E, in the vicinity of Agulhas Bank, the current branches. The main part continues W past Cape Agulhas; the second part turns counterclockwise and sets SE under the influence of the prevailing W winds and part of the east-setting South Atlantic Current that flows into the Indian Ocean. In this latter region, the current is weaker and more variable. Current speeds usually do not exceed 2 knots, although speeds of 3 knots or more occasionally may be observed. Another factor which will tend to reduce the constancy of the current is the countercurrent between the coast and the Agulhas Current, where E and NE sets between 0.5 and 1.5 knots may occur at irregular intervals at any time of the year.

In the Great Australian Bight, currents generally set E except in the N part from October through March, when countercurrents occur. In the N part of the bight, the currents are variable at times, as they are greatly affected by local winds. Currents setting N and NE, with speeds up to 1.5 knots, have been observed.

Note.—Prevailing surface currents are influenced by the predominant westerlies in the S part and the persistent Southeast Trade Winds in the N part. Tropical disturbances and extra-tropical cyclones may cause current directions to differ considerably from those expected.

Tidal Currents.—The tidal currents are usually weak except in channel and inlets along the coast. In nearshore waters, the tidal currents are usually reversing, flooding toward and ebbing away from the coast, or flooding and ebbing parallel with the coast in opposite directions. In areas of semidiurnal and mixed tides, two flood and two ebb periods occur daily. In areas of diurnal tides, one flood and one ebb occur daily.

Rotary currents occur offshore where the direction of flow is not restricted; their speed varies, and their direction changes counterclockwise through all points of the compass during the tidal day.

Navigational Information

Vessel Reporting—Arabian Sea

Operation Enduring Freedom—Participation of Merchant Shipping.—In order to support U.S. and multinational task groups in surveillance and anti-terrorist operations in the Gulf of Aden and its approaches, German Task Group 500.01 is tasked with providing shipping information and acting as a point of contact for merchant shipping. Information will be forwarded to merchant shipping in this area.

All merchant shipping is invited to participate to improve reporting and the exchange of information. Such reporting is voluntary; however, civil maritime authorities are strongly encouraged to support this service which, by its stabilizing presence, benefits shipping in the region.

Shipping companies are requested to provide detailed information to the Task Group, as follows:

1. Vessel name.
2. International call sign.
3. IMO number.
4. General nature of cargo.
5. Westbound vessels heading to the Suez Canal or the Red Sea are requested to provide the following additional information:
 - a. Position.
 - b. ETD and name of last port of call.
 - c. ETA at the Suez Canal.
6. Eastbound vessels heading from the Suez Canal or the Red Sea are requested to provide the following additional information:
 - a. Position.
 - b. ETD from the Suez Canal.
 - c. Next port of call.

The information can be forwarded to the Task Group, as follows:

1. E-mail: ctg_500.01@arcor.de
2. INMARSAT: 00870-321-821-710

General information and the ship data form can also be obtained from the following web site:

Shipping Co-operation Center Gluecksburg

<http://www.scc-gluecksburg.de>

The emphasis of this program is on the exchange of information between military authorities, naval forces, and merchant

shipping. Providing this information will assist in the compilation of an accurate shipping plot for the security of shipping by the naval forces in the region. It will also reduce VHF traffic between merchant ships and warships.

International Ship and Port Facility (ISPS) Code

The ISPS Code applies to ships on international voyages and port facilities directly interfacing with these ships. All vessels should fully comply with the provisions of Chapter XI-Part 2 of the SOLAS Convention and Part A of the ISPS Code. Vessels shall demonstrate that appropriate maritime security measures are in place according to ISPS Code regulations. The following information must be furnished by the vessel when requested:

1. Information on the vessel and making contact.
 - 1.1 IMO Number
 - 1.2 Vessel name.
 - 1.3 Home port.
 - 1.4 Flag.
 - 1.5 Vessel type.
 - 1.6 Call sign.
 - 1.7 INMARSAT call sign.
 - 1.8 Gross tonnage.
 - 1.9 Company name.
 - 1.10 Name of Company Security Officer, including 24-hour contact information.
2. Information about the harbor and harbor facilities.
 - 2.1 Arrival harbor and harbor facilities where the vessel will berth.
 - 2.2 Date and time of arrival.
 - 2.3 Primary reason for entering the harbor.
3. Information required by Rule 9 Paragraph 2.1 of Chapter XI-2 of the Enclosure to the SOLAS Agreement.
 - 3.1 Does the vessel possess an International Ship Security Certificate (ISSC) or an Interim ISSC? (Yes/No)
 - 3.1.1 If yes, list issuer of ISSC or Interim ISSC and expiration date.
 - 3.1.2 If no, give reason why not.
 - 3.1.3 Is there an approved Vessel Security Plan? (Yes/No).
 - 3.2 Current MARSEC Level of the vessel and position of vessel at the time of providing the report.
 - 3.3 The last ten port calls where there was interaction between the vessel and a harbor facility, in chronological order, with the most recent port call listed first. Include the MARSEC Level of the vessel, as well as the harbor name, country, harbor facility, and UN Location Code.
 - 3.3.1 During the previous ten port calls, were additional security measures taken on board the vessel in addition to the measures required by the vessel's MARSEC Level. (Yes/No).
 - 3.3.2 If yes, please detail the additional security measures taken. Include the harbor name, country, harbor facility, and UN Location Code.
 - 3.4 Within the period of the last ten calls at port facilities, list ship-to-ship activities, including position or latitude/longitude of the activities, with the most recent activity listed first.
 - 3.4.1 Were proper security measures taken by the vessel during the ship-to-ship activities? (Yes/No).
 - 3.4.2 If no, list the ship-to-ship activities where proper security measures were not taken and describe the security measures that were taken.

- 3.5 General description of the cargo on board.
- 3.6 A copy of the crew list
- 3.7 A copy of the passenger list.
4. Other safety-related information.
 - 4.1 Are there any other safety-related matters to be reported (Yes/No).
 - 4.2 If yes, provide more detailed information.
5. Agents of the ship in future ports of arrival.
 - 5.1 Name(s) of ship's agent(s) in future ports of arrival including contact information (telephone number).
6. Identification of the person who prepared the information.
 - 6.1 Name.
 - 6.2 Title or function.
 - 6.3 Signature, including date and location of preparation.

Electronic Navigation and Communication

International Maritime Satellite Organization (INMARSAT).—Around the world satellite communication systems have now become synonymous with reliable and quality transfer of information. The International Maritime Satellite Organization (INMARSAT) is an international consortium comprising over 75 partners who provide maritime safety management and maritime communications services.

The INMARSAT system consists of a number of satellites, which maintain geosynchronous orbits, and provides quality communications coverage between about 77°N and about 77°S, including locations with less than a 5° angle of elevation.

INMARSAT-A, the original system, provides telephone, telex, and fax services. However, this system is being replaced by INMARSAT-B, which, by the use of digital technology, is providing the services with improved quality and higher data transmission rates.

INMARSAT-C provides a store and forward data messaging capability, but no voice communication.

Global Maritime Distress and Safety System (GMDSS).—The Global Maritime Distress and Safety System (GMDSS) provides a great advancement in safety over the previous usage of short range and high seas radio transmissions.

The GMDSS has been adopted by the International Convention for the Safety of Life at Sea (SOLAS) 1974. It applies to cargo vessels of 300 grt and over and all vessels carrying more than 12 passengers on international voyages. Unlike previous regulations, the GMDSS requires vessels to carry specified equipment according to the area in which they are operating. Such vessels navigating in polar regions must carry VHF, MF, and HF equipment and a satellite Emergency Position Indicating Radiobeacon (EPIRB).

Information on the GMDSS, provided by the U.S. Coast Guard Navigation Center, is accessible via the Internet, as follows:

U. S. Coast Guard Navigation Center

<http://www.navcen.uscg.mil/marcomms/default.htm>

Global Positioning System (GPS).—The NAVSTAR Global Positioning System (GPS) is a satellite-based system, operated by the US. Air Force, which provides very accurate positioning, time, and velocity information to multiple users. It is an all-weather system with world wide and continuous usage which will replace OMEGA and other such hyperbolic radio navigation systems. The space component of GPS consists of 24 satellites, of which a minimum of six are observable from any place on earth. GPS receivers convert data from the satellites to produce three-dimensional positions (latitude, longitude, and altitude). They compute information for fixes in terms of the World Geodetic System (1984) reference ellipsoid; hence, a datum shift correction may be required before a position can be plotted on a chart.

GPS provides two services for navigation positioning, as follows:

1. **Standard Positioning Service (SPS)**—The standard level of positioning and timing accuracy. It is available without restrictions to any user on a continuous worldwide basis. As of midnight (EDT) 1 March 2000, Selective Availability was set to zero; users should experience a GPS horizontal accuracy of 10 to 20m or better.

2. **Precise Positioning Service (PPS)**—An encoded level intended for use by the Department of Defense.

SafetyNET.—NAVTEX is an international automated direct printing service for the promulgation of navigational and meteorological warnings and urgent information to ships. It is a component of the World Wide Navigational Warning Service (WWNWS) and is an essential element of GMDSS.

The SafetyNET broadcast system provides the same information as NAVTEX to vessels on the high seas beyond NAVTEX coverage (generally about 200 miles offshore) and is delivered by the INMARSAT-C system.

General Information.—For further information concerning the International Maritime Satellite Organization (INMARSAT), the Global Maritime Distress and Safety System (GMDSS), the SafetyNET system, and the Global Positioning System (GPS), see Pub. No. 9, *The American Practical Navigator* (Bowditch-2002 Edition); Pub. 117, *Radio Navigation Aids*; and *Annual Notice to Mariners* No. 1.

Enroute Volumes

Pub. 171, *Sailing Directions (Enroute) East Coast of Africa.*

Pub. 172, *Sailing Directions (Enroute) Red Sea and the Persian Gulf.*

Pub. 173, *Sailing Directions (Enroute) India and the Bay of Bengal.*

Pub. 174, *Sailing Directions (Enroute) Strait of Malacca and Sumatera.*

Pub. 175, *Sailing Directions (Enroute) North, West, and South Coasts of Australia*

Pollution

Single-hull Tanker Phase-out Schedule

In accordance with Regulation 13G of Annex I of the MARPOL Convention, single-hull tankers should be phased out or converted to a double-hull configuration according to a schedule based on their year of delivery. These requirements are designed to reduce the risk of oil spills from tankers involved in low-energy collisions or groundings.

The types of vessels affected by these regulations and their phase-out schedule is, as follows:

1. **Category 1**—Commonly known as Pre-MARPOL Tankers, consists of the following types of vessels:

- a. Tankers of 20,000 dwt and over carrying crude oil, fuel oil, heavy diesel oil, or lubricating oil as cargo.

- b. Tankers of 30,000 dwt and over carrying other oils, which do not comply with the requirements for protectively-located segregated ballast tanks.

The phase out schedule for Category 1 vessels is, as follows:

- a. Vessels delivered on or before 5 April 1982—not allowed to trade after 5 April 2005.

- b. Vessels delivered after 5 April 1982—not allowed to trade after the anniversary date, in 2005, of their delivery date.

2. **Category 2**—Commonly known as MARPOL Tankers, consists of the following types of vessels:

- a. Tankers of 20,000 dwt and over carrying crude oil, fuel oil, heavy diesel oil, or lubricating oil as cargo, which comply with the MARPOL requirements for protectively-located segregated ballast tanks.

- b. Tankers of 30,000 dwt and over carrying other oils, which comply with the MARPOL requirements for protectively-located segregated ballast tanks.

The phase out schedule for Category 2 vessels is, as follows:

- a. 5 April 2005 for vessels delivered on 5 April 1977 or earlier.

- b. Anniversary date in 2005 for vessels delivered after 5 April 1977 but before 1 January 1978

- c. Anniversary date in 2006 for vessels delivered in 1978 and 1979.

- d. Anniversary date in 2007 for vessels delivered in 1980 and 1981.

- e. Anniversary date in 2008 for vessels delivered in 1982.

- f. Anniversary date in 2009 for vessels delivered in 1983.

- g. Anniversary date in 2010 for vessels delivered in 1984 or later.

3. **Category 3**—Consists of tankers 5,000 dwt and over but less than the tonnage specified for Category 1 and Category 2 vessels.

The phase out schedule for Category 3 vessels is, as follows:

- a. 5 April 2005 for vessels delivered on 5 April 1977 or earlier.

- b. Anniversary date in 2005 for vessels delivered after 5 April 1977 but before 1 January 1978

- c. Anniversary date in 2006 for vessels delivered in 1978 and 1979.

- d. Anniversary date in 2007 for vessels delivered in 1980 and 1981.

- e. Anniversary date in 2008 for vessels delivered in 1982.

- f. Anniversary date in 2009 for vessels delivered in 1983.

- g. Anniversary date in 2010 for vessels delivered in 1984 or later.

Single-hull tankers of 5,000 dwt and over are prohibited from carrying heavy grade oil (HGO) after 5 April 2005. Single-hull tankers of 600 dwt and over but less than 5,000 dwt are prohibited from carrying HGO after the anniversary of their delivery date in 2008.

Routes

Vessels leaving the Indian Ocean by rounding the S end of Africa from the N and E should remain in the strength of the Agulhas Current. This current lies 20 to 30 miles off the coast, but is favorable as close as 6 or 7 miles to the shore. Vessels entering the Indian Ocean from the South Atlantic Ocean should avoid the Agulhas Current by remaining well to the S of it.

The Indonesian and Malaysian governments have requested that tankers larger than 200,000 dwt operating between the Indian Ocean and the North Pacific Ocean not use the Malacca Strait or Singapore Strait. The channels leading through the Malacca Strait and Singapore Strait narrow to widths of about 2 miles and 1.2 miles, respectively. In addition, depths of only about 22m lie in several places in the SE part of the Malacca Strait and in the Singapore Strait. Selat Lombok, leading between the islands of Lombok and Bali, provides the safest route through the Eastern Archipelago for large vessels over 200,000 dwt. The minimum channel width is 11.5 miles and the minimum depth is greater than 140m. Selat Sunda leads between the islands of Sumatra and Jawa. This channel is deep and wide enough for large, deep-draft vessels, but the currents are strong. In addition, the straits to the N leading to the South China Sea are shallow and dangerous.

Seas

Adjacent Waters

Adjacent waters include the Red Sea, the Gulf of Aden, the Arabian Sea, the Gulf of Oman, the Persian Gulf, the Bay of Bengal, the Malacca Strait, Bass Strait, and the Great Australian Bight.

The Red Sea

Excessive refraction and mirages are frequent in the Red Sea. In November 1902, **Al Ikhwan** (The Brothers Islets) (26°19'N., 34°51'E.) was reported seen from a distance of over 100 miles. The excessive refraction causes an apparent elevation or depression of the horizon and this effect may introduce errors of up to 20' of longitude and 10' of latitude in the results of celestial observations.

Occasionally, the water in the Red Sea suddenly becomes brilliant at night because of bioluminescence. This effect may occur during both winds and calms.

During both monsoons, variable cross currents, which set E or W, occur in all months and are observed in all parts of the Red Sea. The velocity of the majority of these currents does not exceed 1 knot. However, rates exceeding 2 knots have been experienced on extremely rare occasions to the S of 20°N. In addition, currents with rates exceeding 2 knots may occur, at times, in the Strait of Bab al Mandab during the Northeast Monsoon.

Water levels in the Red Sea may fluctuate as a result of changes in winds and atmospheric pressure. Onshore winds or

a decrease in atmospheric pressure can cause an increase in the water level, whereas offshore winds or an increase in atmospheric pressure can cause a lowering of the level. The maximum fluctuations in water level may be about 0.7m higher in winter than in summer. This phenomenon is especially noticeable in the vicinity of Jeddah, where numerous reefs only uncover during the summer.

Numerous drilling and production platforms, oil wells, and associated structures, many of which are unlighted or lighted only by flares, are situated in the Red Sea and Gulf of Suez.

The S part of the Red Sea is one of the hottest areas on earth; temperatures as high as 47.7°C have been recorded.

The Gulf of Aden

Excessive refraction phenomena in all forms is common in the Gulf of Aden, but haze is infrequent, except in summer.

The currents in the gulf are seasonal, mainly depending on the monsoons of the N part of the Indian Ocean.

Numerous drilling and production platforms, oil wells, and associated structures, many of which are unlighted or lighted only by flares, are situated in the gulf.

Sand storms, known locally as "khamisin" may occur in the gulf without warning and frequently set in with great violence from the N.

The Arabian Sea

Care should be exercised during the Southwest Monsoon in the Arabian Sea when the weather may be stormy, the sea heavy, and the land often obscured by thick haze.

Great caution is advisable off Ras Aser (Capo Guardafui) and in the region of Suqutra (Socotra) due to the likelihood of some degree of onshore set at any time of the year. The East African current branches E into the ocean to the S of Suqutra and is very strong during the SW monsoon, especially from July to September. During these months, the area with strongest currents lies between 7°30'N and 10°30'N, and between 51°30'E and 54°30'E. Many of the currents have rates of 4 to 5 knots and occasionally some currents attain rates of 6 to 7 knots. Between Suqutra and 14°N, the currents usually attain maximum rates of 2 to 3 knots during the SW monsoon.

The most probable direction of movement of tropical storms off the SE coast of Arabia is towards the NW. However, individual storms are liable to move erratically on almost any course. Although tropical storms (cyclones) are rarely encountered in these waters, they are very dangerous due to the difficulty of forecasting their approach. Therefore, any unusually signs of bad weather should always be noted, especially at the change of the monsoons when cyclones are most likely to be experienced.

Small scale whirlwinds, which may give rise to dust-devils over land or waterspouts at sea, may occur in the region of the Arabian Sea.

Luminosity of the sea occurs in this region and a "white water" phenomena is quite common within the Arabian Sea. With a strong monsoon blowing and a high sea, the horizon has been reported to become suddenly very clear. In addition, a white bank that seemed to be rushing toward the ship has appeared dead ahead. A short time later, the sea was reported to be a sheet of pure white that lit up the surroundings to the brilliancy of a full moon. After an hour, this phenomena gradually faded away. Other reports described the surface of the sea

being smooth with flashes of light giving it a violent, agitated appearance like breakers on a low beach.

The Gulf of Oman

Poor visibility may be experienced in the Gulf of Oman. It is caused by early morning fog, salt haze, or, more frequently, dust. The dust haze occurs most frequently from May through August; the visibility is usually reduced to 2 to 6 miles, but on occasion has been reduced to as little as 0.5 mile. The haze will often occur on the day after a severe dust storm, even though the strength of the wind at that time may be considered insufficient to create such a haze.

Strong tidal currents occur in the extreme N part of the gulf.

Fish aggregation devices are reported to lie close off the coast in this area.

The Persian Gulf

Numerous drilling and production platforms, seismic survey vessels, oil wells, pipelines, and associated structures are situated in the gulf. It should be noted that flares for burning off gas emanating from oil rigs are sometimes very bright and difficulty may be experienced in sighting navigational lights in their vicinity. Movements of mobile drilling rigs and vessels engaged in seismic surveys are promulgated by local notices to mariners issued by the Middle East Navigation Aids Services (MENAS). Notices are not issued for movements within existing fields or in areas of no navigational significance. In certain circumstances, MENAS will also broadcast their movements through local coast radio stations. The Iranian authorities also issue local notices. Movements of mobile rigs and survey vessels are also promulgated through NAVAREA IX radio navigation warnings.

Vessels are cautioned that many submarine pipelines within the gulf are not buried and may rise up to 2m above the bottom.

It was reported (1991) that several oil production platforms in the gulf have been removed. However, all that remains in many such cases are pipes standing 3 to 6m above the waterline. These pipes are a hazard to navigation and are not radar conspicuous.

Sand waves are known to exist in many parts of the Persian Gulf and caution is advised. Although the range of the tide in the gulf nowhere exceeds 3m and is less than 2m in the S part, such heights may be crucial to the under-keel clearance of deep-draft vessels that are required to predict the rise of tide for locations in the open sea at considerable distances from the reference stations in the tables. Because of the complex nature of the tides and the existence of amphidromic points in the gulf, predictions based on the nearest port may be considerably in error. In extreme cases, the HW at a port may coincide with the LW at a location in the open sea no more than 50 miles distant.

At some ports within the gulf, regulations stipulate the minimum underkeel clearance permissible for ships entering or leaving. It must be appreciated that such clearances are calculated allowing for ships following accurately surveyed channels in relatively sheltered waters with no heavy seas or swells and proceeding at low speeds. Under no circumstances should such regulations be taken as a guide to safe underkeel clearance in the open sea.

Strong winds blowing in a constant direction for a prolonged period can set up a surface current which can lower the sea

level in one place and raise it in another. As the waters of the Persian Gulf are shallow and winds can blow for prolonged periods, it must be expected that unpredictable changes in sea level will occur and some allowance should be made for this fact.

Haze, especially in summer and also during winter in the S part of the gulf, often completely obscures the land and reduces the visibility of shore lights. In addition, sand storms have been reported to suddenly reduce visibility to less than 1,000m.

Strong tidal currents setting near the entrance of the Persian Gulf necessitate caution. Off **Ras Musandam** (26°23'N., 56°32'E.), on the W side of the entrance, the current has been reported to attain rates of over 4 knots. Within the gulf, the set caused by the winds is sometimes so great that an opposing tidal current fails to overcome it. The resulting set continues in the same direction as before and merely changes its rate.

Except at the entrance, the Arabian coast of the gulf is low and, in places, shoals and reefs lie up to 50 miles offshore. Traffic Separation Schemes (TSS) and buoyed channels are provided for safe navigation in this area.

In addition to dust storms and haze, squalls with waterspouts are also common in the gulf, particularly in autumn. Wind gusts of up to 95 knots winds have been recorded during these squalls.

Temperatures are very high in the open gulf and may reach 45°C.

An unusual oceanographic phenomenon of the open gulf is the submarine spring formed off Bahrain. The source of this artesian fresh water upwelling is reported to be the Jabal Tuwayq in Arabia.

Part of the trade between the Persian Gulf, India, the Red Sea, and the E coast of Africa, is carried on by local vessels. Such small vessels are known as "bagala" or "bum boats" by the Arabs. Similar Indian-built vessels are called "kutiyah" or "dangiyah." The term "dhow" (from the Swahili word "daw") is mostly unknown to the inhabitants of the Persian Gulf littoral, but is used commonly by Europeans to denote any local sailing craft.

Local magnetic disturbances have been reported to occur within the gulf.

Vessels are advised that mined areas exist in the N part of the gulf. Swept routes are provided in the approaches to ports and information concerning them should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by IMARSAT (150-5612) or by VHF. Further details of areas reported to be dangerous due to mines are promulgated by Navigation Notices issued by the Middle East Navigation Aids Service (MENAS). In addition, see Annual U.S. Notice to Mariners No. 1 (MARAD Advisories).

The Bay of Bengal

The Bay of Bengal lies in the NE part of the Indian Ocean and is dominated by the monsoon winds. During spring, the current in the bay has a strong clockwise circulation. In autumn, the current is weaker and counterclockwise. The heaviest rains occur during autumn and the surface water tends to pile up on the W side of the bay. This, combined with the funnel shape of the bay and shoaling of its bottom, causes high tides and seiches.

The vast delta of the Ganges River lies at the head of the bay and has many mouths. The Hooghly River, the W branch of the

Ganges River, forms the main route for oceangoing ships bound for Calcutta. The Meghna River, lying 180 miles E of the Hooghly River, discharges the main volume of water from the Ganges River. At times, tidal bores occur during spring tides in these branches.

The Malacca Strait

The Malacca Strait, which forms the main route connecting the Indian Ocean with the South China Sea, is about 500 miles long. The channel fairway narrows to a width of about 8 miles at the E end where it joins the Singapore Strait.

Large sand waves are reported to be formed, with crests at right angles to the direction of the tidal currents, on the bottom of the strait. These sand waves form where strong tidal currents occur and rise 4 to 7m above the bottom. In addition, long sand ridges, running parallel to the direction of the tidal currents, are also formed. Therefore, deep-draft vessels should take particular note of the latest reports concerning depths in or near the fairway.

Navigational aids are difficult to maintain within the strait and are reported to be frequently unreliable.

Heavy traffic is often encountered within the strait and maneuvering room may be restricted, at times, by numerous fishing craft.

For information concerning Navigation Rules for the Malacca and Singapore Straits, see Singapore—Regulations.

Tides

General

Mixed, semidiurnal, and diurnal tides occur and tide ranges differ considerably. Tide range vary from exceeding 12.2 in the Gulf of Cambay, about 4m at Beira, 0.2m at Marion Island, and negligible in the Red Sea. Tide ranges are small along the S and W coasts of Australia N to Champion Bay. Seasonal variations in water level above and below mean sea level are usually less than 0.15m.

Northwest Indian Ocean

Tides.—Diurnal, semidiurnal, and mixed tides occur in this region. Diurnal tides consist of one high water and one low water each tidal day. In regions of semidiurnal tides, two high and two low waters occur each tidal day, with little inequality between the heights of successive high and successive low waters. Where the tide is mixed, two high waters and two low waters occur each tidal day, with a considerable inequality between the heights of successive high or successive low waters.

Tide ranges differ considerably. For example, at Bhavnagar in the Gulf of Cambay the maximum range may exceed 12.2m when spring tide occurs near perigee, whereas at Bur Sudan in the Red Sea the range is negligible. Semimonthly maximum tide ranges for semidiurnal or moderately mixed tides occur at springs (new or full moon); semimonthly minimum ranges occur at neaps (quadrature). Diurnal or extremely mixed tides attain their maximum range, the tropic range (approximately 1.3 times the diurnal range), during maximum N or S lunar declination.

Changes in Water Levels.—Fluctuations in water level due to meteorological changes vary throughout the area. In general, strong onshore winds and low barometric pressure raise the

water level higher than predicted, and offshore winds and high barometric pressure lower it.

In the **Persian Gulf**, the shamal (NW wind) may lower the water level as much as 0.9m at the head of the gulf, raise it from 0.6 to 0.9m in the vicinity of Ras Tannurah and lower it about 0.6m on the E side of Qatar. The kaus (SE winds) may raise the water level about 0.9m at the head of the gulf, lower it as much as 0.2m in the vicinity of Ras Tannurah, and raise it about 0.2m on the E side of Qatar. Consequently, when the kaus precedes the shamal, the water level may be altered 1.5 to 1.8m at Shatt al Arab, 1.5 to 2.7m at Ras Tannurah, and about 1.2m on the E side of Qatar.

Northeast Indian Ocean

Tides.—Mixed and semidiurnal tides occur in the area. Along the coasts of Sumatera (including the off-lying islands), Thailand, Sri Lanka, and India from about 10°15'E to Mangalore (12°52'N., 74°53'E.), the tide is mixed, with two high waters and two low waters each tide day and a considerable inequality between the heights of successive high and successive low waters. Throughout the remainder of the area the tide is semidiurnal; two high waters and two low waters occur each tide day, with a small inequality between the heights of successive high and successive low waters.

The tide generally progresses northeastward in the NE part of the Indian Ocean, northward in the Bay of Bengal and Andaman Sea, and southeastward in the Strait of Malacca and along the SW coast of India.

Semimonthly maximum tide ranges occur near times of new or full moon. The tide ranges vary throughout this area; the largest range of about 6.7m occurs at Kyaikkami (Amherst), at the entrance to the Moulmein River, when spring tides occur near perigee. The mean spring range varies from about 1.5 to 9.0m on the NW coast of Australia.

Changes in Water Levels.—Changes in wind and barometric pressure may cause deviations from daily predicted water level. In general, prolonged onshore winds and low barometric pressure raise the water level, while offshore winds and high pressure lower it.

At the head of the Bay of Bengal, storm surges (oscillations with periods of 2 to 4 days) may occur in the wakes of cyclones (most frequent in May and October) and may cause the water level to rise considerably. Storm surges that flooded the entire coast of Bangladesh within a short period of time have been observed on rare occasions.

South Indian Ocean

Tides.—Mixed, diurnal, and semidiurnal tides occur. In regions of mixed tides two high waters and two low waters occur each tidal day, with considerable inequality between the heights of successive high and successive low waters. Where the tide is mainly diurnal, one high water and one low water occur each tidal day; however, near times of equatorial lunar declination high and low water stands occur for periods of as long as 12 hours. Semidiurnal tide consists of two high waters and two low waters each tidal day, with little or no inequality between the heights of successive high and successive low waters.

In regions of diurnal tide, low and high tides occur later each successive day for a period of about 8 or 9 days, then occur earlier each successive day for a period of about 5 days. As a

result, low water occurs in late afternoon in winter and in early morning in summer.

Tide ranges differ considerably from place to place. For example, the mean range is 4.0m feet at Beira and 0.2m at Marion Island. At Port Hedland, the range may exceed 6.1m at springs near time of perigee, whereas the maximum range (tropic) at Champion Bay is about 0.6m.

Changes in Water Level.—In general, strong onshore winds and low barometric pressure raise the water level; offshore winds and high barometric pressure lower it. The greatest seasonal variations in water level above (+) or below (-) mean sea level along the African coast are, as follows:

Along the coast of Mozambique between Baie de Lour-enco Marques and Bartolomeu Dias	+0.09m in March -0.12m in August and September
Along the Mozambique coast between Chiloane and Beira	+0.15m in February -0.12m in August and September
Along the Mozambique coast from about 100 miles NE of Beira NE to the mouth of the Rio dos Bons Sinais	+0.27m in April -0.21m in August
Along the Mozambique coast between the Rio dos Bons Sinais and 15°S	+0.06m in May -0.09m in August and September
On the N side of Mauritius	+0.06m in April -0.09m in August and September

Meteorological conditions will also affect the times of high and low waters as well as the water level. Along the SW coast of Australia, strong W winds may advance the time of high water as much as 2 hours and delay the time of low water by an equal amount, whereas strong E winds have the opposite effect. In general, strong onshore winds and low barometric pressure raise the water level and offshore winds and high barometric pressure lower it. In some coastal regions, particularly along the W coast in the vicinity of Fremantle, the predicted water level may be exceeded by as much as 1.2 during strong W winds; strong E winds cause a very low water level.

The greatest seasonal variations in water level above (+) or below (-) mean sea level along the Australian coast are, as follows:

Between Eucla and Flinders Bay	+0.15m in June -0.09m in November, December, January, and February
Between Hamelin Bay and Fremantle	+0.12m in June -0.09m in November, December, and January
Between Jurien Bay and Port Gregory	+0.12m in May and June -0.09m in October and November
Between Freycinet Estuary and Exmouth Gulf	+0.12m in April and May -0.12m in September
Between Long Island and Port Hedland	+0.15m in April -0.12m in August and September



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General

Indonesia consists of an archipelago of 17,508 islands that extends up to about 3,100 miles along the Equator between the mainland of Southeast Asia and Australia. The archipelago forms a natural barrier between the Indian Ocean and the Pacific Ocean. The main islands are Sumatera (Sumatra), Java, Sulawesi (formerly Celebes), Borneo (the S part of Kalimantan), and Irian Jaya (W half of New Guinea). Indonesia shares land borders with Malaysia and Papua New Guinea.

The terrain consists of mostly coastal lowlands but the larger islands have interior mountains and some volcanoes.

The climate is mostly tropical being hot and humid, while somewhat moderate in the mountain areas.

The former Portuguese colony of East Timor, which was abandoned in 1975, was occupied by Indonesia and claimed as the province of Timor Timir. The United Nations does not recognize Indonesian sovereignty over this territory. In 1999, the population of East Timor voted for independence. Shortly thereafter, the Indonesian parliament concurred with the vote. After a short period of United Nations administration, East

Timor became the Democratic Republic of Timor-Leste on May 20, 2002.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Rigs

Movable oil drilling rigs and production platforms may be encountered off the coasts of Indonesia and in open waters. Buoys associated with the drilling operations are frequently moored in the vicinity of these structures. The positions of these rigs and buoys are frequently changed and are generally promulgated by radio navigational warnings.

Piracy

It was reported (1995) that vessels have been attacked by armed thieves in the vicinity of Malacca Strait and Singapore Strait, mainly near Phillip Channel. These attacks were usually made from fast motor boats approaching from astern. Loaded vessels with low freeboards seem to be particularly vulnerable.

The International Maritime Bureau (IMB) of the International Chamber of Commerce has established a Piracy Countermeasures Center at Kuala Lumpur. This center operates for the Southeast Asian Region and is able to receive reports from vessels concerning attacks and advise of danger areas. Piracy warnings originated by the center will be broadcast daily to NAVAREA XI, VIII, and X through Enhanced Group Calling using the SafetyNET System.

For further details, the IMB Center can be contacted, as follows:

IMB Piracy Reporting Center
ICC International Maritime Bureau

P.O. Box 12559
 50782 Kuala Lumpur
 Malaysia
 Telephone: +60-3-2031-0014
 Facsimile: +60-3-2078-5769
 Telex: +84-34199 (IMBPCI MA34199)
 E-mail: imbkl@icc-ccs.org.uk

IMB Piracy Reporting Center Home Page

http://www.iccwbo.org/ccs/menu_imb_piracy.asp

Buoyage

Within Indonesian waters, lights and buoys are considered unreliable, being frequently irregular, extinguished, missing, or off station.

Sand Waves

Strong tidal currents in Malacca Strait, arising from the water exchange between the Indian Ocean and the South China Sea, cause large uniform sand waves on the sea bed. For further information, see Singapore—Cautions—Sand Waves.

General

For further information concerning dangers in the vicinity of Sumatera (Sumatra) and Malacca Strait, see Singapore—Cautions.

For further information concerning dangers in Indonesian waters, see Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia.

Currency

The official unit of currency is the rupiah, consisting of 100 sen. It was reported (1997) that sen are no longer used.

Government



Flag of Indonesia

Indonesia is a republic. The country is divided into 27 provinces, two special regions, and one special capital city district.

Indonesia is governed by a President, who is chosen by the People's Consultative Assembly to serve a 5-year term. The People's Consultative Assembly, which consists of the members of the House of People's Representatives plus 195 government appointees, meets every 5 years to choose the President.

The unicameral House of People's Representatives consists of 500 members; 462 members are directly elected, while the remaining members are appointed from the armed forces. All members serve 5-year terms.

The legal system is based on Roman/Dutch law and is substantially modified by indigenous concepts.

The capital is Jakarta.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Sunday	Variable
Nyepi Saka	Variable
Ascension Day	Variable
Waisak	Variable
August 17	Independence Day
December 25	Christmas Day
December 31	New Year's Eve

Islamic holidays, which are subject to the appearance of the moon, include the Ascension of the Prophet Muhammad (Isra Mi'raj), Eid Al-Fitter (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), and the Prophet's Birthday.

Industries

The principal industries include petroleum and natural gas production, textiles, shipyards, chemical factories, automobiles, cement, fertilizers, livestock raising, timber, mining, fishing, and tourism.

The main agricultural crops include rice, maize, sweet potatoes, copra, sugarcane, rubber, palm oil, tea, coffee, fruits, nuts, tobacco, and cloves.

Languages

Bahasa Indonesia (a modified form of Malay) is the official language. English, Dutch, and several local dialects, the most common of which is Javanese, are also used.

Mined Areas

The Indonesian Government has declared the following areas dangerous due to mines which were laid during World War II. Due to the lapse of time, navigation through these minefields whether they have been swept or not is now considered no more dangerous from mines than from any other of the usual hazards to navigation; but in the unswept areas a real danger still exists with regard to anchoring, fishing or any form of submarine or seabed activity.

Pulau Lingga

1. The area of water bounded on the N side by the S coast of Pulau Lingga, on the E side by 104°48'E, on the S side by 0°29'S, and on the W side by the NE coast of Pulau Singkep and 104°32'E.

2. A swept channel S of Pulau Lingga, clear for all types of vessels, is bounded as follows:

a. On the N side by a line joining the following positions:

- 0°20'06"S, 104°32'00"E.
- 0°23'06"S, 104°48'00"E.

b. On the S side by a line joining the following positions:

- 0°21'30"S, 104°32'00"E.
- 0°22'00"S, 104°35'00"E.
- 0°23'18"S, 104°39'48"E.
- 0°24'54"S, 104°48'00"E.

3. A recommended track near Selat Berhala lying between 0°54'00"S, 104°18'00"E and 0°54'00"S, 104°35'00"E.

Pulau We

An area bounded by lines joining the following positions:

- a. 5°52'50"N, 95°15'00"E.
- b. 5°52'50"N, 95°20'00"E.
- c. 5°52'30"N, 95°20'00"E.
- d. 5°52'30"N, 95°15'00"E.

Padang, Teluk Bayur

An area bounded by lines joining the following positions:

- a. 0°59'30"S, 100°15'00"E.
- b. The N point of Pulau Pisang (1°00'S, 100°20'00"E.).
- c. The E point of Pulau Pisang.
- d. The E point of Pulau Bitanggor (1°09'S, 100°20'00"E.).
- e. The S point of Pulau Bitanggor.
- f. 1°09'30"S, 100°15'00"E.

Sungai Panai

An area bounded by the shoreline, a line joining position a and position b below, and lines bearing 270° from point a and point b to the shoreline:

- a. 2°35'N, 100°25'E.
- b. 2°50'N, 100°15'E.

Navigational Information**Enroute Volumes**

Pub. 163, Sailing Directions (Enroute) Borneo, Jawa, Sula-wesi, and Nusa Tenggara.

Pub. 164, Sailing Directions (Enroute) New Guinea.

Pub. 174, Sailing Directions (Enroute) Strait of Malacca and Sumatera.

Maritime Claims

The maritime territorial claims of Indonesia are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

* Claims archipelagic status. Submarines must navigate above water level and show the national flag. Nuclear vessels and vessels carrying nuclear material must carry documents and adhere to international special preventative measures.

Maritime Boundary Disputes

Indonesian groups have challenged Australia's claim to Ashmore Reef (12°15'S., 123°03'E.).

Indonesia and East Timor contest the sovereignty of the uninhabited coral island of Pulau Batek (Fatu Sinai) (9°15'S., 123°59'E.), which has hampered the creation of a maritime boundary.

Indonesia asserts claims to Pulau Sipidan (4°07'N., 118°38'E.) and Pulau Ligitan (4°10'N., 118°53'E.), located on the E coast of Borneo, which were awarded to Malaysia in 1999 by the International Court of Justice.

Regulations

Vessels are advised not to anchor in the Strait of Malacca and Singapore Strait between the landward limit of the Traffic Separation Scheme or precautionary area and the adjacent port limits. Vessels are to anchor only in designated areas.

For information concerning Navigation Rules for the Strait of Malacca and Singapore Strait, see Singapore—Regulations.

National Flag

The Indonesian national flag should be flown at sea by all foreign vessels when in Indonesian waters. It should be flown not lower than any other flag and should not be smaller than the vessel's national ensign or any other flag displayed.

Search and Rescue

Baden SAR National (BASARNAS) coordinates search and rescue operations and can be contacted by e-mail, as follows:

barsanas@indo.net.id

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Ship Reporting System

STRAITREP is a joint Indonesia-Malaysia-Singapore mandatory ship reporting system in the Strait of Malacca and Singapore Strait. For further information on STRAITREP, see Singapore—Vessel Traffic Service—Reporting Systems.

Signals

Various signals are made in Indonesian ports and waters for the control and assistance of shipping.

Tidal Current Signals.—Tidal current signals are displayed from shore stations, as follows:

1. A white flag—Slack water.
2. A blue flag—Ebb tide.
3. A red flag—Flood tide.

Port Closure Signals.—During maneuvers and exercises, and also for other reasons, it may be necessary to prohibit entrance into channels and harbors of Indonesia or to permit it subject to reservations.

The following signals may be shown from Indonesian signal stations:

1. Emergency. Entry strictly prohibited:
 - a. Day signal.—Three red balls disposed vertically.
 - b. Night signal.—Three red lights disposed vertically.
2. Entry prohibited:
 - a. Day signal.—A black cone, point up, between two black balls disposed vertically.
 - b. Night signal.—A white light between two red lights disposed vertically.
3. Entry and departure prohibited:
 - a. Day signal.—Two black cones, points down, over a black ball disposed vertically.
 - b. Night signal.—Green light, white light, and red light, disposed vertically.
4. Departure prohibited:
 - a. Day signal.—Three black cones, with the top and bottom points down and the middle point up disposed vertically.
 - b. Night signal.—A white light between two green lights disposed vertically.

Permission or refusal to enter the channel or harbor will be given after examination. A vessel is then only allowed to enter the channel or harbor provided she is in the charge of a pilot, or is preceded by a warship or pilot vessel.

From the time the signals are shown all exemptions from taking a pilot cease. Masters of vessels are obliged to carry out the instructions of the officer from the examination vessel and are to obey all signals.

When warning of firing is given, work on all vessels near the inspection vessel will be stopped immediately until it is safe, and permission has been given to proceed. Failure to comply with these regulations may result in danger to the vessel and crew. As a general rule, permission to enter at night will not be granted.

If a signal is made from the shore to intimate that vessels are subject to examination, and if there is no examination vessel in the entrance to the fairway, vessels must anchor or lie off.

The coming into operation of these regulations at any particular fairway or harbor will not be announced beforehand.

Berthing Signals.—The following flag signals that are displayed on shore may be used in the harbors of the Republic of Indonesia in addition to the international signals:

3rd substitute over A	Your berth is No. 1.
3rd substitute over B	Your berth is No. 2.
3rd substitute over C	Your berth is No. 3.
3rd substitute over D	Your berth is No. 4.
3rd substitute over E	Your berth is No. 5.
3rd substitute over F	Your berth is No. 6.
3rd substitute over G	Your berth is No. 7.
3rd substitute over R	Anchor in the anchorage area.
Blue flag	No communication, bad weather.

The following flag signals may be shown from vessels in Indonesian harbors:

1st substitute over R	Ship requires docking.
2nd substitute over M	Please send motor boat.
3rd substitute over J	Water flag.
1st substitute over N	Have passenger(s) who has come directly or indirectly from outside Indonesia.
2nd substitute over V	Request rubbish boat.
3rd substitute over Q	Onboard, or during the voyage, there were one or more cases of contagious disease, or disease thought to be contagious (other than cholera or yellow fever).

Pilot Signals.—Vessels requiring a pilot may make any of the below listed signals to obtain assistance.

The following day signals may be used:

1. The national flag, surrounded by a white border one-fifth the breadth of the flag displayed at the foremast head.
2. The pilot signal "UC" of the International Code of Signals.
3. Flag G of the International Code of Signals.
4. The distant signal consisting of a cone point up, having above it two balls or shapes resembling balls.

The following night signals may be used:

1. A blue light every 15 minutes.
2. A bright white light flashed or exhibited just above the bulwarks at frequent intervals for 1 minute.
3. The letter G in the Morse code made by flashing lamp.

The above signals must be shown until the pilot is on board or until an answering signal has been made.

Vessels arriving at night and not immediately requiring the services of a pilot, should show the pilot signal at daybreak.

The following signals are made from the pilot vessel in answer to ships making the pilot signal:

	Signal	Meaning
By day	No signal.	The pilot will proceed to vessel at once.
By night	White flare or swinging a white light.	
By day	Flag D of International Code of Signals.	No pilot is available; vessel may enter without a pilot until one is met with.
	Cone point up, surmounted by a ball.	
By night	A red light above a white light.	No pilot is available; vessel must wait outside until further notice.
By day	Cone point up with a ball below it.	

	Signal	Meaning
By day	Two cones vertically disposed, points down.	No pilot is available for vessels of less than 350 gross tons capacity; these vessels may enter without a pilot.

Time Zone

Indonesia is covered by multiple Time Zones, as follows:

1. Western Zone (Bangka, Belitung, Jawa, Madura, Sumatera, West Kalimantan, and Central Kalimantan)—The Time Zone description is GOLF (-7). Daylight Savings Time is not observed.
2. Central Zone (Bali, Flores, South Kalimantan, East Kalimantan, Lombok, Sulawesi, Sumba, Sumbawa, and West Timor)—The Time Zone description is HOTEL (-8). Daylight Savings Time is not observed.
3. Eastern Zone (Aru, Kai, Moluccas, Tanimbar, and Irian Jaya)—The Time Zone description is INDIA (-9). Daylight Savings Time is not observed.

Traffic Separation Schemes

Information on Traffic Separation Schemes off Indonesia which affect traffic using the Strait of Malacca can be found in Malaysia—Traffic Separation Schemes.

Information on Traffic Separation Schemes off Singapore which affect traffic using the Strait of Malacca can be found in Singapore—Traffic Separation Schemes.

U.S. Embassy

The U.S. Embassy is situated at Jalan Merdeka Selatan 4-5, Jakarta.

The mailing addresses are, as follows:

1. Indonesia address—
Jalan Merdeka Selatan 4-5
Jakarta, 10110
2. U. S. address—
Unit 8129, Box 1
APO AP 96520

U. S. Embassy Indonesia Home Page
<http://jakarta.usembassy.gov>



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General

Iran is located in Southwest Asia and occupies the W part of the great Iranian plateau between the Indus River and the Tigris River. It is bounded on the N by Armenia, Azerbaijan, the Caspian Sea, and Turkmenistan; on the E by Afghanistan and Pakistan; on the S by the Persian Gulf and the Gulf of Oman; and on the W by Iraq and Turkey. Part of the E bank of the Shatt al Arab waterway is situated in Iran.

After an 8-year war with Iraq, Iran restored diplomatic relations in 1990 and is still trying to work out an agreement concerning the freedom of navigation and sovereignty over the Shatt al Arab waterway.

Iran has a dispute with the United Arab Emirates concerning the territorial claims of several islands in the Persian Gulf.

The terrain consists of a rugged and mountainous rim, a high central basin with deserts and mountains, and small plains along both coasts.

The climate is mostly arid or semiarid, with a subtropical area along the Caspian Sea coast.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Special Warning 114 (Issued 5 February 2001)

1. Mariners are advised to exercise caution when transiting the waters of the north Persian Gulf.

2. Iranian-flag speedboats and patrol craft operating in Iranian and international waters have boarded vessels and demanded payment before the vessels are allowed to proceed.

3. Mariners should exercise caution and vigilance when operating in this area, and should obtain and evaluate current warning information broadcasted by the National Geospatial-Intelligence Agency (NGA) via HYDROPAC broadcasts.

4. Any anti-shipping activity should be reported to NGA NAVSAFETY BETHESDA MD or NAVSAFETY@NGA.

MIL via Ship Hostile Action Report (SHAR) procedures (See NGA Pub 117—Chapter 4), or directly to the U.S. State Department, or nearest U.S. Embassy or Consulate.

5. The publication of this notice is solely for the purpose of advising U.S. mariners of information relevant to navigational safety, and in no way constitutes a legal recognition by the United States of the validity of any foreign rule, regulation, or proclamation so published.

Piracy

Acts of piracy, mostly against small merchant vessels, have been occurring in and around Iraqi territorial waters, including the Khor Abd Allah. For further information, see Iraq—Cautions—Piracy.

Locust Reports

See Indian Ocean—Cautions for further information.

Visibility

Navigation off the coast of Iran may be impeded by dust and haze frequently obscuring the land; this is especially prevalent from April through June. Vessels relying on visual fixes should remain in depths greater than 20m.

Currency

The official unit of currency is the Iranian rial, of which 10 equal 1 toman.

Government



Flag of Iran

Iran is a theocratic republic. The country is divided into 28 provinces.

Iran is governed by a directly-elected President who serves a maximum of two consecutive 4-year terms. The Council of Ministers is appointed by the President with the approval of the Islamic Consultative Assembly.

The unicameral Islamic Consultative Assembly consists of 290 directly-elected members serving 4-year terms.

An 83-member Assembly of Experts was established in 1982 and is popularly elected every 8 years. Its mandate is to interpret the constitution and select the religious leaders. Candidates for election are examined by a 12-member Council of Guardians. All legislation is subject to approval by the Council of Guardians.

The legal system is based on Islamic law.

The capital is Tehran.

Holidays

The following holidays are observed:

February 11	Revolution Day
March 20	Oil Nationalization Day
March 21-25	Iranian New Year (Eyde Nowrooz)
April 1	Iranian Islamic Republic Day
April 2	13th Day after Nowrooz
June 5	Rising of 15th Khordad Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, the Prophet's Birthday, Birthday of Imam Ali, Martyrdom of Imam Ali, Martyrdom of Imam Jaffar Sadegh, Birthday of Hazrat Emam Reza, Eid ul Ghadeer Al Khom, Tassoa, Ashoora, Arbacin, Death of the Holy Prophet and Martyrdom of Imam Hassan, and Birth of the Holy Prophet and Imam Jaffar Sadegh.

Industries

Petroleum and petrochemical production are the major industries. Other industries include textiles, food processing (particularly sugar refining and vegetable oil production), construction materials, metal fabricating, ores, coal, and armaments.

Agriculture includes wheat, rice, wool, cotton, fruits, sugar beets, caviar, opium poppies, tobacco, and livestock.

Languages

Farsi (Persian) is the official language. Other languages include Kurdish and Luri (in the W); Arabic, Gilaki, and Mazandarami (in the N); Baluchi (in the SE); and Turkish dialects (in the NW).

Mined Areas

Vessels are advised that Mined Areas exist in the N part of the Persian Gulf. Information concerning swept routes should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Iran are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone ***	200 miles.
Continental Shelf ***	—

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

** Claims security jurisdiction in the Contiguous Zone.

*** Fisheries Zone and Continental Shelf extend to median line equidistant from baseline of neighbors.

Maritime Boundary Disputes

Iran and the United Arab Emirates are conducting talks to resolve disputes over Iran's occupation of Jazireh-ye Tonb-e Bozorg (26°16'N., 55°18'E.), Jazireh-ye Tonb-e Kuchek (26°14'N., 55°09'E.), and Jazireh-ye Abu Musa (25°53'N., 55°02'E.).

Iran's lack of a maritime boundary with Iraq prompts jurisdictional disputes beyond the mouth of the Shatt al Arab in the Persian Gulf.

Regulations

General

Alcoholic drinks are prohibited in Iranian ports.

All crew, men or women, should strictly observe the Islamic way of dressing (Hejab).

Vessels should fly the Iranian national flag when in Iranian territorial waters, when at an anchorage, or when moored at a berth.

The Iranian Ministry of Road and Transportation has advised (2005) that the term "Arabian Gulf" should not be used in the documents of vessels calling at Iranian ports; the internationally-approved term "Persian Gulf" should be used. In cases where the term "Arabian Gulf" is used, Iranian ports will not provide port and maritime services to the offending vessels and their agents.

International Ship and Port Facility (ISPS) Code

The ISPS Code applies to ships on international voyages and port facilities directly interfacing with these ships. All vessels intending to enter Iranian territorial waters and ports should fully comply with the provisions of Chapter XI-Part 2 of the SOLAS Convention and Part A of the ISPS Code. Vessels shall demonstrate that appropriate maritime security measures are in place according to ISPS Code regulations. Vessels shall maintain compliance until leaving Iranian territorial waters.

Reporting

All vessels heading for Iranian ports should report to Bandar Abbas Port Control, through Bandar Abbas (EQI), on passing Ras al Kuh (25°48'N., 57°17'E) stating their ETA at the Strait

of Hormuz and destination. If clearance is not received before passing Bandar Abbas (27°11'N., 56°17'E), vessels should proceed to the anchorage off that port.

All tankers intending to load or unload crude oil or petroleum products at Iranian terminals must advise, at least 72 hours before their arrival, the terminal authorities of their fully authorized agent at the terminal concerned.

The following information should be passed to the port authority of the vessel's destination in Iran, via the agent, at least 72 hours prior to arrival:

1. Vessel name.
2. Master's name.
3. Voyage numberr.
4. Flag/nationality.
5. Port of registry.
6. IMO number.
7. Call sign.
8. Beam and loa.
9. Arrival draft forward and aft.
10. Agent.
11. Type of vessel.
12. Deadweight tons.
13. GRT
14. NRT
15. DWT.
16. ETA
17. Maximum speed.
18. Does the vessel have a Ship Security Certificate? (Yes or No).
19. Expiration date of Ship Security Certificate.
20. Issuing authority of Ship Security Certificate.
21. Last port.
22. Year built.
23. Number of cranes.
24. Cargo type.
25. Cargo quantity.
26. Dangerous cargo on board.
27. Loading port.

Search and Rescue

The Ports and Shipping Organization is responsible for coordinating maritime search and rescue operations. The HQ Tehran can be contacted by e-mail, as follows:

Tehran-mrcc@ir-pso.com

Parhizi@ir-pso.com

Maritime Rescue Coordination Centers (MRCC) are located, as follows:

1. MRSC Bandar-e Shahid Banohar (Bandar Abbas)—Persian Gulf.
2. MRSC Bandar Imam Khomeyni—Persian Gulf.
3. MRSC Bushehr—Persian Gulf.
4. MRSC Chah-bahar—Gulf of Oman.

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Submarine Operating Areas

Submarine Exercise Areas

The following are submarine exercise areas declared by the Iranian navy:

1. **Area SO1.**—Bounded by lines joining:
 - a. 26°32.05'N, 56°49.05'E.
 - b. 26°36.08'N, 56°53.30'E.
 - c. 26°47.00'N, 56°50.05'E.
 - d. 26°43.05'N, 56°40.08'E.
2. **Area SO2.**—Bounded by lines joining:
 - a. 25°18'N, 58°00'E.
 - b. 25°28'N, 58°32'E.
 - c. 25°28'N, 58°00'E.
 - d. 25°18'N, 58°32'E.

Time Zone

The Time Zone description is 3 hours 30 minutes fast of UT(GMT). Daylight Savings Time (4 hours 30 minutes fast of UT(GMT)) is maintained from the end of March through the

end of September; the exact changeover dates should be obtained from local authorities.

Note.—The Iranian year is a solar year running from 21 March to 20 March.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) in Iran are, as follows:

1. Off Ras al Kuh. (IMO adopted)
2. In the Strait of Hormuz. (IMO adopted)
3. Tonb-Forur (Jazireh-ye Tonb-e Bozorg to Jazireh-ye Forur). (IMO adopted)

U.S. Embassy

There is no U.S. Embassy or diplomatic representation. Diplomatic messages may be passed to the authorities through the Embassy of Switzerland.



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General

Iraq is located at the head of the Persian Gulf within a triangle of mountains, desert, and fertile river valleys. The coastline, about 36 miles long, extends from Khawr Shatanah to the mouth of the Shatt al Arab. The country is bounded on the E by Iran, on the N by Turkey, on the W by Syria and Jordan, and on the S by Saudi Arabia and Kuwait.

After an 8-year war with Iran, Iraq restored diplomatic relations in 1990 and is still trying to work out an agreement concerning the freedom of navigation and sovereignty over the Shatt al Arab waterway. In 1992, the United Nations Boundary Commission redefined Iraq's border with Kuwait, moving it slightly to the N. Iraq formally accepted this UN-demarcated border and recognized the independence of Kuwait in 1994.

The country slopes from mountains, up to 3,050m high, standing along the Turkey/Iran border to the alluvial plains of the Tigris and Euphrates rivers. These two rivers join to form

the Shatt al Arab. Several areas of reedy marshes lie along the S border.

The climate is mostly desert with dry, hot summers and cool, mild winters. The mountain area in the N has cold winters with occasional heavy snow.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

1. Coalition naval forces may conduct military operations in the Eastern Mediterranean Sea, Red Sea, Gulf of Aden, Arabian Sea, Gulf of Oman, and Arabian Gulf. The timely and accurate identification of all vessels and aircraft in these areas are critical to avoid inadvertent use of force.

2. All vessels are advised that Coalition naval forces are prepared to exercise appropriate measures in self-defense to ensure their safety in the event they are approached by vessels or aircraft. Coalition forces are prepared to respond decisively to any hostile acts or indications of hostile intent. All maritime vessels or activities that are determined to be threats to Coalition naval forces will be subject to defensive measures, including boarding, seizure, disabling, or destruction, without regard to registry or location. Consequently, surface vessels, subsurface vessels, and all aircraft approaching Coalition naval forces are advised to maintain radio contact on bridge-to-bridge channel 16, international air distress (121.5 MHz VHF), or military air distress (243 MHz UHF).

3. Vessels operating in the Middle East, Eastern Mediterranean Sea, Red Sea, Gulf of Oman, Arabian Sea, and Arabian Gulf are subject to query, being stopped, boarded, and searched by U.S./Coalition warships operating in support of operations against Iraq. Vessels found to be carrying contraband bound for Iraq or carrying and/or laying naval mines are subject to detention, seizure, and destruction. This notice is effective immediately and will remain in effect until further notice.

Special Warning 115 (Issued 16 February 2001)

- 1. In the Persian Gulf, multi-national naval units continue to conduct a maritime operation to intercept the import and export of commodities and products to/from Iraq that are prohibited by U.N. Security Council Resolutions 661 and 687.
- 2. Vessels transiting the Persian Gulf and the Gulf of Oman can expect to be queried and, if bound for or departing from Iraq or the Shatt-al-Arab waterway, also intercepted and boarded. Safe navigation may require vessels to be diverted to a port or anchorage prior to conducting an inspection.
- 3. Maritime inspection operations in the Red Sea, Strait of Tiran, and Strait of Hormuz have ceased. Cargo bound for Aqaba or transshipment from Aqaba may be inspected on shore according to an agreement worked out by the U.N. Sanctions Committee and Jordanian authorities.
- 4. Documentation requirements for the naval regime in the Persian Gulf and the shore-based regime in Aqaba are identical and can be found in the most recent HYDROPACS covering the enforcement of U.N. sanctions against Iraq.
- 5. Stowage and other requirements for vessels transiting the Persian Gulf can also be found in the most recent HYDROPACS covering the enforcement of U.N. sanctions against Iraq.
- 6. Ships which, after being intercepted, are determined to be in violation of U.N. Security Council Resolution 661 will not be allowed to proceed with their planned transit.
- 7. The intercepting ship may use all available communications, primarily VHF channel 16, but including International Code of Signals, flag hoists, other radio equipment, signal lamps, loudspeakers, bow shots, and other appropriate means to communicate directions to a ship.
- 8. Failure of a ship to proceed as directed will result in the use of the minimum level of force necessary to ensure compliance.
- 9. Any ships, including waterborne craft and armed merchant ships, or aircraft, which threaten or interfere with multinational forces engage in enforcing a maritime interception may be considered hostile.

Note.—Information concerning U.N. sanctions against Iraq can be found under Regulations.

Piracy

Acts of piracy, mostly against small merchant vessels, have been occurring in and around Iraqi territorial waters, including the Khor Abd Allah. There were 70 such incidents reported from June through December, 2004; from January through June, 2005 attacks decreased to about 25 incidents, and have been moving outward from the Khor Abd Allah and the Shatt al Arab to the deep-water anchorages.

Most incidents have occurred when the moon was more than half full, usually between 0100 and 0300, by groups of three to

eight people using small boats, described as skiffs. The majority of attacks have occurred while vessels were at anchor.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Iraqi dinar, consisting of 1,000 fils.

Government



Flag of Iraq

Iraq has been an independent nation since 1932. The country is composed of 18 governorates.

The government of Iraq is in a state of transition following the April 2003 defeat of the Saddam Hussein regime by U.S.-led coalition forces, which remain in Iraq helping to restore degraded infrastructure and to facilitate the establishment of a freely-elected government.

Iraq is presently governed by the Iraqi Transitional Government (ITG), consisting of an ITG President and two ITG Deputy Presidents, known as the Presidency Council, as well as an ITG Prime Minister and three ITG Deputy Prime Ministers. The unicameral 275-member National Assembly is tasked with drafting a new permanent Iraqi constitution and will only serve until the formation of a permanent Iraqi government based on the new constitution is formed.

The capital is Baghdad.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 6	Army Day
April 9	Fall of Baghdad
May 1	Labor Day
July 14	Republic Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha

(End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Crude oil production and refining are the major industries. Other industries include petrochemicals, textiles, construction materials, and food processing.

Agriculture includes wheat, barley, rice, dates, vegetables, cotton, wool, and livestock.

Languages

Arabic is the official language. Kurdish is spoken in the NE part (Kurdish region). Other languages used are Assyrian and Armenian.

Mined Areas

Vessels are advised that Mined Areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Mine danger areas are located, as follows:

1. Within Khawr Abd Allah
2. West and SW of Khawr al Amaya Oil Terminal.
3. Close W of Al Basrah Oil Terminal.
4. S of Athan Shoal.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Iraq are, as follows:

Territorial Sea	12 miles.
Continental Shelf	No specified limit.

Maritime Boundary Disputes

Iraq's lack of a maritime boundary with Iran prompts jurisdictional disputes beyond the mouth of the Shatt al Arab in the Persian Gulf.

Regulations

General

Background.—At the request of the Iraqi government and in accordance with United Nations Security Council Resolutions (UNSCR) 1483 and 1546, a Multinational Maritime Security Force (MSF) continues to operate in the Northern Arabian Gulf (NAG). This force is authorized to conduct maritime security operations to prevent the unauthorized trade of

arms and related material, to perform customary defense missions on behalf of the Iraqi government, and to take all necessary measures to contribute to the maintenance of security and stability in Iraq.

Action.—All vessels en route to and from Iraqi ports are subject to query, and may be subject to boarding and inspection by the MSF until further notice. This notice affects vessels traversing or preparing to traverse Iraqi territorial waters, Khawr abd Allah, Shatt al Arab, and Iraq's offshore Al Basrah and Khawr Al'Amaya oil terminals.

Inspections are conducted to verify compliance with relevant UNSCRs and to contribute to the maintenance of security and stability in Iraq. The intent is to conduct thorough inspections with minimum disruption to maritime commerce. All cleared vessels will be permitted to proceed to their next port-of-call upon inspection completion.

Any vessel carrying unauthorized arms and related material or other cargo that could jeopardize the maintenance of security and stability in Iraq will be detained and turned over to the Iraqi government for appropriate action in accordance with Iraqi law. Specifically, violations may result in the seizure and confiscation of cargo by the Iraqi government. Additionally, the master and crew members of vessels carrying such cargo are subject to arrest, detention, and prosecution under Iraqi law.

Strict adherence to the procedures in this notice will minimize delays associated with such inspections. Iraqi port status, categories of vessel traffic that can be accepted, and other restrictions will be published via separate notice by the Iraqi government.

Hydrographic conditions of Iraqi ports and connecting waterways will also be published via separate notice by the Iraqi government. Parties wishing to dispatch ships to Iraqi ports are advised to review these notices and contact the Iraqi Port Authority for current entry protocol and restrictions.

Checkpoint.—Vessels bound for or departing from Iraqi ports and offshore oil terminals must pass within a 5-nautical mile radius of position 29°35'N, 48°53'E. Approaching vessels must contact the Maritime Security Forces (MSF) Commander on VHF channel 16 when within 5 miles of the above-described point and be prepared to respond to MSF queries.

Notification.—All shipping must be coordinated with the Iraqi Port Authority or the State Oil Marketing Organization (SOMA).

Cargo documentation.—Documentation for Iraq-bound cargo must include the items listed below:

1. An original manifest describing the cargo, as well as its location in the ship, must be on board. The original manifest must include the port of origin, ports of call, complete business names and addresses of all shippers and consignees, and the final destination of all cargo. A complete business address must include the street address, a prominent identifiable geographic location, or a post office box; contact person, name, or recipient ministry or entity; and an e-mail address plus a telephone number or fax number.
2. Consignee names and addresses on all cargo must match the manifest.

3. The manifest must bear an original signature of the vessel's Master or Chief Mate. The manifest may be on the shipper's letterhead, fax, photocopy, or computer printout, but it must bear an original signature.

4. The original manifest may consist of more than one document if there are amendments that list cargo dropped off at a given port, or correct the original manifest. These amendments may originate from the shipper or carrier. Since additional documents may be transmitted to a vessel by such means as telegram or fax, they need not bear an original signature. However, the Master is required to certify in writing that the amended manifest accurately reflects what is on board the vessel.

Incomplete documentation.—Iraq-bound vessels which are determined to have incomplete cargo manifests, or to be otherwise in violation of the cargo documentation requirements listed above, may be detained by the MSF for turnover to the Iraqi government or diverted to their last port-of-call until appropriate conditions are met.

Petroleum imports and exports.—Trade in petroleum products is controlled by the Iraqi government. Iraqi law authorizes the seizure and confiscation of vessels found in violation of any petroleum import or export authorization.

All petroleum imports and exports are handled through SOMO or its agent, the Iraqi South Oil Company (SOC). Only those oil shipments verified to be under valid SOMO contract, or otherwise specifically authorized by the Iraqi government, will be allowed to pass. SOMO can be contacted by fax at 00-8737-6370-5020.

Vessel documentation.—Vessels must maintain sufficient indicia of flag state registry, such as the original Certificate of Registry, on board at all times the vessel is in operation. Stateless vessels or vessels without valid safety and environmental protection certificates are not welcome in Iraq.

Vessels with questionable registry may be delayed in obtaining clearance to proceed or face detention and other penalties upon arrival in Iraqi ports.

Vessels presenting Certificates of Registry confirmed to be invalid will be denied entry into Iraq and could be subject to arrest by the Iraqi government.

Personnel identification.—All crewmembers on Iraq-bound vessels must possess valid seaman's documents or passports. All passengers en route Iraq must possess valid passports or other identification documents acceptable under Iraqi law or regulation.

Ferries and passenger ships.—Ferries or passenger ships traversing the Iraqi MSF checkpoint will be subject to the following requirements:

1. Vessels carrying passengers only, with no commercial cargo carrying capacity, may arrange for an expeditious transit through the checkpoint by forwarding a certified passenger list at least 36 hours prior to transit by fax or letter to the Iraqi Port Authority. Additionally, 10 days prior to the first transit, the vessel should forward a certified attestation by fax or letter from a recognized member of the International

Association of Classification Societies (IACS) that the ship in fact has no cargo-carrying capacity.

2. A passenger vessel arriving at the Iraqi MSF checkpoint which has not complied with the requirements of paragraph 1 above will be held until authorized by the Iraqi Port Authority to enter port. The passenger vessel may be boarded and inspected while awaiting authorization.

Query/boarding procedures.—MSF units querying passing vessels will identify themselves as an MSF warship or aircraft and may give an identifying number. Merchant vessels will be expected to provide the following information in response to a query:

1. Vessel name.
2. Flag.
3. International radio call sign or distinctive letters assigned by the flag state.
4. Cargo quantity and description, with the exception of military cargo.
5. Agent's name.
6. Last port-of-call and date departed.
7. Next port-of-call and ETA.
8. Date of arrival and departure.

Following the query, vessels may be cleared to proceed or directed to stand by for boarding. Ships directed to stand by for boarding will be boarded as expeditiously as possible, with due regard for weather conditions and vessel characteristics. Coalition vessels conducting boardings will endeavor to provide advance notice of boarding team arrival whenever possible.

Boarding teams will advise vessels of requirements to muster crew and account for any watchstanders prior to boarding. All directions from the coalition vessel should be followed explicitly to avoid misunderstandings. If any direction is misunderstood, the vessel master should ask for clarification. Merchant crews should not take offense at security sweeps, should not interfere with them, and should remain in locations designated until cleared to move about the ship by the boarding team.

Vessel masters can facilitate the inspection process by opening hatch covers and making other reasonable preparations prior to the arrival of the boarding team. The ship's Certificate of Registry, cargo documentation, and crew passports or seaman's books should be available for inspection by the boarding officer. Boarding teams may require copies of some documents.

Vessel Clearance Protocols

All shipping must be coordinated through the Iraqi Port Authority (IPA). The IPA Vessel Booking form is used to advise the IPA of a vessel arriving at an Iraqi port including, but not limited to, Umm Qasr and Az Zubayr.

A Vessel Booking Form must be completed by the vessel's agent and submitted to Umm Qasr Port Operations at least 5 working days prior to the vessel's arrival. The vessel's agent should also provide a cargo manifest to the IPA, preferably at least 5 working days prior to the vessel's arrival, but no later than 48 hours prior to the vessel's arrival.

The following information is required to be submitted in the Vessel Booking Form:

1. Vessel name.

2. Flag.
3. Call sign.
4. Vessel size (metric tons).
5. Cargo.
6. Agent's name.
7. Last port of call.
8. Arrival date.
9. Departure date.

The Vessel Booking Form is to be sent to Umm Qasar by e-mail, as follows:

ummqasrport@hotmail.com

A copy of the Vessel Booking Form should also be sent to the Iraqi Coastal Defense Force by e-mail, as follows:

icdfcdr@yahoo.com

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time (DELTA (-4)) is maintained from April 2 until September 30.

U.S. Embassy

The U.S. Embassy is located in Bagdad. The mailing address is APO AE 09316.

U. S. Embassy Iraq Home Page
<http://iraq.usembassy.gov>



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General

Israel, located in the Middle East, is bordered on the NW by the Mediterranean Sea, on the N by Lebanon, on the NE by Syria, on the SE by Jordan and the Gulf of Aqaba, and on the SW by Egypt. The country extends about 260 miles in a N/S direction and varies from 10 to 65 miles in width. The Sinai Peninsula was formerly occupied by Israel after the 1967 Six Day War until 1982. The Gaza Strip, the westernmost coastal area, is now largely administered by the Palestinian Authority.

The Dead Sea, lying on the E side of the country, is 399.9m below sea level and the lowest point on the earth's surface. The terrain consists of low, coastal plains, central mountains, and the Negev Desert in the S.

The climate is primarily temperate, although it is hot and dry in the S and E areas.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official currency is the Israeli shekel, consisting of 100 agorot.

Government



Flag of Israel

Israel, an independent sovereign republic, was originally proclaimed in 1948. The country is divided into six districts.

The Knesset, directly elected for a 4-year term, is a 120-member Parliament. The system of election is by proportional representation. Executive power lies in the Cabinet, headed by the directly-elected Prime Minister. The President of the Knesset, who serves as chief of state for a maximum of two 5-year terms, is chosen by the Knesset.

The legal system is based on English common law, British Mandate regulations, and, in personal matters, Jewish, Christian, and Muslim traditions.

The capital, as proclaimed in 1950, is Jerusalem. The United States, like nearly all other countries, does not recognize this status and maintains its Embassy in Tel Aviv.

Holidays

The following holiday is observed:

May 1	Labor Day
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Other holidays, which are dependent on the appearance of the moon, include Passover, Independence Day, Pentecost, Rosh Hashana (Jewish New Year), Yom Kippur (Day of Atonement), and the Feast of the Tabernacles.

Industries

Agriculture is an important industry. Other major industries include food processing, diamond cutting and polishing, textiles and apparel, chemicals, metal products, military and electrical equipment, potash mining, and tourism.

Languages

Hebrew is the official language. Arabic is the official language of the Arab minority. English is also widely used.

Navigational Information

Enroute Volumes

Pub. 132, Sailing Directions (Enroute) Eastern Mediterranean.

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Israel are, as follows:

Territorial Sea	12 miles. *
Continental Shelf	Limit of Exploitation.

* Reduced to 3 miles off Gaza.

Pollution

Ballast Water Exchange

In order to prevent the import of nonnative aquatic organisms into the waters of the ports of Israel from ballast water discharges, all ships destined for Israeli ports must exchange any ballast water that has not been taken on in open ocean.

The best method of protecting harbor waters from foreign organisms that may exist in the ballast water collected in foreign harbors and near-shore areas is for the ballast water to be exchanged in open ocean, beyond any continental shelf or fresh water current effect.

For vessels calling at Israeli Mediterranean ports, ballast exchange must be carried out in the Atlantic Ocean when practicable.

For vessels calling at Eilat, ballast exchange must be carried out outside the Red Sea, in the Indian Ocean or the Atlantic Ocean, when practicable.

Vessels failing to comply with the above procedure will not be permitted to pump out their ballast water during their stay in the port or while navigating along the coast of Israel.

A record of the location, date, and time of the ballast water exchange should be entered in the ship's log book, or in other suitable documentation, such as an official ballast water record book. Masters of vessels will be requested to provide ship's inspectors (pilots) with a completed ballast water exchange report.

Pollution Reports

All vessels navigating in Israeli waters should report any pollution, grounding, or dangerous situation to the Marine and Coastal Pollution Division via Haifa. Reports should include the following details:

1. Date and time in UTC.
2. Position of pollution/dangerous vessel.
3. Spread and direction of spillage from polluting vessel.
4. Visible sheen or color of water surface.
5. Any other information concerning the type of pollution, including length and breadth of surface area covered.

Civil Liability

From 20 February 1997, entry to the territorial waters of Israel by oil tankers will be permitted only by those holding an insurance policy covering civil liability for oil pollution damage issued by their flag state.

Vessels over a certain age carrying persistent oils (as stated in Regulation 15a of Israeli Regulations of Shipping and Ports) will not be allowed to enter Israeli territorial waters, as follows:

1. Mediterranean Sea—Vessels 25 years of age and older.
2. Gulf of Eilat—Vessels 20 years of age and older.

Regulations

Communications

Within Israeli territorial waters, all vessels are forbidden to transmit by radiotelephone or radiotelegraphy except in accordance with the following conditions:

1. Carry out communications with or through an Israeli coastal radio station on its authorized frequency of 26.96 MHz.
2. Use the minimum power possible.
3. Do not cause interference with other authorized stations.
4. Stop transmitting when requested by Israeli coastal stations.

Ship Reporting System

Vessels bound for Israeli ports are required to report the following information through Haifa Coast Radio Station to the Israeli Ministry of Transport (IMOT) when 100 miles off the Israeli coast (50 miles for small craft):

1. Vessel name (and previous name).
2. Call sign.
3. Flag and port of registry.
4. IMO number.
5. MMSI.

6. Telex number and satellite telephone number.
7. Year when vessel was built.
8. Deadweight tonnage.
9. Vessel type and cargo on board.
10. Number of crew/passengers.
11. Agent's name, telephone number, and facsimile.
12. Last port/previous port and date of departure.
13. Destination.
14. Present position, course, and speed.
15. ETA.
16. Crew list, including name, rank, nationality, residence (country and city), age, gender, seniority in company, and date of signing-on.

Vessels which do not report according to the above IMOT procedures will not be allowed to enter any Israeli port.

The IMOT report must be sent to the Israeli navy by one of the following methods:

1. Facsimile: +972-3-6064567
2. E-mail: s430085@mail.idf.il
3. E-mail: shipping@mail.idf.il

The Israeli navy will confirm receipt of the IMOT report via INMARSAT-C.

If the vessel is not equipped with INMARSAT-C, or if communication fails, the IMOT report should be sent via Haifa Radio (4X0).

All vessels shall contact the Israeli navy on VHF channel 16 when 25 miles off the coast. The report shall include the following information:

1. Vessel's name and call sign.
2. Present position, course, and speed.
3. ETA.

The vessel's agent may be requested to submit additional information 48 hours prior to arrival.

Note.—This contact with the Israeli navy is not a substitute for the required report sent through Haifa Coast Radio Station.

Search and Rescue

The Israeli Navy and Air Force are responsible for search and rescue in Israeli waters. The Search and Rescue Coordination Center, based at the Israeli Navy and Air Force Headquarters, can be reached through Hefa Radio (4X0). Hefa Radio can be contacted by e-mail, as follows:

haifaradio@bezeqint.net

A network of coast radio stations along the Mediterranean coast of Israel maintains a continuous listening watch on international distress frequencies. Elat Coast Radio Station (4XA), on the Gulf of Aqaba, maintains a continuous listening watch on VHF channel 16 for distress traffic.

Time Zone

The Time Zone description is BRAVO (-2). Daylight Savings Time (CHARLIE (-3)) is maintained from the end of March/beginning of April through the end of September/beginning of October; the exact changeover dates should be obtained from local authorities.

U.S. Embassy

The U.S. Embassy is situated at 71 Hayarkon Street, Tel Aviv.

The mailing addresses are, as follows:

1. Israel address—
71 Hayarkon Street
Tel Aviv 63903

2. U.S. address—
PSC 98, Box 100
APO AE 09830

<p>U. S. Embassy Israel Home Page http://telaviv.usembassy.gov</p>
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General

The Ivory Coast is located on the W coast of Africa. The country is bounded by Liberia and Guinea on the W, Mali and Burkina Faso (formerly Upper Volta) on the N, and Ghana on the E.

The sea coast, about 275 miles long, lies between the mouth of the **Riviere Cavally** (4°22'N., 7°32'W.) and a position 2.5 miles W of Newtown. The W part of the coast is high and rocky. The country rises gradually to the interior. The E part of the coast is low and sandy, with a series of lagoons and connecting canals reaching some distance inland.

The most important characteristic of the country is the primeval forest, which covers about forty percent of the country's area. North of the forest lies an inland savanna zone of sandy soil, where the vegetation is sparse and the landscape unbroken. Only the Guinea Highlands in the NW, which rise up to 1,460m, break the monotony of the inland plain.

The climate varies with the terrain, from tropical along the coast to semiarid and hot in the N.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

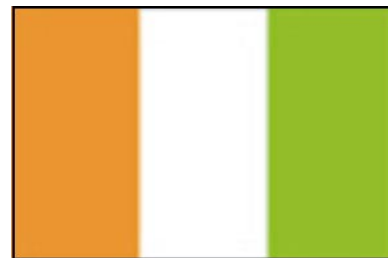
For security reasons, the Ivorian authorities advise that all vessels, particularly fishing vessels, operate at least 3 miles off the coast.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government

The Ivory Coast is a republic. The country is divided into 58 departments.



Flag of Ivory Coast

The Ivory Coast is governed by a directly-elected President who serves a 5-year term. The President appoints the Prime Minister and the Council of Ministers.

The unicameral National Assembly consists of 225 directly-elected members serving 5-year terms. An upper house (Senate) is scheduled to be created in 2005.

The legal system is based on French civil law and customary law.

In March 1983, the capital was changed from Abidjan (5°15'N., 4°01'W.) to Yamoussoukro, which is situated 155 miles NW. The new capital is not recognized by the United States, which maintains an official presence in Abidjan.

Holidays

The following holidays are observed:

January 1	New Year's Day
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
Whitsunday	Variable
Whitmonday	Variable
August 7	Republic Day
August 15	Assumption Day
November 1	All Saints' Day
November 9	Day of Mourning
November 15	Peace Day
December 7	National Feast Day
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), and the Prophet's Birthday.

Industries

Agriculture, the principal industry, includes the production of coffee, cocoa, bananas, pineapples, palm oil, and cotton.

Current mineral production is negligible, but limited amounts of diamonds and gold are produced. Deposits of low-grade iron ore have been found and offshore exploration for oil is being carried out.

Languages

French is the official language. Dioula, one of over 60 native dialects, is also widely spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of the Ivory Coast are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles.

Search and Rescue

Abidjan Coast Radio Station (TUA) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

Time Zone

The Time Zone description is ZULU. Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 5 Rue Jesse Owens, Abidjan.

The mailing address is B.P. 1712, Abidjan 01.

U. S. Embassy Ivory Coast Home Page
<http://abidjan.usembassy.gov>



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General

Jordan, located in the Middle East, is bounded on the N by Syria, on the E by Iraq, on the SE and S by Saudi Arabia, and on the W by Israel.

The country is landlocked, except for its S extremity, where 16 miles of shoreline on the Gulf of Aqaba provide access to the Red Sea through the port of Aqaba (Al Aqabah).

The climate is predominantly Mediterranean, with hot dry summers and cool wet winters.

The rainy season is from November to April. The E part of the country has an arid desert climate.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Jordan dinar, consisting of 1,000 fils. Some local Syrian units are still used.

Government

Jordan is a constitutional monarchy. The country is divided into 12 governorates.

Jordan is governed by a King. The Prime Minister is appointed by the King. The Prime Minister appoints the Cabinet, in consultation with the King.



Flag of Jordan

The bicameral National Assembly consists of the appointed (by the King) 40-member House of Notables (Senate), serving 4-year terms, and the directly-elected, via proportional representation, 110-member House of Deputies (House of Representatives), serving 4-year terms.

The legal system is based on Islamic law and French codes. The capital is Amman.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 30	King Abdullah's Birthday
Palm Sunday	Variable
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 25	Independence Day
June 10	Army Day
November 14	King Hussein's Birthday
December 25	Christmas Day
December 31	New Year's Eve

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, Ascension of the Prophet, and the Prophet's Birthday.

Industries

Irrigation is increasing agricultural production. The principal crops include wheat, fruits, and vegetables.

Industries include phosphate mining, petroleum products, cement, potash extraction, pharmaceuticals, and tourism.

Languages

Arabic is the official language. English is also widely used in commerce and government.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The only maritime territorial claim of Jordan is a territorial sea of 3 miles.

Regulations

Embargo

The naval interception effort in support of the United Nations sanctions pertaining to Iraq continues in the Arabian Gulf and other areas. For further details, see Iraq—Regulations.

Reporting

A Notice of Arrival and ETA must be sent to the harbor-master at Aqaba, through the ship's agent, at least 24 hours before arrival. The ETA must be confirmed by radio before entering the Strait of Tiran. A confirmation of ETA by VHF is also required at least 2 hours prior to arrival.

Entry of ships to the anchorage between 2000 and daybreak is prohibited.

Search and Rescue

The Aqaba Harbormaster is responsible for coordinating search and rescue operations.

Aqaba Coast Radio Station (JYO) maintains a continuous listening watch for distress traffic on VHF channel 16, VHF channel 70, 2182 kHz, 2187.5 kHz, 4125 kHz, 6215 kHz, and 8364 kHz.

Time Zone

The Time Zone description is BRAVO(-2). Daylight Savings Time (CHARLIE (-3)) is maintained from the beginning of April through the end of September; the exact starting and ending dates should be obtained from local authorities.

U.S. Embassy

The U.S. Embassy is situated at Jamel Amman, Amman. The mailing addresses are, as follows:

1. Jordan address—
P.O. Box 354
Amman, 11118 Jordan
2. U.S. address—
Unit 70200, Box 5
APO AE 09892-0200

U. S. Embassy Jordan Home Page
<http://amman.usembassy.gov>



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Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Kenya shilling, consisting of 100 cents.

Government

General

Kenya is located on the E coast of Africa. It is bounded on the N by Ethiopia and Sudan, on the S by Tanzania, and on the E by Somalia and the Indian Ocean.

Much of the land in the N and E parts is arid. From the coastal lowlands, the land rises through a wide arid plain to the highlands. Mount Kenya, 5,199m high, rises in the W part. Several plateaus, 910 to 3,000m high, stand between the mountain ranges and provide some of Africa's most fertile soil. The Great Rift Valley extends S from Lake Turkana and divides the central highlands from the W plateau, which gradually descends to Lake Victoria. The Tana, rising on the slopes of Mount Kenya, is the principal river. It is navigable by shallow-draft vessels for about 200 miles above the mouth.

The climate is tropical with wet and dry seasons. However, considerable variations in altitude form differing conditions between the hot, coastal lowlands and the cooler plateaus. Heavy rain falls during April and May, but a second wet season, in November and December, occurs in some places.



Flag of Kenya

Kenya is a republic. The country is divided into seven provinces and one area.

The unicameral National Assembly consists of 210 directly-elected members serving 5-year terms, 12 members appointed by the President in proportion to the parliamentary vote, and two ex-officio members.

The legal system is based on Kenyan statutory law, Kenyan and English common law, tribal law, and Islamic law.

The capital is Nairobi.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Monday	Variable
May 1	Labor Day
June 1	Madaraka Day
October 10	Moi Day
October 20	Kenyatta Day
December 12	Jamhuri/Independence Day
December 25	Christmas Day
December 26	Boxing Day

Eid-il-Fitr (End of Ramadan), an Islamic holiday subject to the appearance of the moon, is also celebrated.

Industries

Range land covers almost four-fifths of the country and produces mainly livestock products and also wild game, which comprises the major attraction of the country's tourist industry.

Other industries include agricultural processing, oil refining, small-scale consumer goods, cement, textiles, and mining. Coffee, tea, sisal, pyrethrum, coconuts, cashews, cotton, sugar, and maize are the principal crops.

Languages

English and Swahili are the official languages. There are many tribal languages.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Kenya are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

* Established a straight baseline system. Claims Ungwana Bay as historic waters.

Search and Rescue

The ATS Division of the Kenyan Directorate of Civil Aviation is responsible of coordination of search and rescue operations. A Rescue Coordination Center (RCC) is located in Nairobi.

Mombasa Coast Radio Station (5ZF) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated on United Nations Avenue, Gigiti, Nairobi.

The mailing addresses are, as follows:

1. Kenya address—
P.O. Box 606, Village Market
00621 Nairobi
2. U. S. address—
Box 21A, Unit 64100
APO AE 09831

U. S. Embassy Kenya Home Page
<http://nairobi.usembassy.gov>



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General

Kuwait is located at the NW corner of the Persian Gulf. It is bordered on the NW by Iraq, on the SW by Saudi Arabia, and on the E by the Persian Gulf. The islands of Qarūh, Kubrqu-rayn, Faylakah, Awhah, Maskin, Umm al Maradim, Bubiyan, and Al Warbah are dependencies of Kuwait. Ownership of Umm al Maradim and Qarūh is disputed by Saudi Arabia.

The terrain is mostly flat with some undulating desert plain.

The climate is dry desert, with intensely hot summers and short cool winters.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Piracy

Acts of piracy, mostly against small merchant vessels, have been occurring in and around Iraqi territorial waters, including the Khor Abd Allah. For further information, see Iraq—Cautions—Piracy.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Kuwaiti dinar, consisting of 1,000 fils.

Government

Kuwait is a nominal constitutional monarchy. The country is divided into five governorates.

Kuwait is governed by an Amir. The Prime Minister, who is named by the Amir, appoints the Council of Ministers, with the approval of the Amir. The unicameral National Assembly consists of 50 directly-elected members serving 4-year terms.



Flag of Kuwait

The legal system is based on a civil law system, with Islamic law significant in personal matters.

The capital is Kuwait (Al Kuwayt).

Holidays

The following holidays are observed:

January 1	New Year's Day
February 25	Kuwait National Day
February 26	Liberation Day

Islamic holidays, which are subject to the appearance of the moon, include Al-Isra, Eid Al-Fitr (End of Ramadan), Waqfat Arafat, Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), and the Prophet's Birthday.

Industries

Crude oil production and refining are the major industries. Other industries include boat building, fishing, food processing, petrochemicals, and the manufacturing of construction materials.

Languages

Arabic is the official language. English is widely used.

Mined Areas

Vessels are advised that former mined areas exist off the coast of Kuwait in the N part of the Persian Gulf. Mines could still present a hazard in these areas; anchoring, fishing, or seabed operations are not recommended anywhere in this area. Additionally, drifting mines may be encountered anywhere.

Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are promulgated by Navigation Notices issued by the Middle East Navigation Aids Service (MENAS) and MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The only maritime territorial claim of Kuwait is a territorial sea of 12 miles.

Pollution

Vessels shall not discharge into the water of the port any part of the content of their cargo, slop, ballast tanks or bilges which is liable to pollute the waters. Kuwait has stringent laws in force concerning the pollution of the sea by oil; persons responsible for pollution are liable to heavy fines.

Regulations

General

The selling, giving, or taking out of the ship or transferring from one ship to another of alcohol is strictly prohibited by law. Alcoholic beverages are strictly prohibited to be held out of bond. The import of firearms and ammunition is forbidden.

Reporting

Due to the prevailing situation in the Persian Gulf area, the Ports Public Authority now exempt vessels, proceeding for Kuwait, from sending cables through Kuwait shore stations giving details of ETA. It is now requested that the vessel's agent at the port of departure, from which the vessel sailed for Kuwait, notify the Director, Marine Operations Department, Ports Public Authority, Kuwait (Telex: HM SHP 22740 KT), as soon as the vessel departs. Messages should contain the following information:

1. Date and time of sailing.
2. Length of vessel.
3. Arrival draft.
4. Flag.
5. Last port of call.

When entering Kuwaiti territorial waters, vessels must contact the Marine Operations Department, Ports Public Authority, in the usual manner.

Every merchant ship entering a port between sunrise and sunset shall fly, in addition to the required national and courtesy flags, the vessel's signal letter flags.

Search and Rescue

The Maritime Affairs Department is responsible for coordinating search and rescue operations and can be reached by e-mail, as follows:

marine-dept@mockw.net

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

Traffic Separation Schemes

An IMO-approved Traffic Separation Scheme is located off Kuwait in the approaches to Mina al Ahmadi, Ash Shuaybah, and Mina Abd Allah.

U.S. Embassy

The U.S. Embassy is situated in Bayan, Area 14, Al-Masjed Al-Aqsa Street.

The mailing addresses are, as follows:

1. Kuwait address—
P.O. Box 77
Safat 13001
2. U.S. address—
Unit 6900
APO AE 09880-9000

<p>U. S. Embassy Kuwait Home Page http://kuwait.usembassy.gov</p>
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General

Madagascar, the world's fourth-largest island, lies in the Indian Ocean and is separated from the African continent by the Mozambique Channel. The island is about 980 miles long and attains a maximum width of about 360 miles. The coasts of the island are generally low with the E shore being bordered at many places by lagoons.

The W shore is broken by the estuaries of many rivers and is fringed by numerous small islands and islets. The interior is formed mostly by a plateau with an average height of 300m. Several isolated massifs, 2,640 to 2,880m high, rise in the N, central, and S parts.

The climate is tropical along the coasts, temperate inland, and arid in the S part.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing

Trolling, trawling, and fishing with traps, hand lines, gill nets, long lines, and purse seine nets is carried out in the vicinity of the island.

Buoyage

Buoyage around the island cannot be relied upon and navigational lights on the coasts are frequently reported to be extinguished or irregular.

Off-lying Dangers

Almost the entire W and NW coasts of Madagascar are fronted by steep-to banks or chains of shoals extending far offshore. Numerous dangers lie on these banks; there may also be other undiscovered dangers anywhere off these coasts.

Currency

The official unit of currency is the Malagasy franc, consisting of 100 centimes.

Government



Flag of Madagascar

Madagascar is a republic. The country is divided into six provinces.

Madagascar is governed by a directly-elected President serving a 5-year term. The Prime Minister is appointed by the President. The cabinet is named by the Prime Minister.

As of 2001, the unicameral directly-elected National Assembly consisted of a 150-member serving 4-year terms. In the near future, the legislature will become bicameral with the creation of an upper chamber called the Senate; members, two-thirds of which will be directly elected and one-third of which will be appointed, will serve 4-year terms.

The legal system is based on French civil law and traditional Malagasy law.

The capital is Antananarivo (Tananarive).

Holidays

The following holidays are observed:

January 1	New Year's Day
March 29	Martyr's Day (Memorial Day)
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
Ascension Day	Variable
Whitsunday	Variable
Whitmonday	Variable
June 26	Independence Day
August 15	Assumption of the Blessed Virgin Mary
November 1	All Saints Day
December 25	Christmas Day
December 30	Anniversary of the Democratic Republic of Madagascar

Industries

Agriculture and livestock raising are important industries. The principal crops are rice, coffee, vanilla, fruits, tapioca, sugar, cloves, cotton, sisal, and tobacco.

The main industries include food processing, textiles, fishing, mining, glassware, cement, auto assembly, and oil refining.

Languages

French and Malagasy are the official languages.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Madagascar are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or 100 miles from the 2,500m depth isobath.

Maritime Boundary Disputes

Claims French-administered Iles Glorieuses (11°33'S., 47°18'E.), Ile Juan de Nova (17°03'S., 42°43'E.), Ile Europa (22°20'S., 40°21'E.), and Bassas da India (21°27'S., 55°27'E.).

Pollution

The discharge of oil products into the sea is prohibited, as follows:

1. Within 100 miles of the coast of Madagascar W of the meridian of Tanjon i Vohimena, the S point of the island, and the meridian of Tanjon i Bobomby, the N point of the island.
2. Within 150 miles of the coast of Madagascar E of the meridian of Tanjon i Vohimena, the S point of the island, and the meridian of Tanjon i Bobomby, the N point of the island.

Regulations

Except in case of emergency or distress, foreign fishing vessels are prohibited from entering the territorial waters off the ports of Antsiranana (Diego Suarez), Toamasina, Taolanaro, Hellville, Mahajanga, and Toliara. Anchorage may be authorized, temporarily, in certain circumstances.

Search and Rescue

A Rescue Coordination Center (RCC) is located in Antananarivo. A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Ship Reporting System

In order to enable the authorities to implement rescue operations for vessels or aircraft in distress, all vessels navigating within the area bounded by 5°00'S, 60°00'E, 30°00'S, and the coast of Africa are requested to transmit to the nearest coast radio station in Madagascar, at 1000 UT(GMT) daily, their call sign, position, course, and speed. Messages, which are free of charge, should be addressed to "Cencorsau, Tananarive" through the nearest coast radio station in Madagascar.

Signals

Storm signals denoting the localities of the Comoros and Madagascar threatened by a cyclone are indicated by showing a black cylinder and black cones, displayed from a flagstaff, as described in the accompanying table. The signals are numbered from 1 to 14 to permit rapid transmission by radio.

Signal No.	Signal	Meaning
1	Cylinder above two cones, points upward	Between Antsiranana and Antalaha—E coast of Madagascar
2	Cylinder between two cones, points upward	Between Antalaha and Port Sainte Marie (Ambodifototra)—E coast of Madagascar

Signal No.	Signal	Meaning
3	Cylinder below two cones, points upward	Between Port Sainte Marie (Ambodifototra) and Vatamandry—E coast of Madagascar
4	Cylinder above two cones, points downward	Between Vatamandry and Mananjary—E coast of Madagascar
5	Cylinder between two cones, points downward	Between Mananjary and Farafangana—E coast of Madagascar
6	Cylinder below two cones, points downward	Between Farafangana and Tolanaro (Faradofay)—E coast of Madagascar
7	Cylinder below two cones, with the upper cone point downwards and the lower cone point upwards	Between Antsiranana and Hellville (Andoany)—W coast of Madagascar
8	Cylinder above a cone, points upwards	Between Hellville (Andoany) and Mahajanga (Majunga)—W coast of Madagascar
9	Cylinder below a cone, points upwards	Between Mahajanga (Majunga) and Maintirano—W coast of Madagascar
10	Cylinder above a cone, points downwards	Between Maintirano and Morondava—W coast of Madagascar
11	Cylinder below a cone, points downwards	Between Morondava and Toliari—W coast of Madagascar
12	Cylinder above two cones, with the upper cone point downwards and the lower cone point upwards	Between Toliari and Tolanaro (Faradofay)—S extremity of Madagascar
13	Cylinder between two cones, points towards the cylinder	Comoros
14	Cylinder between two cones, bases towards the cylinder	E part of the Comoros

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The mailing address is B.P. 620, Antsahavola, Antananarivo.

The U.S. Embassy is situated at 14-16 Rue Rainitovo,
Antsahavola, Antananarivo.

U. S. Embassy Madagascar Home Page http://www.usmission.mg
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General

Malaysia consists of 11 states and one federal territory, located on the mainland (Malay Peninsula), and the states of Sabah and Sarawak, located on the island of Borneo. The two sections of the country are separated by the South China Sea and lie about 400 miles apart.

The mainland section of Malaysia is bounded on the N by Thailand and on the S by Singapore.

The island section is bounded on the S side by Indonesia (S part of Borneo) and Brunei lies about midway along its N coast.

Malaysia is involved in a complex territorial dispute with China, the Philippines, Taiwan, Vietnam, and Brunei concerning the Spratly Islands. In addition, Malaysia is involved in a dispute with Singapore concerning two islands, with Brunei concerning two islands, and with the Philippines concerning Sabah.

The terrain consists of coastal plains rising to hills and mountains. Most of the central part of the Malay Peninsula is covered by dense tropical jungle.

The climate is tropical, with a Southwest Monsoon from April to October and a Northeast Monsoon from October to February.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing Devices

Fish aggregating devices are moored at a number of places off the E and W coasts of the Malay Peninsula. These devices lie in depths of up to 30m and are usually marked by buoys. Vessels should give them a wide berth.

Rigs

Movable oil drilling rigs and production platforms may be encountered off the coasts of Malaysia and in open waters. Buoys associated with the drilling operations are frequently moored in the vicinity of these structures. The positions of these rigs and buoys are frequently changed and are generally promulgated by radio navigational warnings.

Piracy

It was reported (1995) that vessels have been attacked by armed thieves in the vicinity of Malacca Strait and Singapore Strait, mainly near Phillip Channel. These attacks were usually made from fast motor boats approaching from astern. Loaded vessels with low freeboard seem to be particularly vulnerable. Vessels with low freeboard transiting the Strait of Malacca often use security lights to guard against piracy. These lights by their brilliance may obscure the vessel's navigation lights.

The International Maritime Bureau (IMB) of the International Chamber of Commerce has established a Piracy Countermeasures Center at Kuala Lumpur.

The center operates for the Southeast Asian Region and is able to receive reports from vessels concerning attacks and advise of danger areas. Piracy warnings originated by the Center will be broadcast daily to NAVAREA XI, VIII, and X through Enhanced Group Calling using the SafetyNET System.

For further details the IMB Center can be contacted, as follows:

IMB Piracy Reporting Center
ICC International Maritime Bureau
P.O. Box 12559
50782 Kuala Lumpur
Malaysia
Telephone: +60-3-2031-0014
Facsimile: +60-3-2078-5769
Telex: +84-34199 (IMBPCI MA34199)
E-mail: imbkl@icc-ccs.org.uk

IMB Piracy Reporting Center Home Page

http://www.iccwbo.org/ccs/menu_imb_piracy.asp

Sand Waves

Strong tidal currents in Malacca Strait, arising from the water exchange between the Indian Ocean and the South China Sea, cause large uniform sand waves on the sea bed. For further information, see Singapore—Cautions—Sand Waves.

General

For further information concerning dangers in the vicinity of the Malacca and Singapore Straits, see Singapore—Cautions.

Currency

The official unit of currency is the Malaysian ringgit, consisting of 100 sen.

Firing Areas

The following firing practice and exercise areas lie off the W coast of Malaysia:

1. **(WM) D1 Butterworth.**—Enclosed by a line joining the following positions:

- 5°43'N, 100°19'E.
- 5°43'N, 100°15'E.
- 5°57'N, 100°02'E.
- 6°02'N, 100°02'E.
- 6°04'N, 100°04'E.
- 6°04'N, 100°09'E.
- 5°53'N, 100°21'E.

2. **(WM) D16 Song Song.**—Enclosed by a line joining the following positions:

- 5°49'N, 100°17'E.
- 5°49'N, 100°18'E.
- 5°48'N, 100°20'E.
- 5°47'N, 100°21'E.
- 5°46'N, 100°19'E.

- 5°45'N, 100°18'E.
- 5°47'N, 100°17'E.

3. **(WM) D18 Butterworth.**—Enclosed by a line joining the following positions:

- 5°00'N, 99°00'E.
- 5°47'N, 99°00'E.
- 5°47'N, 99°47'E.
- 5°00'N, 99°47'E.
- 5°05'N, 99°05'E.
- 5°13'N, 99°05'E.
- 5°13'N, 99°42'E.
- 5°05'N, 99°42'E.
- 5°42'N, 99°05'E.
- 5°42'N, 99°42'E.
- 5°34'N, 99°42'E.
- 5°34'N, 99°05'E.

4. **(WM) P19 Bukit Serene.**—An area within a circle, with a radius of 2 miles, centered on 1°28'N, 103°46'E with the S border coinciding, with the coast line of South Johor.

5. **(WM) D30 Butterworth.**—Enclosed by a line joining the following positions:

- 7°04'N, 98°00'E.
- 5°45'N, 98°00'E.
- 4°08'N, 100°18'E.
- 5°00'N, 100°05'E.
- 5°00'N, 100°00'E.
- 6°15'N, 100°00'E.
- 6°20'N, 99°55'E.
- 6°17'N, 99°30'E.

6. **(WM) D41 Malaysian Naval Exercise Area.**—Enclosed by a line joining the following positions:

- 1°25'N, 103°00'E.
- 1°30'N, 103°00'E.
- 1°27'N, 103°10'E.
- 1°22'N, 103°10'E.

7. **(WM) R301 Lumpur.**—Enclosed by a line joining the following positions:

- 3°20'N, 101°08'E counterclockwise along a 20-mile arc from the point of vortex (3°20'N., 101°28'E.) to
- 2°59'N, 101°27'E direct to
- 2°40'N, 101°25'E on a 40-mile arc from the point of vortex, then clockwise along the 40-mile arc to
- 3°20'N, 100°48'E.

8. **(WM) R401 Lumpur.**—Enclosed by a line joining the following positions:

- 3°20'N, 100°57'E.
- 3°20'N, 100°37'E.
- 4°00'N, 100°09'E.
- 4°00'N, 100°29'E.
- 3°48'N, 100°47'E then S for 2 miles to the W side of the coast line and then to
- 3°35'N, 101°01'E.

9. **(WM) R402 Alor Setar.**—Enclosed by a line joining the following positions:

- a. 6°15'N, 99°30'E.
- b. 6°15'N, 100°05'E then W along the Alor Setar Control Zone boundary to
- c. 6°26'N, 100°09'E then a straight line joining the Malaysia/Thailand border to
- d. 6°26'N, 99°30'E.

10. **(WM) R403 Alor Setar.**—Enclosed by a line joining the following positions:

- a. 5°58'N, 100°21'E then W along the coast to Alor Setar Control Boundary to
- b. 6°24'N, 100°08'E then W along the same boundary to
- c. 6°10'N, 100°04'E.
- d. 5°58'N, 100°17'E.

For further information concerning firing practice areas lying off the E coast of the Malay Peninsula and off the N coast of East Malaysia, see Pub. 120, *Sailing Directions* (Planning Guide) Pacific Ocean and Southeast Asia.

Government



Flag of Malaysia

Malaysia is a constitutional monarchy. The country is divided into 13 states and three federal territories.

Malaysia is governed by a paramount ruler (King) elected by and from the hereditary rulers of the states for a 5-year term. The Prime Minister is the leader of the party who wins a plurality in legislative elections for the House of Representatives. The bicameral Parliament consists of a 69-member Senate (43 appointed by the King and 26 appointed by the state legislatures) and a 192-member directly-elected House of Representatives serving 5-year terms.

The legal system is mostly based on English common law. The capital is Kuala Lumpur.

Holidays

The following holidays are observed:

January 1	New Year's Day (not observed in Johore, Kedah, Kelantan, Perlis, and Trengganu)
Chinese New Year	Variable
May 1	Labor Day
Wesak Day	Variable

First Saturday in June	King's Birthday
August 31	Independence Day
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

In addition, numerous local holidays, which vary from port to port, are also observed.

Industries

Major industries include the production and refining of crude oil and the production of liquefied natural gas.

Other principal industries include light manufacturing, electronics, tin, bauxite, iron ore, copper, rubber, timber, and palm oil processing. Livestock raising, fishing, shipping, and tourism are also important.

Agricultural crops include rubber, rice, palm oil, cocoa, tea, tobacco, fruits, coconut oil, and pepper.

Languages

Malay is the official language. Tamil, Chinese, and tribal dialects are also widely used. English is used in commerce, government, and secondary education.

Navigational Information

Enroute Volumes

Pub. 161, *Sailing Directions* (Enroute) South China Sea and Gulf of Thailand.

Pub. 174, *Sailing Directions* (Enroute) Strait of Malacca and Sumatra.

Maritime Claims

The maritime territorial claims of Malaysia are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Limit of Exploitation.

* Claims straight baselines. Prior authorization required for nuclear-powered vessels or vessels carrying nuclear material to enter the territorial sea.

Maritime Boundary Disputes

Indonesia asserts claims to Pulau Sipidan (4°07'N., 118°38'E.) and Pulau Ligitan (4°10'N., 118°53'E.), located on the E coast of Borneo, which were awarded to Malaysia in 1999 by the International Court of Justice.

Involved in a complex dispute with China, the Philippines, Taiwan, Vietnam, and possibly Brunei over the Spratly Islands (8°38'N., 111°55'E.). The 2002-issued *Declaration on the Conduct of Parties in the South China Sea* has eased tensions but

falls short of a legally-binding code of conduct desired by several of the disputants.

A short section of the maritime boundary with Thailand at the mouth of the Sungai Kolok (6°15'N., 102°05'E.) remains in dispute.

A dispute with Singapore over Pedra Blanca (Pulau Batu Putih) (1°20'N., 104°24'E.) will be settled by arbitration.

In 2003, Malaysia and Brunei ceased oil and gas exploration in their offshore and deepwater sea beds. Negotiations are in progress over allocation of the disputed areas.

Regulations

Vessels are advised not to anchor in the Strait of Malacca and Singapore Strait between the landward limit of the Traffic Separation Scheme or precautionary area and the adjacent port limits. Vessels are to anchor only in designated areas.

For information concerning Navigation Rules for the Malacca Strait and Singapore Strait, see Singapore—Regulations.

Search and Rescue

General

The Marine Department of the Malaysian Ministry of Transport is responsible for coordinating search and rescue operations.

Each Maritime Rescue Coordination Center (MRCC) and Maritime Rescue Coordination Subcenter (MRSC) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16. Penang Coast Radio Station (9MG) also maintains a continuous listening watch for distress traffic on 500 kHz.

Each center can be contacted by e-mail, as listed in the accompanying table.

Ship Reporting System

STRAITREP is a joint Indonesia-Malaysia-Singapore mandatory ship reporting system in the Straits of Malacca and Singapore. For further information on STRAITREP, see Singapore—Search and Rescue—Reporting Systems.

Signals

General

Signals are used within the limits of ports in Malaysia are given in the accompanying table.

Diving Operations

A vessel attending underwater swimmers or divers will display the following signals as a warning to proceed at reduced speed in the vicinity:

1. By day—A red flag with a white diagonal cross.
2. At night—A red light waved slowly from side to side.

Ammunition and Explosives

Vessels employed in dumping ammunition and other explosives at sea display the following signals:

1. By day—A red flag at a height of not less than 3.6m above the upper deck.
2. At night—A red flag at a height of not less than 3.6m above the upper deck.

These vessels should be given a wide berth.

Time Zone

The Time Zone description is HOTEL (-8). Daylight Savings Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) in Malaysia are, as follows:

1. **Sarawak**—Approaches to Bintulu Port. (Government of Malaysia)
2. **Strait of Malacca**
 - a. At One Fathom Bank. (IMO adopted)
 - b. Port Klang (Pelabuhan Klang) to Port Dickson. (IMO adopted)
 - c. Port Dickson to Tanjung Keling. (IMO adopted)
 - d. Melaka to Iyu Kecil. (IMO adopted)

Information on Traffic Separation Schemes off Singapore which affect traffic using the Strait of Malacca can be found in Singapore—Traffic Separation Schemes.

U.S. Embassy

The U.S. Embassy is situated at 376 Jalan Tun Razak, 50400 Kuala Lumpur.

The mailing addresses are, as follows:

1. Malaysia address—
P.O. Box 10035
50400 Kuala Lumpur
2. U.S. address—
American Embassy Kuala Lumpur
APO AP 96535-8152

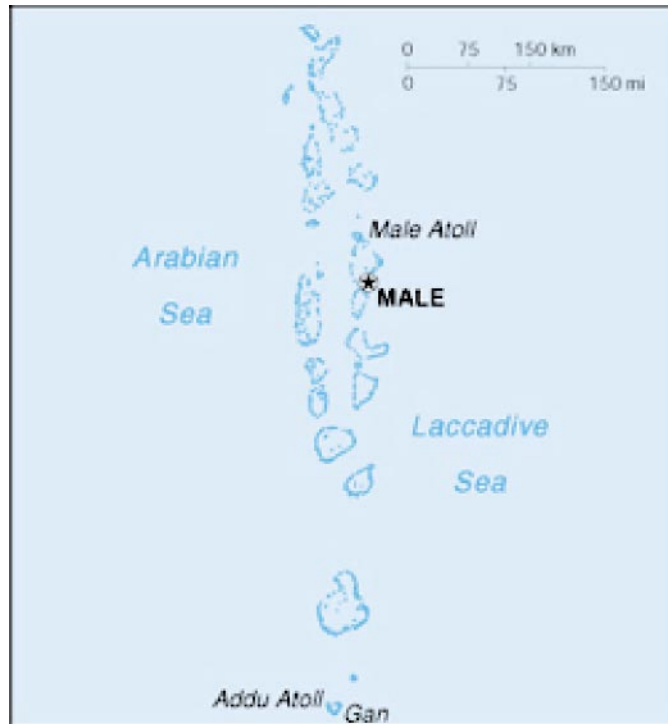
U. S. Embassy Malaysia Home Page

<http://malaysia.usembassy.gov>

Malaysia—MRCC and MRSC E-mail Addresses	
MRCC Malaysia (MRCC Port Klang)	mrcc@marine.gov.my
MRSC Penang	mrsc_penang@marine.gov.my
Peninsular Malaysia	
MRSC Johor	mrsc_johor@marine.gov.my
MRSC Kuala Terengganu	mrsc_terengganu@marine.gov.my

Malaysia—MRCC and MRSC E-mail Addresses	
Sabah and Sarawak	
MRSC Luban	mrsc_labuan@marine.gov.my
MRSC Sandakan	ppsdk@marine.gov.my
MRSC Kuching	mrsc_kuc@jls.gov.my

Malaysia Port Signals		
Day signals	Night signals	Meaning
A red flag	—	When displayed by a port service craft or buoytender—Indicates buoying, sweeping, or a diver down. Other vessel must keep well clear and reduce speed to dead slow when passing.
A red flag at both main yardarms	A red light at both main yardarms	When shown on a dredge—Indicates to keep well clear on either side
A black ball at the main yardarm and a red flag at the main yardarm	A white light at the main yardarm and a red light at the main yardarm	When shown on a dredge—Indicates to not pass on the side of the red flag or red light.
Note. —All lights, shapes and signals required by the Regulations for Preventing Collision at Sea, and all the flags and meanings of the International Code of Signals will be recognized within the port limits with the above modifications and additions.		



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Cautions

Fishing

Fishing with traps, hand lines, and trolling gill nets is carried out in the vicinity of the atolls.

Buoyage

It is reported that many lighted beacons, of limited range, have been erected on the reefs and atolls for the use of local fishermen.

Currency

The official unit of currency is the rufiyaa (Maldivian rupee), consisting of 100 laari. It is reported that Sri Lankan currency is also used.

Government

Maldives is a republic. The country is divided into 19 atolls and one capital district.

Maldives is governed by a President, who is nominated by the People's Council and approved by a referendum. The Cabinet of Ministers is appointed by the President. The unicameral People's Council consists of 50 members, 42 of which are directly elected and 8 of which are named by the President, serving 5-year terms.

The legal system is based on Islamic law, with elements of English common law, primarily in commercial matters.

The capital is **Male** (4°10'N., 73°30'E.), which stands on one of the islands of North Male Atoll.

General

Maldives, lying about 400 miles SW of Sri Lanka (Ceylon), consists of a chain of 19 atolls formed by about 2,000 low, coral islets. This chain extends N for about 470 miles from **Addu Atoll** (0°35'S., 73°05'E.). Only about 200 of the larger coral islets are inhabited.

The islets are seldom more than 2m high, so that the coconut palms standing on them appear, on first approach, to be growing out of the water.

The climate is tropical, being mostly hot and humid. There is a dry Northeast Monsoon, from November to March, and a rainy Southwest Monsoon, from June to August.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.



Flag of Maldives

Holidays

The following holidays are observed:

January 1	New Year's Day
July 26-27	Independence Days
November 3	Victory Day
November 11-12	Republic Days

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

The major agricultural crops include coconuts, sugar cane, corn, cassava, onions, chillies, and sweet potatoes. Other industries are food processing, boat building, tourism, hand-crafts, coral and sand mining, woven mats, and fishing.

It is reported that the former military (UK) airstrip on Addu Atoll has been converted by the Maldivian government for commercial use.

Languages

Maldivian Divehi is the official languages. English is used by most government officials.

Navigational Information

Enroute Volume

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of Maldives are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Claims archipelagic status. Requires advance permission or notification for innocent passage of warships in the territorial sea.

Search and Rescue

The Maldives Coastguard is responsible for coordinating search and rescue operations within the Maldives Search and Rescue Region.

Male Coast Radio Station (8Q2) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

Rescue craft are located in Male.

Time Zone

The Time Zone description is ECHO (-5). Daylight Savings Time is not observed.

U.S. Embassy

There is no diplomatic representative in Maldives. All matters are referred through the U.S. Embassy in Colombo, Sri Lanka.

U. S. Embassy Sri Lanka Home Page
<http://usembassy.state.gov/srilanka>



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General

Mauritius (20°17'S., 57°33'E.), an island of volcanic formation, lies about 500 miles E of Madagascar. The island has a small coastal plain that rises to mountains with heights of over 800m. The shores are mostly fringed with coral reefs.

The climate is tropical, being modified by the Southeast Trade winds. There is a dry season, from May to November, and a hot wet season, from November to May.

Ile Rodrigues (19°41'S., 63°25'E.), the **Agalega Islands** (10°26'S., 56°40'E.), and **Cargados Carajos** (Saint Brandon) (16°50'S., 59°30'E.) are dependencies of Mauritius.

Ile Rodrigues lies about 350 miles E of Mauritius. It is 9.5 miles long, 4.5 miles wide, and formed of volcanic formations. The island attains a height of about 400m; its shores are fringed by coral reefs. Ile Rodrigues produces salt and onions. Live-stock raising and fishing are carried out.

The Agalega Islands, two in number, are low, wooded, and fringed by reefs.

Cargados Carajos is an extensive group of reefs, small islands, islets, and shoals. The main reef, mostly above water, extends about 26 miles in a SSW/NNE direction.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing with traps, hand lines, and trolling gill nets is carried out in the vicinity of the islands.

Rollers, long swell waves created by distant storms, affect Mauritius and Ile Rodrigues. This phenomenon occasionally lasts 4 to 5 days, frequently causing great damage and suspending all activities, though rarely for longer than 24 hours. During cyclone season, rollers may provide a good indication of a developing or approaching storm.

Currency

The official unit of currency is the Mauritius rupee, consisting of 100 cents. It is reported that British sterling and French francs can also be used.

Government

Mauritius is a parliamentary democracy. The country is divided into nine districts and three dependencies.

Mauritius is governed by a President, who is elected for a 5-year term by the National Assembly. The Prime Minister and



Flag of Mauritius

the Council of Ministers are appointed by the President. The unicameral National Assembly consists of 62 directly-elected members and eight appointed members from losing political parties, serving 5-year terms.

The legal system is based on French civil law, with some elements of English common law.

The capital is Port Louis.

Holidays

The following holidays are observed:

January 1-2	New Year's Days
February 1	Abolition of Slavery
March 12	Independence Day (Republic Day)
Good Friday	Variable
May 1	Labor Day
August 25	Assumption Day
September 9	Father Leval Day
November 1	All Saints' Day
November 2	Arrival of Indentured Laborers
December 25	Christmas Day (Natal)

Cavadee, Maha Shivaratree, Chinese New Year/Chinese Spring Festival, Holi, Ougadi and Varusha Piruppu, Ganesh Chaturthi, Mid-Autumn Festival, Divali, and Ganga Asnan are religious festivals, the dates of which vary from year to year depending on the appearance of the moon.

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoorra, and the Prophet's Birthday.

Industries

Agriculture and livestock raising are important. The main crops include sugar cane, tea, tobacco, and vegetables.

The major industries are food processing, fishing, tourism, textiles, chemicals, and diamond cutting.

Languages

English is the official language. French, Creole, and Bhoj-puri are also widely used.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Mauritius are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

*Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

Maritime Boundary Disputes

Claims, along with Seychelles, the Chagos Archipelago, part of the United Kingdom-administered British Indian Ocean Territory.

Claims French-administered Ile Tromelin (15°53'S., 54°31'E.).

Search and Rescue

The National Coast Guard coordinates search and rescue operations within the waters around Mauritius.

Mauritius Coast Radio Station (3BM) maintains a continuous listening watch for distress traffic on VHF channel 16, VHF channel 70, 2182 kHz, and 2187.5 kHz.

In order to facilitate rescue operations in the event of aircraft/ships in distress, all vessels within the area bounded by 10°S, 30°S, 55°E, and 95°E are requested to transmit to Mauritius Radio, at 0700 daily, their call sign, position, course, and speed. This information is rebroadcast at 0930 daily.

Time Zone

The Time Zone description is DELTA (-4). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 4th Floor, Rogers House, John Kennedy Avenue, Port Louis.

The mailing addresses are, as follows:

1. Mauritius address—
P.O. Box 544
Port Louis
2. U.S. address—
American Embassy Port Louis
Department of State

Washington DC 20521-2450

U. S. Embassy Mauritius Home Page
<http://mauritius.usembassy.gov>



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General

Mozambique is located in the SE part of Africa. It is bounded on the E by the Indian Ocean, on the S by South Africa, and on the N by Tanzania.

The coast is mostly sandy, with several lagoons and inlets. The broad coastal plain rises to central plateaus and mountains stand along the W border. The country is crossed by a number of important rivers.

The climate varies from tropical to subtropical in all areas except the high plateaus and mountains. Warmer temperatures prevail during the rainy season (October to May). The rainfall is irregular, and some areas, particularly in the S, are subject to severe droughts and floods.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Sandwaves.—Sandwaves are similar to sand dunes on land; the action of the water movement forms the sand or gravel sea bed into a series of ridges. Fields of sand waves may be several miles in extent, varying in size from mere ripples to waves of up to 20m in amplitude. The waves forming the primary pattern may be several miles long. They usually lie nearly at right angles to the main direction of water movement, but small waves are sometimes found lying parallel to it. Secondary patterns are usually superimposed on the primary pattern, often at an angle; it is where the crests of the patterns coincide that the shallowest depths can be expected.

At the entrance to Sofala Bay, Mozambique, sand waves up to 26m high have been reported to exist.

Currency

The official unit of currency is the metical, consisting of 100 centavos.

Government



Flag of Mozambique

Mozambique is a republic. The country is divided into ten provinces and one city.

Mozambique is governed by a directly-elected President serving a 5-year term. The Prime Minister is appointed by the President. The unicameral National Assembly consists of 250 directly-elected members serving 5-year terms.

The legal system is based on Portuguese civil law and customary law.

The capital is Maputo (formerly Lourenco Marques).

Holidays

The following holidays are observed:

January 1	New Year's Day
February 3	Heroes' Day
April 7	Day of the Mozambique Woman

May 1	Labor Day
June 25	Independence Day
September 7	Victory Day
September 25	Revolution Day
November 10	Maputo City Day (Maputo only)
December 25	Christmas Day/Family Day

Industries

Although the country is mostly rural, there is some substantial industry in and around Maputo and Beira, mainly in steel, engineering, textiles, food processing, docks, and railways. The chief exports are cashews, cotton, sugar, mineral products, timber products, tea, copra, and coal.

Languages

Portuguese is the official language. English is also widely spoken. There are many tribal languages.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Mozambique are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines.

Search and Rescue

The Maritime Administration and Safety Authority (SAF-MAR) coordinates all maritime search and rescue operations within the Maritime Search and Rescue Region of Mozambique and can be reached by e-mail, as follows:

safmar@zebra.uem.mz

A Maritime Rescue Coordination Center (MRCC) is located at Maputo and maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

Signals

Storm signals used in Mozambique are given in the accompanying table.

Time Zone

The Time Zone description is BRAVO (-2). Daylight Savings Time is not observed.

U.S. Embassy

The mailing address is P.O. Box 783, Maputo.

The U.S. Embassy is situated at Avenida Kenneth Kuanda 193, Maputo.

U. S. Embassy Mozambique Home Page
<http://maputo.usembassy.gov>

Mozambique Storm Signals		
Day signal	Night signal	Meaning
Black triangle, point up	Two red lights, vertically disposed	Gale or storm from NW
Black triangle, point down	Two yellow lights, vertically disposed	Gale or storm from SW
Two black triangles, points up, vertically disposed	One red light over one yellow light	Gale or storm from NE
Two black triangles, points down, vertically disposed	One yellow light over one red light	Gale or storm from SE
Two black triangles, bases together, vertically disposed	One red light between two yellow lights, vertically disposed	Gale, storm, or cyclone probable
Black ball	One red light	Gale or storm from undetermined direction
Square flag	—	Wind expected to veer
Two square flags	—	Wind expected to back
Black cylinder	One green light	Cyclone in Mozambique Channel



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The rainy season lasts from January to March with fewer showers from September to December.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Namibia dollar, consisting of 100 cents. The South African rand is also a legal tender of parity.

General

Namibia, located in the S part of Africa, is bounded on the N by Angola and Zambia, on the W by the South Atlantic Ocean, on the S and SE by South Africa, and on the E by Botswana.

The coast, about 800 miles long, extends between the mouth of the **Kunene River** (17° 14'S., 11° 45'E.) and the mouth of the Orange River.

The country consists of three main regions, as follows:

1. The Namib Desert, an extremely arid and desolate region, is 50 to 80 miles wide and stretches along the entire coast.

2. The Central Plateau, which covers about half of the total area, lies E of the Namib Desert. This plateau varies in elevation from 1,000 to 2,000m and consists of rugged mountains, sand-filled valleys, and plains.

3. The Kalahari Desert covers the E, NE, and N regions of the country.

Government



Flag of Namibia

Namibia a multi-party republic. The country is divided into 13 regions

Namibia is governed by a directly-elected President serving a maximum of two 5-year terms. The bicameral legislature consists of a 78-member National Assembly (72 of which are directly elected by proportional representation and six of which are appointed) serving 5-year terms and a 26-member National Council, composed of two appointed members from each of the 13 regions serving 6-year terms.

The legal system is based on Roman-Dutch law and the 1990 constitution.

The capital is Windhoek.

Holidays

The following holidays are observed:

January 1	New Year's Day
March 21	Independence Day
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 4	Cassinga Day
Ascension Day	Variable
May 25	Africa Day
August 26	Heroes' Day
December 10	Human Rights Day
December 25	Christmas Day
December 26	Family Day

Industries

The major industries are meat packing, fish processing, dairy products, fertilizer, textiles, metal products, and the mining of copper, lead, zinc, silver, gold, tin, diamonds, and uranium. Diamonds are also recovered from offshore alluvial deposits.

Livestock raising is very important as the water and poor rainfall render agriculture, except in the N and NE parts, almost impossible. Crops include wheat, maize, sunflower seeds, and sorghum.

Languages

English is the official languages. Afrikaans and German are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Namibia are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

Pollution

Pollution Reports

The Principal Officer South African Maritime Safety Authority (SAMSA) shall be notified of discharge of oil and/or damage to vessels when navigating within 50 miles of the coasts of South Africa and Namibia. For further information, see South Africa—Regulations—Pollution Reports.

Regulations

General

Vessels should send their ETA at least 72 hours in advance (excluding Sunday and public holidays) to their port of destination, stating the following information:

1. Vessel length, freeboard, and draft fore and aft.
2. Details on any dangerous cargo.
3. Type and quantity of cargo being landed or loaded.
4. Bunkers and other requirements.
5. Factors affecting the safe entry and/or berthing of the vessel.
6. Is the vessel engaged in towing or salvage? If yes, further details are required.

Vessels should send their ETA to the appropriate Port Control on VHF channel 16 when within 20 miles of their destination.

A continuous listening watch is to be maintained on VHF channel 16 by all vessels anchored within or near the limits of a Namibian port.

Search and Rescue

Namibian Search and Rescue (NAMSAR) coordinates all search and rescue efforts within Namibian waters and works in close cooperation with the South African Search and Rescue Organization (SASAR). Walvis Bay Port Control acts as a Maritime Rescue Coordination Subcenter under control of the Maritime Rescue Coordination Center (MRCC) South Africa. Inshore rescue craft are stationed at Walvis Bay and Swakopmund.

Walvis Bay Coast Radio Station (V5W) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16. Luderitz Coast Radio Station (V5L) maintains a continuous listening watch for distress traffic on 2182 kHz.

The waters of Namibia lie within the area of responsibility for the South African Ship Reporting System. For further in-

formation, see South Africa—Search and Rescue—Ship Reporting System.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time (BRAVO (-2)) is maintained from the first Sunday in September until the first Sunday in April.

U.S. Embassy

The U.S. Embassy is situated at the Ausplan Building, 14 Lossen Street, Windhoek.

The mailing address is Private Bag 12029, Windhoek.

U. S. Embassy Namibia Home Page
<http://windhoek.usembassy.gov>



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Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the naira, consisting of 100 kobo.

Government

General

Nigeria, located on the W coast of Africa, is bounded on the W by Benin, on the N by Niger, on the NE by Chad and Cameroon, and on the S by the Gulf of Guinea.

A belt, from 10 to 60 miles wide, fronts the coast and consists of dense mangroves and swamps. Tropical forests, rich in palm-oil trees and mahoganies, are located behind this belt.

A few mountains rise in the S portion of the country except along the E boundary. A large plateau, from 609 to 1,828m high, lies N and E of the junction of the Niger River and the Benue River.

The climate varies, being equatorial in the S part of the country, tropical in the central part, and arid in the N.



Flag of Nigeria

Nigeria is a sovereign federal republic. The country is divided into 36 states and one federal territory.

Nigeria is governed by a directly-elected President serving a maximum of two 4-year terms. The bicameral National Assembly consists of a directly-elected 360-member House of Representatives serving 4-year terms and a directly-elected 109-member Senate serving 4-year terms.

The legal system is based on English common law, tribal law, and Islamic law.

The capital is Abuja, formerly known as Lagos.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Good Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
May 29	Democracy Day
October 1	Independence Day
December 25	Christmas Day
December 26	Boxing Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), and the Prophet's Birthday.

Industries

The major industries include crude oil production, natural gas processing, and the mining of coal, iron ore, marble, columbite, lead, and zinc.

Other industries are textiles, cement, building materials, food products, footwear, chemicals, printing, ceramics, fertilizer, wood products, timber, palm oil processing, livestock raising, fishing, leather goods, and the mining of tin, uranium, and gold.

The principal crops include millet, sorghum, plantains, oil palms, maize, yams, rice, cassava, groundnuts, cottonseed, cocoa, and peanuts. The most important species of lumber are mahogany, iroko, obeche, abwa, ebony, and camwood.

Languages

English and French are the official languages. Numerous native dialects, of which Hausa is the most common, are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Nigeria are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

Continental Shelf

Depth of 200m or the Limit of Exploitation.

* Requires advance permission or notification for innocent passage of warships in the territorial sea.

Maritime Boundary Disputes

A Cameroon-Nigeria Joint Border Commission has been formed to resolve border differences.

An equidistant settlement of the Cameroon-Equatorial Guinea-Nigeria maritime boundary was reached in 2002, but a dispute between Cameroon and Equatorial Guinea over an island at the mouth of the Riviere Ntem, imprecisely-defined coordinates in the settlement, and the unresolved Bakasi Peninsula allocation contribute to the delay in adopting the settlement.

Pilotage

Pilotage is compulsory within the four Sea Pilotage Districts within the Exclusive Economic Zones of the Nigerian coast. The districts are contained within an area bound by the following points:

- 4°30.33'N, 8°24.12'E.
- 4°01.80'N, 8°20.42'E.
- 3°26.50'N, 7°24.42'E.
- 3°28.75'N, 6°00.00'E.
- 4°49.12'N, 5°00.00'E.
- 6°00.00'N, 4°30.00'E.
- 6°00.00'N, 3°10.00'E.
- 6°23.75'N, 3°10.00'E.

The boundaries of the four Sea Pilotage Districts are, as follows:

- District A (Calabar River Oil Terminal).**—The navigable area between 8°24.12'E and 7°24.42'E.
- District B (Bonny Offshore Terminal and Brass Oil Terminal).**—The navigable area between 7°24.42'E and 6°00.00'E.
- District C (North Apoi Oil Terminal, Forcados Oil Terminal, and Escravos Oil Terminal).**—The navigable area between 6°00.00'E and 4°30.00'E.
- District D (Kuramo and Lekki).**—The navigable area between 4°30.00'E and 3°10.00'E.

Regulations

Ship Entry Notice (SEN)

Two months prior to arrival in Nigerian waters, agents must register vessels with the Nigerian Ports Authority (NPA) in order to obtain a Ship Entry Notice (SEN). This does not apply to vessels carrying petroleum products in bulk or in ballast. Vessels cannot enter the territorial waters of Nigeria without a SEN.

Night Navigation in Nigerian Ports

All Nigerian ports are closed from 2000 to 0600. Port signals stations display three red lights, vertically disposed, during this period to indicate the port is closed. No vessel may enter or depart a port when this signal is displayed except in an emergency with prior approval of the harbormaster.

In addition, vessels are prohibited from approaching, maneuvering, or anchoring in the following area from 2000 until 0600 unless they have been cleared to enter Nigerian ports and their ETA has been reported to the harbormaster, as follows:

1. Lagos.—An area extending 10 miles E and W of the harbor entrance to a distance of 5 miles from the coast.
2. Approaches to the Escravos River and the Forcados River.—An area lying between the parallels of 5°21'N and 5°45'N to a distance of 15 miles from the coast.
3. Approaches to the Bonny River and the New Calabar River.—An area extending 5 miles E and W of Fairway Lighted Buoy to a distance of 15 miles from the coast.
4. Approaches to the Calabar River.—An area extending 5 miles E and W of Fairway Lightfloat to a distance of 15 miles from the coast.

Due to the complicated nature of the regulations, vessels are advised to communicate with their local agents well in advance in order to ensure compliance.

Unauthorized vessels are prohibited to come alongside vessels in the above areas. Vessels should report any unauthorized craft to the harbormaster.

Special Requirement

Before entering any of the creeks, rivers, or channels in Nigerian waters, vessels are required to broadcast their intentions and keep a continuous watch on 2182 kHz as necessary.

Vessels should broadcast their positions frequently to facilitate safe navigation, but such messages must be discontinued on request by any naval, military, or port authority or any Nigerian radio station or authorized officer.

VHF Communications

All VHF communication is subject to the following regulations:

1. VHF channel 16—Used as a calling and listening frequency by vessels, the harbormaster, the pilot station, and the signal station.
2. VHF channels 9, 11, 12, 13, and 14 —Reserved for the sole use of the NPA. Agents and vessels are not to use these channels unless required to do so by the NPA.
3. VHF channels 22, 23, 24, and 25—Reserved as working channels for vessel to vessel and agent to vessel communications.
4. VHF channel 21—Reserved as a calling and listening frequency for communication between agents and their land mobile station.
5. VHF channels 17, 18, 19, and 20—Reserved as working channels for communications between shore stations other than the NPA.

The manner of operation under these restrictions is, as follows:

1. All vessels will keep simultaneous listening watches on VHF channels 16 and 21. They will use VHF channel 16 when calling the harbormaster, pilot station, the East Mole Signal Station, or other vessels. Vessels will use VHF channel 21 when calling their agents.

2. All non-NPA fixed stations will keep watch on VHF channels 16 and 21. They will use channel 16 when calling the pilot station, harbormaster, and signal station. For calling their respective vessels, they will use VHF channel 21. After establishing contact, they will switch over to a mutually acceptable channel from amongst those assigned above as applicable. Agents will only use VHF to contact the NPA station as a last resort and only when the more conventional methods such as telephones and messengers fail.

3. The NPA stations will use VHF channel 16 for contacting vessels, tugs, and operational centers. They will use VHF channel 11 for other NPA internal communications. After establishing contact, these stations will select a working channel other than VHF channel 11, 14, or 16. The fire service will continue to use VHF channel 14 while maintaining a listening watch on VHF channel 16.

Oil Terminals—ETA Reporting

Vessels are required to report their ETA at the terminal anchorage or fairway lighted buoy 7 days, 72 hours, 48 hours, and 24 hours in advance. If the vessel is leaving the previous port less than 7 days prior to arrival at the terminal, the ETA should also be sent upon departure from the previous port.

Any amendments to the ETA of more than 12 hours should be sent immediately.

Vessels should contact the terminal directly when within VHF range.

Search and Rescue

The National Maritime Authority is responsible for coordinating search and rescue operations and can be contacted by e-mail, as follows:

dgnma@nigeria-maritime.com

Future plans include establishing a Maritime Rescue Coordination Center (MRCC) in Lagos and Maritime Rescue Coordination Subcenters (MRSC) at Oron, Port Harcourt, and Warri.

Time Zone

The Time Zone description is ALFA (-1). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 7 Mambilla Street, Abuja. The mailing address is P.O. Box 554, Lagos.

U. S. Embassy Nigeria Home Page
<http://abuja.usembassy.gov>



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General

Oman is located in the SE part of the Arabian Peninsula. It is bordered on the W by Yemen and Saudi Arabia, on the S by the Arabian Sea, on the NE by the Gulf of Oman, and on the NW by the United Arab Emirates. The country includes the islands of Kuria Muria and Al Masirah which lie off the SE coast. In addition, the detached province of Ru'us al Jibal is located at the extremity of the promontory (Musandam Peninsula) forming the S side of the entrance to the Persian Gulf. This province also includes the islands lying close off the promontory. The Sultanate of Oman was formerly known as the Sultanate of Muscat and Oman until 1970.

The country consists of a vast central desert plain with rugged mountains in the N and S parts. Al Batinah, a fertile coastal plain, extends NW of Masqat for over 150 miles.

The climate is mostly dry desert; it is hot and humid along the coast, but is hot and dry inland. The southernmost part of the country is subject to a Southwest Monsoon in the summer (May to September).

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Omani rial, consisting of 1,000 baiza.

Firing Areas

Naval firing practices (surface to surface and surface to air) and other exercises take place within the following areas:

1. **Area Tahr (D37).**—An area bounded by lines joining the following positions:
 - a. 24°18.00'N, 54°40.00'E.
 - b. 24°00.00'N, 58°39.00'E.
 - c. 23°51.75'N, 58°20.00'E.
 - d. 23°51.75'N, 58°06.00'E.
 - e. 24°09.00'N, 57°40.00'E.
2. **Daymaniyat Naval Gunfire Support Range.**—An area bounded by lines joining the following positions:
 - a. 23°51.75'N, 58°06.00'E.
 - b. 23°51.75'N, 58°20.00'E.
 - c. 24°01.70'N, 58°20.00'E.
 - d. 23°53.90'N, 58°02.60'E.
3. **Area Umm al Fayyarin (D38).**—An area bounded by the segment of a circle 10 miles in radius centered on 26°11'N, 56°30'E from 020° clockwise to 060°.
4. **Area Jazirat al Ghanam (R15).**—An area bounded by the segment of a circle 5 miles in radius centered on 26°24'N, 56°23'E from 040° clockwise to 250° and then 10 miles in radius centered on the same point from 250° clockwise to 040°.
5. **Area Jazirat Ghazant (D57).**—An area bounded by the segment of a circle 10 miles in radius centered on 17°36.7'N, 56°08.2'E clockwise from 17°35.83'N, 55°57.75'E to 17°28.5'N, 56°14.22'E, and then a straight line back to 17°35.83'N, 55°57.75'E.
6. **Area Marbat (D65).**—An area bounded by lines joining the following positions:
 - a. 16°53'N, 54°30'E.
 - b. 16°53'N, 55°10'E.
 - c. 16°13'N, 55°10'E.
 - d. 16°13'N, 54°30'E.
7. **Area Ras Hamar (D67).**—An area bounded by lines joining the following positions:
 - a. 16°42'N, 53°55'E.
 - b. 16°40'N, 53°34'E.
 - c. 16°25'N, 53°37'E.
 - d. 16°28'N, 53°58'E.
8. **Area Abu Rasas (D20).**—An area bounded by lines joining the following positions:
 - a. 20°15.5'N, 58°32.1'E.
 - b. 19°54.0'N, 58°09.1'E.
 - c. 19°43.2'N, 58°21.0'E.

d. 20°04.7'N, 58°43.9'E.

9. **Area Al Hadri (D41).**—An area of a circle with a radius of 1 mile centered on 20°35'20"N, 58°53'08"E.

Details of firing exercises within the above areas will be broadcast as warnings by Bahrain Radio (A9M) on 500 kHz, normally 3 days in advance. Vessels are advised to avoid these areas, or if it is necessary to enter them, to proceed with caution.

Government



Flag of Oman

Oman is a hereditary absolute monarchy. The country is divided into six regions and two governorates.

Oman is governed by a Sultan, who is both the chief of state and head of government. The Sultan legislates by decree and appoints a cabinet to assist him.

The Majlis al-Dwala (upper chamber) consists of 48 members, appointed by the Sultan, who have advisory powers only. The Majlis al-Shura (lower chamber) consists of 83 members serving 3-year terms who are directly elected by a limited number of voters; the Sultan has final authority over the make-up of the body, which debates domestic issues, but has no legislative or veto powers.

The legal system is based on English common law and Islamic law, with ultimate appeal to the Sultan.

The capital is Masqat (Muscat).

Holidays

The following holiday is observed:

Third week of November Omani National Days
(two days, as declared by
the government)

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoorra, and the Prophet's Birthday.

Industries

Crude oil production and refining are the predominant industries. There is also some natural gas production, copper mining and smelting, cement, and textile production. Agri-

culture and fishing are the traditional way of life. Crops include dates, limes, alfalfa, bananas, and vegetables.

Languages

Arabic is the official language. English, Baluchi, Urdu, and several Indian dialects are also used.

Mined Areas

Vessels are advised that mined areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Oman are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

Pollution

General

The discharge of oil is prohibited within 50 miles of the Omani coast.

Reporting

Vessels navigating in Omani waters are required to report pollution incidents and oil slicks. These reports are to be sent directly to the Ministry of Regional Municipalities and Environment during working hours (0730 to 1430):

1. Telephone: +968-24692550
2. Fax: +968-24692462
3. E-mail: dgen@mail.com

Messages can also be sent, at any time, to the Royal Omani Police Coastguard (telephone: 968-24714888 or facsimile: 968-24714937) or through Masqat Maritime Radio Station.

The following information should be included in the report whenever possible:

1. Date of observation.
2. Local time of observation.
3. Location of pollution:

- a. Latitude/longitude or grid reference.
 - b. Distance from land.
 - c. Nearest town/village.
4. Approximate size of pollution, in meters:
 - a. Length.
 - b. Width.
 - c. Percentage of area covered by oil.
 5. Oil type and description:
 - a. Is it a continuous cover? (Yes/No).
 - b. Is it broken cover (patch, streaky)? (Yes/No).
 - c. Tar balls (Yes/No).
 - d. Other (Yes/No).
 - e. Light brown (Yes/No).
 - f. Dark brown (Yes/No).
 - g. Black (Yes/No).
 - h. Silver sheen on water (Yes/No).
 - i. Rainbow colors on water. (Yes/No).
 6. Direction and speed of surface winds.
 7. Wave height.
 8. Pollution source (if vessel involved in the incident is seen):
 - a. Name of vessel.
 - b. Type of vessel.
 - c. Size of vessel.
 - d. Nationality/port of registration.
 - e. Course and speed of vessel.
 - f. Photographs/oil sample taken?
 - g. Is the vessel in distress?
 - h. State nature of distress (fire, collision, etc.).

Regulations

General

The master or owner of every ship shall be held directly responsible for the proper conduct and behavior of the crew and for strict observance of the laws of the Sultanate of Oman, particularly those laws concerning the sale, transference or consumption of any narcotic or alcoholic or intoxicating drink of any kind.

Vessels calling at the ports of Oman are required to have a copy of the local rules and regulations aboard. Vessels without a copy must obtain one as early as possible on arrival.

Anchorage

All vessels anchoring within the territorial waters of the Sultanate of Oman (12 miles), for the purpose of waiting for orders or in order to carry out engine repairs, should anchor within the latitudes of 23°53'N and 23°40'N, and between the longitudes of 58°10'E and 58°27'E. No other anchorage in this area may be used except when actually loading or discharging at SBM buoys.

All vessels using this anchorage must contact Mina Qabus Port Control on VHF channel 16 and give the following information:

1. Flag or port of registry.
2. Call sign.
3. DWT, GRT, and NRT.
4. Ports of call, including last port and next port.
5. Whether the vessel is carrying dangerous or hazardous cargo.

Search and Rescue

The Royal Air Force of Oman is responsible for coordinating search and rescue operations. Masqat (Muscat) Coast Radio Station (A4M) maintains a continuous listening watch on international distress frequencies.

Time Zone

The Time Zone description is DELTA (-4). Daylight Savings Time is not observed.

Traffic Separation Schemes

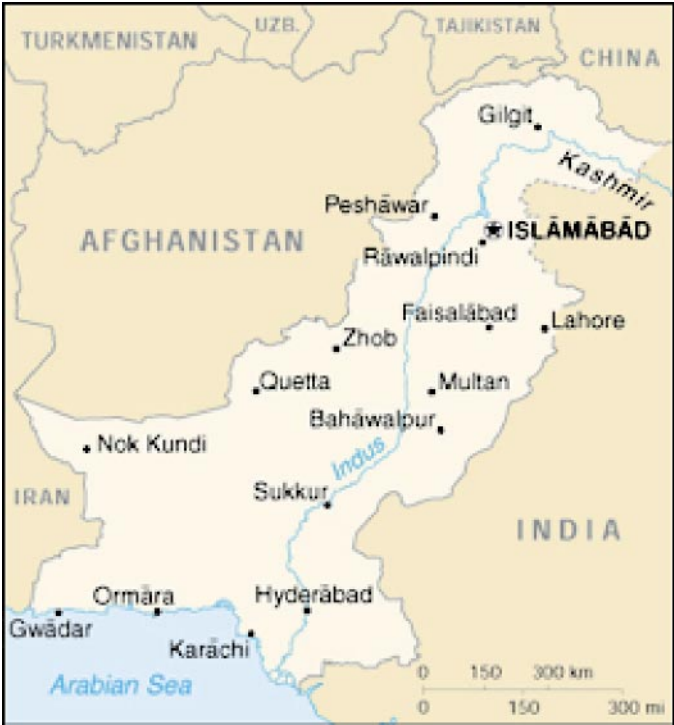
An IMO-approved Traffic Separation Scheme is located off Ras al Hadd.

U.S. Embassy

The U.S. Embassy is located on Jameat A'Duwal Al Arabiya Street, Al Khuwair area, Muscat.

The mailing address is P.O. Box 202, Postal Code 115, Madinat-al Sultan Qaboos, Muscat.

<p>U. S. Embassy Oman Home Page http://muscat.usembassy.gov</p>
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General

Pakistan is located in the S part of Asia. It is bounded on the W by Iran, on the NW by Afghanistan, on the N by China, on the NE by the disputed territory of Jammu and Kashmir, on the E by India, and on the SW by the Arabian Sea.

The N part of the country includes formidably mountainous terrain. At one point in this area, a narrow strip of Afghan territory, barely 20 miles wide, separates Pakistan from Tajikistan.

Between the Iranian frontier and Karachi, the coast consists chiefly of a wilderness area with hills and cliffs fronting the Baluchistan Plateau. Swamps and desert plains lie at the foot of the hills. Between the Indian frontier and Karachi, the Indus

River enters the sea through many mouths, but is little used as a waterway.

The climate is mainly hot dry desert with almost arctic temperatures in the mountainous N part.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 116 (Issued 5 March 2001)

1. Mariners calling on Pakistan are advised that levels of sectarian and factional violence remain high. Karachi, the main port, continues to be affected by politically-motivated killings.
2. On March 8 1995, unknown assailants opened fire on an official U.S. Consulate shuttle in Karachi, killing two Embassy employees and wounding a third.
3. Anti-American sentiment can be provoked easily and spontaneously in response to international events that radicals misconstrue as directed against Islam. For example, the U.N. resolution on sanctions against Afghanistan resulted in sporadic anti-American protests.
4. Port facilities and vessels may offer targets of opportunity for terrorist attacks. U.S. mariners are advised to exer-

cise heightened security awareness and prudent security precautions when in Pakistani ports and waters.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Pakistan rupee, consisting of 100 paisas.

Firing Areas

Firing, bombing, and other defense practice exercises take place in a number of areas lying off the coast of Pakistan. In view of the responsibility of range authorities to avoid accidents, the limits of these practice areas may not be shown on charts and the descriptions may not appear in the Sailing Directions (Enroute).

When air to air, air to sea, or ground firings are being carried out by aircraft, a large white or red sleeve-banner, a winged target, or a large flag are towed by another aircraft on a steady course. Generally, these warning signals are shown when the targets are stationary, but not when towed targets are used.

All marine craft operating as range-safety craft or target towing vessels will display, for identification purposes while in or in the vicinity of the danger area, a large red flag at the masthead. The range authorities are responsible for ensuring that there should be no risk of damage from falling shell-splinters, bullets, etc., to any vessel which may be in the practice area.

Firing practice exercise areas are located, as follows:

1. **Area ALPHA** (surface-to-surface and surface-to-air)—Enclosed by a line joining the following positions:

- 24°36'00"N, 66°47'50"E.
 - 24°47'36"N, 66°58'36"E.
 - 24°50'00"N, 66°40'00"E.
- Safety height—2,483m.

2. **Area BRAVO** (surface-to-surface and surface-to-air)—Enclosed by a line joining the following positions:

- 24°19'00"N, 66°58'00"E.
 - 24°00'30"N, 66°39'00"E.
 - 24°11'00"N, 66°27'00"E.
 - 24°25'00"N, 66°42'00"E.
- Safety height—6,096m.

3. **Area ECHO** (surface-to-surface and surface-to-air)—Enclosed by a line joining the following positions:

- 25°07'N, 66°30'E.
 - 25°07'N, 66°39'E.
 - 24°50'N, 66°39'E.
 - 24°50'N, 66°30'E.
- Safety height—1,524m.

4. **Area H1** (surface live ammunition)—Enclosed by a line joining the following positions:

- 24°36'N, 63°15'E.
 - 24°36'N, 62°30'E.
 - 24°21'N, 62°30'E.
 - 24°21'N, 63°15'E.
- Safety height—6,800m.

5. **Area H2** (surface live ammunition)—Enclosed by a line joining the following positions:

- 24°36'N, 62°30'E.
 - 24°36'N, 61°45'E.
 - 24°21'N, 61°45'E.
 - 24°21'N, 62°30'E.
- Safety height—6,800m.

6. **Sonmiani Range** (anti-aircraft live ammunition)—As follows:

- Centered on 25°11'N, 66°45'E.
- Arc of firing 220° to 310°.
- Safety range—14,000m (7.7 miles within arc).
- Safety height—10,000m.

Government



Flag of Pakistan

Pakistan is a republic. The country is divided into four provinces, one territory, and one capital territory.

Pakistan is governed by a President, elected by Parliament, to serve a 5-year term. The bicameral Parliament consists of a 100-member Senate, indirectly elected by provincial assemblies, serving 4-year terms and a 342-member directly-elected National Assembly serving 4-year terms.

The legal system is based on English common law, with provisions to accommodate the country's stature as an Islamic state.

The capital is Islamabad.

Holidays

The following holidays are observed:

March 23	Pakistan Day
May 1	Labor Day
August 14	Independence Day
September 6	Defense of Pakistan Day

September 11	Death Anniversary of Quaid-e-Azam
November 9	Iqbal Day
December 25	Birthday of Quaid-e-Azam

Christian holidays subject to the appearance of the moon include Good Friday, Easter Sunday, and Easter Monday. Christmas Day (December 25) and Boxing Day (December 26) are also celebrated.

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoor, and the Prophet's Birthday. In addition, the Islamic holidays of Shab-e-Barat and 27th Ramzan are observed in Karachi.

Industries

Agriculture, with raising of livestock, is a major industry. Crops include wheat, cotton, fruits, maize, sugar cane, jute, millet, opium poppies, and rice.

Other main industries include minerals, coal, textiles, food processing, fertilizers, steel products, natural gas, automobiles, and fishing.

Languages

Urdu is the official language. Punjabi is also widely used. English is used in business and in most government ministries.

Navigational Information

Enroute Volumes

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of Pakistan are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea. Requires foreign supertankers, nuclear-powered ships, and ships carrying nuclear materials to give prior notice before entering the territorial sea.

** Also considered a Security Zone.

Maritime Boundary Disputes

A dispute with India over the terminus of the estuary of Sir Creek (23°38'N., 68°02'E.), at the mouth of the Rann of Kutch, has prevented the establishment of a maritime boundary.

Pollution

The Maritime Security Agency in Pakistan is responsible for preventing and controlling marine pollution. Pakistan's Exclusive Economic Zone is under constant surveillance to monitor pollutants. Vessels found polluting the marine environment will be prosecuted in accordance with the law and will be held responsible for all consequences.

Mariners are advised to inform the following organizations immediately upon sighting or detecting marine pollution when passing through Pakistani waters:

Director General, Maritime Security Agency

1. Telephone: +92(0)-21-921-4624
+92(0)-21-921-4964
+92(0)-21-921-4965
+92(0)-21-921-4966
+92(0)-21-921-4967
2. Fax +92(0)-21-921-4621
+92(0)-21-921-4625
3. E-mail: mrccpmsa@cyber.net.pk

Director General, Ports and Shipping

1. Telephone: +92(0)-21-920-6405
+92(0)-21-920-6406
+92(0)-21-920-6407
2. Fax +92(0)-21-920-6407

Hydrographer of the Pakistan Navy

1. Telephone: +92(0)-21-4850-6151
+92(0)-21-4850-6152
2. Telex: +82-20774 HDRO PK
3. E-mail: hydrophk@bol.edu.pk

Regulations

International Ship and Port Facility (ISPS) Code

The ISPS Code applies to ships on international voyages and port facilities directly interfacing with these ships. All vessels intending to enter Pakistani territorial waters and ports should fully comply with the provisions of Chapter XI-Part 2 of the SOLAS Convention and Part A of the ISPS Code. Vessels shall demonstrate that appropriate maritime security measures are in place according to ISPS Code regulations. Vessels shall maintain compliance until leaving Pakistani territorial waters.

Pakistan Ship Reporting System (PASREPS)

The Pakistan Ship Reporting System has been established to prevent, reduce, and control marine pollution in Pakistani waters. All vessels over 100 gross tons carrying dangerous and hazardous cargo while transiting the Pakistan Exclusive Economic Zone (EEZ) or calling on any Pakistani port shall report the details of such cargo at least 24 hours prior to entering the Pakistan EEZ or 48 hours prior to entering any Pakistani port.

Dangerous and hazardous cargo to be declared include the following:

1. Goods listed in the IMDG Code
2. Substances listed in Chapter 17 of the International Code for the Construction and Equipment for ships carrying dangerous chemicals in bulk and Chapter 19 of the International Code for the Construction and Equipment for ships carrying liquefied gases in bulk.
3. Oil as defined in Appendix 1 to Annex I of MARPOL 73/78.

4. Noxious liquid substances as defined in Annex II of MARPOL 73/78.

5. Harmful substances as defined in Annex III of MARPOL 73/78.

6. Radioactive materials as specified in the code for the safe carriage of irradiated nuclear fuel, plutonium, and high-level radioactive wastes in flasks onboard ships (INF code).

The report of dangerous and hazardous cargo shall be made, in the format given in the accompanying table, to the following offices:

1. Director General Maritime Security Agency
KDLB Building, West Wharf Road
P.O. Box 13333, Karachi
Telephone: +92(0)-21-921-4624
+92(0)-21-921-4964
+92(0)-21-921-4965
+92(0)-21-921-4966
+92(0)-21-921-4967
Fax: +92(0)-21-921-4621
+92(0)-21-921-4625
E-mail: mrccpmsa@cyber.net.pk
2. Director General (P and S)
Ministry of Ports and Shipping
Plot No. 12, Miscellaneous Area
Mai Kolachi Bypass
Near Kesc Grid, Karachi
Telephone: +92(0)-21-920-6405
+92(0)-21-920-4196
Fax: +92(0)-21-920-6407
3. Hydrographer of the Pakistan Navy
Hydrographic Department
11 Liaquat Barracks, Karachi
Telex: +82-20774
Telephone: +92(0)-21-4850-6151
+92(0)-21-4850-6152
Fax: +92(0)-21-920-1623
E-mail: hydrophk@bol.edu.pk

Designator	Meaning
A	Name of ship
B	Port of registry
C	IMO number
D	Port of departure
E	Next port-of-call
F	Type of packages (e.g.: steel drums, boxes, freight containers)

Designator	Meaning
G	Portable tanks
H	U.N. number
I	Quantity and weight
J	Details of arms and ammunition being carried on board
K	Correct technical name of goods

Mariners are advised to strictly comply with the requirements of PASREPS. Vessels transiting the Pakistan EEZ are liable for investigation by the Pakistani Navy and Maritime Security Agency vessels. Vessels found polluting the marine environment shall be prosecuted in accordance with the law and shall be responsible for all consequences.

Search and Rescue

The Ports and Shipping Wing of the Ministry of Communications is responsible for coordinating search and rescue operations. The Maritime Rescue Coordination Center (MRCC) Pakistan can be contacted by e-mail, as follows:

mrccpmsa@cyber.net.pk

Karachi Coast Radio Station (ASK) maintains a continuous listening watch on international distress frequencies.

Rescue craft are stationed in Karachi.

Signals

Harbor Signals

Should it become necessary to control the movement of ships into and within ports in Pakistan, the signals described below will be displayed from a conspicuous position in or near the port approaches and/or from any Examination or Traffic Control Vessel operating in the approaches to the port, as follows:

1. Entry to port prohibited:
 - Day signal—Three red balls, vertically disposed.
 - Night signal—Three fixed red lights, vertically disposed.
2. Entry to port permitted:
 - Night signal—Three fixed green lights, vertically disposed.
3. Movement or anchorage within port prohibited:
 - Day signal—Blue flag.
 - Night signal—A fixed green light between two fixed red lights, vertically disposed.

Storm Signals

The General System or the Brief System of storm signals may be used in Pakistani ports. For further information, see India—Signals—Storm Signals.

Submarine Operating Areas

Areas

A submarine exercise area extends all along the Makran coast, W and SW of Ras Muari (Cape Monze), and is bound by lines joining the following positions:

- a. 25°08'N, 66°30'E.
- b. 24°58'N, 66°30'E.
- c. 24°43'N, 66°42'E.
- d. 24°43'N, 66°56'E.
- e. 24°15'N, 67°05'E.
- f. 23°10'N, 67°05'E.
- g. 23°10'N, 62°10'E.
- h. 25°08'N, 62°10'E.

Warning Signals

Pakistani submarines may be encountered by day or at night while operating in any of the waters off the Pakistani coast. They may be encountered on the surface at night, particularly in the vicinity of Karachi. Under certain circumstances, warnings that submarines are exercising in specified areas may be broadcast by the local coastal radio stations.

Pakistan escort vessels fly the International Code Group "NE2" to denote that submarines, which may be submerged or surfaced, are exercising in the vicinity. Vessels are cautioned to give a wide berth to any vessel flying this signal.

It must not be inferred from the above that submarines exercise only when in the company of escorting vessels.

A submarine submerged at a depth too great to show the periscope may sometimes indicate its position by releasing a "smoke candle" that gives off a considerable volume of smoke on first reaching the surface.

Submarines may sometimes also indicate their positions by towing on the surface close astern a red-and-white or red-and-yellow float.

The following signals are used by submerged Pakistani submarines in exercise areas to indicate their positions:

1. Red pyrotechnic flares, which may be accompanied by smoke candles, repeated as often as possible indicate that vessels should clear the area immediately as the submarine is carrying out emergency surfacing procedure. Vessels must not stop their propellers and should standby to render assistance.
2. White smoke candles (with flame), yellow smoke candles, or yellow and green pyrotechnic flares indicate the position of the submarine in response to a request from a ship or aircraft.
3. Two yellow pyrotechnic flares or two white or two yellow smoke candles released singly about 3 minutes apart indicate that the submarine is preparing to surface. Vessels must not stop their propellers and should keep clear.

If the red pyrotechnic flare signal is sighted and the submarine does not surface within 5 minutes, it should be assumed that the submarine is in distress and has sunk. An immediate attempt should be made to fix the position in which the signal was sighted.

Navigation Lights

The masthead and side lights of Pakistani submarines are placed well forward and very low over the water in proportion to the length and tonnage of these vessels. In particular, the

masthead light may be lower than the side lights. The overtaking light (stern light) is placed very low indeed and may at times be partially obscured by spray and wash. These lights may also be invariably lower than the side lights.

The overall arrangement of the submarine's lights is therefore unusual and may well give the impression of a markedly smaller and shorter vessel. The vulnerability of submarines to collision when proceeding on the surface dictates particular caution when approaching such vessels.

While at anchor or moored to a buoy at night, Pakistani submarines exhibit normal anchor lights. In some submarines, the aft anchor light is mounted on the upper rudder, which is some distance astern of the hull's surface waterline. Care must be taken to pass well clear astern of the submarine as the propeller is placed aft of the rudder.

Pakistani submarines are also fitted with an all-round yellow quick flashing light. It is usually situated higher than the masthead light and shows about 120 flashes per minute. This light is used as an aid to identification in narrow waters, in areas of dense traffic, and in close quarters situations. Showing of the light is intended for indicating to an approaching vessel the need for added caution rather than immediate identification of the vessel exhibiting the light.

Sunken Submarine

A submarine which has bottomed and is unable to surface will try to indicate its position by the following methods:

1. On the approach of surface vessels and at regular intervals by firing candles giving off yellow or white smoke. As far as possible yellow candles will be used by day.
2. Pumping out fuel or lubricating oil.
3. Blowing out air.

In some circumstances it may be impossible for a submarine to fire smoke candles. Correspondingly, a partially-flooded submarine may have only a certain number of smoke candles available and searching ships should not therefore expect many to appear.

Since oil slicks or debris may be the only indication of the presence or whereabouts of the sunken submarine, it is vitally important that surface ships refrain from discharging anything that might appear to have come from a submarine while they are in the probability area.

Searching ships and aircraft can waste many valuable hours investigating these false contacts.

At any time after a submarine accident, survivors may start attempting to escape. Current policy dictates that survivors will wait before escaping until rescue vessels are known to be standing by or conditions inside the submarine deteriorate to such an extent that an escape attempt must be made. It should be noted that, in certain circumstances, the latter situation may not arise through lack of air supply until several days after the accident. However, if the submarine is badly damaged, survivors may have to make an escape attempt immediately. On arrival at the surface, crew members may be exhausted or ill, and, if circumstances permit, the presence of a boat already lowered is very desirable. Some crew members may require a recompression chamber. Therefore, it is the aim of the authorities to get such a chamber to the scene as soon as possible.

In order that those trapped in the submarine shall be made aware that help is at hand, naval vessels drop small charges into the sea which can be heard from inside the submarine. There is

no objection to the use of small charges for this purpose, but it is vital that they are not dropped too close since crew members in the process of making ascents are particularly vulnerable to underwater explosions, and may easily receive fatal injuries.

A distance of about 0.3 mile is considered to be safe. If no small charges are available, the running of an echo sounder or the banging of the outer skin of the ship's hull with a hammer from a position below the waterline are likely to be heard in the submarine, and such banging and/or sounding should therefore be carried out at frequent intervals.

Submarine Indicator Buoy

The buoy, which floats on the surface, is semi-spherical in shape, about 43cm in diameter, and painted fluorescent orange. It carries a sign giving the name of the Pakistani submarine.

A light, which flashes twice every second, is mounted on the center of the top surface. This light has an endurance of about 60 hours.

The buoy is equipped with a radio transmitter operating at 243 MHz. The radio transmits a shrill noise at 1 second intervals, with a tone rising from 300 hz to 3,000 hz. The transmitter has an endurance of about 76 hours and a range of about 100 miles.

The buoy is also equipped with a radar responder on 9310 MHz if queried from 8500 MHz to 9600 MHz. The radar re-

sponder has an endurance of about 50 hours and a range of about 85 miles.

Vessels finding this buoy should not secure to or touch it. The Pakistani Navy or local police should be notified immediately.

Time Zone

The Time Zone description is ECHO (-5). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at the Diplomatic Enclave, Ramna 5, Islamabad.

The mailing addresses are, as follows:

1. Pakistan address—
P.O. Box 1048
Unit 62200
Islamabad
2. U.S. address—
APO AE 09812-2200

<p>U. S. Embassy Pakistan Home Page http://islamabad.usembassy.gov</p>
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Government



Flag of Paraguay

General

Paraguay, located in the central part of South America, is bounded on the E and NE by Brazil; on the SE, S, and SW by Argentina; and on the NW by Bolivia.

The Chaco Boreal region, located W of the Rio Paraguay, is a uniformly flat area with swampy lowlands near the river. In other parts, it is covered with either dense jungle growth, isolated forests, or thorny scrub. Grassy plains and wooded hills are located in an area to the E of the river.

The climate is mostly tropical with an abundant rainfall. There is only a short dry season, from July to September, when temperatures are lowest. The far W part of the country is semi-arid.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the guarani, consisting of 100 centimos.

Paraguay is a constitutional republic. The country is divided into 17 departments and the capital.

Paraguay is governed by a directly-elected President serving a 5-year term. The bicameral Congress consists of an 80-member directly-elected Chamber of Deputies and a 45-member directly-elected Chamber of Senator; members of both chambers of Congress serve 5-year terms.

The legal system is based on Argentine codes, Roman law, and French codes.

The capital is Asuncion.

Holidays

The following holidays are observed:

January 1	New Year's Day
Holy Thursday	Variable
Good Friday	Variable

May 1	Labor Day
May 15	Independence Day
June 12	Chaco Armistice Day
August 15	Founding of Asuncion
September 29	Victory at Boqueron
December 8	Our Lady of Caacupe
December 25	Christmas Day

Industries

The major industries are livestock raising and forestry. Other industries are meat packing, oil seed crushing, textiles, sawmills, cement, tanneries, cigarettes, tourism, and the production of vegetable oils and light consumer goods.

The principal crops include cotton, maize, tobacco, soy beans, rice, coffee, sugarcane, cassava, and tea.

Languages

Spanish is the official language. Guarani, a native Indian language, is widely spoken.

Time Zone

The Time Zone description is QUEBEC (+4). Daylight Savings Time (PAPA (+3)) is maintained from the third Sunday in October until the Saturday before the second Sunday in March of the following year.

U.S. Embassy

The U.S. Embassy is situated at 1776 Avenida Mariscal Lopez, Asuncion.

The mailing addresses are, as follows:

1. Paraguay address—
Casilla Postal 402
Asuncion
2. U. S. address—
Unit 4711
APO AA 34036-0001

<p>U. S. Embassy Paraguay Home Page http://asuncion.usembassy.gov</p>
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General

Qatar occupies the main peninsula projecting N into the Persian Gulf from the Saudi Arabian mainland. Qatar has a dispute with Bahrain concerning territorial claims over the Hawar Islands.

The country is mainly flat, barren, and covered with loose sand and gravel.

The climate is hot and humid. There is very little rainfall, vegetation is sparse, and temperatures are very high.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Qatari riyal, consisting of 100 dirhams.

Government

Qatar is a traditional monarchy. The country is divided into ten municipalities.

Qatar is ruled by an Amir, who is also the Prime Minister, and a Council of Ministers, appointed by the Amir. There is no parliament, but the Council of Ministers is assisted by a 35-member nominated Advisory Council.

The legal system consists of a discretionary form of law controlled by the Amir. Civil codes are being introduced. Islamic law is significant in personal matters.

The capital is Doha (Ad Dawhah).



Flag of Qatar

Holidays

The following holiday is observed:

September 3	Independence Day
-------------	------------------

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Crude oil production, refining, and natural gas development are the major industries. Other industries include petrochemicals, fertilizers, steel, cement, and fishing.

There is little agriculture; however, fruits and vegetables are grown, and livestock are raised.

Languages

Arabic is the official language. English is also commonly used.

Mined Areas

Vessels are advised that mined areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150 5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Qatar are, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone *	—
Continental Shelf	No specified limits.

* Extends to median line with neighboring states.

Regulations

Liquor is not allowed ashore and it is a serious offense to offer alcoholic beverages to a Qatari.

Smoking is not permitted in public places during Ramadan.

Search and Rescue

The Department of Customs and Ports General Authorities is responsible for coordinating search and rescue operations.

Doha Coast Radio Station (A7D) maintains a continuous listening watch for distress traffic on 500 kHz, 2182 kHz, and VHF channel 16.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated in the Al-Luqta District at 22 February Road, Doha.

The mailing address is P.O. Box 2399, Doha.

<p>U. S. Embassy Qatar Home Page http://qatar.usembassy.gov</p>



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General

Reunion (formerly Ile Bourbon) lies about 360 miles E of Madagascar and is a dependent territory of France (an Overseas Department of France). The island has an area of 968 square miles.

Mayotte (Ile Mayotte), the easternmost island of the Comoros, is a Territorial Collectivity of France. After referendums in 1976, the island rejected inclusion into the Comoros. The island is attached for administrative purposes to Reunion.

Iles Eparses, consisting of Ile Tromelin (15°53'S., 54°31'E.), Iles Glorieuses (11°33'S., 47°18'E.), Ile Juan de Nova (17°03'S., 42°43'E.), Ile Europa (22°20'S., 40°21'E.), and Bassas da India (21°27'S., 55°27'E.), are all administratively attached to Reunion, but have no permanent inhabitants.

The terrain is mostly rugged and mountainous, with fertile lowlands near the coasts. The island is composed of volcanic formations. Piton des Neiges, 3,069m high, is the summit.

Piton de la Fournaise rises in the SE part of the island and is an active volcano.

The climate is tropical, being moderated by the high elevations. It is usually cool and dry from May to November, and wet and rainy from November to April. However, the Northeast Monsoon sometimes brings heavy rains to the E side of the island from October to April.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Rollers, long swell waves created by distant storms, affect Reunion. This phenomenon occasionally lasts 4 to 5 days, frequently causing great damage and suspending all activities, though rarely for longer than 24 hours. During cyclone season, rollers may provide a good indication of a developing or approaching storm.

Currency

The official unit of currency is the Euro.

Firing Areas

A firing area, identified as FM-D50, is bounded by lines joining the following positions:

- 21 12.0'S, 54 57.0'E.
- 21 26.0'S, 55 02.5'E.
- 21 31.2'S, 54 47.4'E.
- 21 17.2'S, 54 42.0'E.

Government



Flag of Reunion

Reunion is an Overseas Department of France.

Reunion elects three representatives to the French Senate and five deputies to the French National Assembly. Locally, the island is governed by a 49-member directly-elected General Council, whose members serve 6-year terms, and a 45-member directly-elected Regional Council, whose members serve 6-year terms.

The legal system is based on French civil law.

The capital is Saint-Denis.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Monday	Variable
Easter Monday	Variable
May 1	Labor Day
May 8	Victory Day (1945)
Ascension Day	Variable
Whitsunday	Variable
Whitmonday	Variable
July 14	Bastille Day
August 15	Assumption Day
November 1	All Saints' Day
November 11	Victory Day (1918)
December 20	Slavery Abolition Day
December 25	Christmas Day

Industries

The chief agricultural products are sugar, tropical fruits and vegetables, vanilla, perfume essences, corn, tobacco, potatoes, and maize.

The main industries include sugar processing, rum distilling, cigarettes, canning, fishing, livestock raising, textiles, leather, handicrafts, and tourism.

Languages

French is the official language, but Creole is also widely used.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

As a dependent territory of France, the maritime territorial claims of Reunion are identical to the maritime territorial claims of France, as follows:

Territorial Sea	12 miles.
Contiguous Zone	24 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

Maritime Disputes

Ile Tromelin is claimed by Mauritius.

Iles Glorieuses, Ile Juan de Nova, Ile Europa, and Bassas da India are claimed by Madagascar.

Regulations

Single-Hull Tankers

Single-hull tankers carrying heavy petroleum products are not permitted to enter, leave, or anchor in Reunion, Mayotte, and Iles Esparses.

Reporting System (SURNV)

Vessels bound to and from Reunion, Mayotte, and Iles Esparses are all subject to the reporting requirements of SURNV.

The SURNV system is intended to prevent accidental pollution in French territorial waters of the South Indian Ocean, hereafter known as the Area, and the waters within 50 miles of the coast of the Area. The Area includes the following:

1. Reunion, including Mayotte and Iles Esparses.
2. The Crozet Islands.
3. Amsterdam Island.
4. Saint-Paul Island.
5. The Kerguelen Islands.

Covered Vessels.—The regulations are mandatory for the following vessels:

1. Vessels carrying hydrocarbons or the gaseous residues of hydrocarbons as specified in Annex 1 of MARPOL 73.
2. Non-inert tankers and vessels carrying the following:
 - a. Noxious liquid substances as specified in Annex 2 of MARPOL 73 and classed in Category A and Category B in Chapter 17 of the IBC Code.
 - b. Liquefied gas in bulk.
 - c. Plutonium-239, Uranium-233, Uranium-235, Uranium-238, Thorium, or any material containing them with the exception of ores.

d. Acetaldehyde (UN 1089), ether ethyl (UN 1155), ethylvinyl ether (UN 1302), monoethylamine (UN 1036), ammonium nitrate (UN 0222), or propylene oxide (UN 1280).

e. Composite organochlorides, such as organochloride pesticides (UN 2761, UN 2762, UN 2995, and UN 2996).

3. Vessels carrying the following:

a. Noxious liquid substances as specified in Annex 2 of MARPOL 73 and not listed above.

b. Harmful liquid substances as specified in Annex 3 of MARPOL 73.

c. Dangerous cargo as specified in the International Maritime Code of Dangerous Goods (IMDG), including radioactive materials specified in the INF Code.

d. Dangerous cargo as specified in Chapter 17 of the IBC Code and Chapter 19 of the IGC Code.

SURNAV-FRANCE Messages.—All vessels listed in paragraph 1 and paragraph 2 of **Covered Vessels** preparing to pass through of stay in the territorial waters of the Area must contact CROSSRU 6 hours prior to entering the territorial waters of the Area or 4 hours prior to departing from a port or anchorage in the Area.

SURNAV messages should be addressed to SURNAV CROSSRU and headed RAPPORT SURNAV—CIRCULATION EAUX TERRITORIALES/SIGNALEMENT CARGAISON TRANSPORTEE by telephone, facsimile, telex, e-mail, or INMARSAT-C.. Messages should be sent in the format given in the table below and should also include the following additional information:

1. Intended movements within territorial waters.
2. Current ability to maneuver and navigate.

SURNAV-FRANCE Message	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
HOTEL	1. Date, time UT (GMT), and position of entering territorial waters. 2. Date, time UT (GMT), and place of getting underway.
INDIA	Destination and ETA.
KILO	1. Date, time UT (GMT), and position of leaving territorial waters. 2. Date and time UT (GMT), of arrival at destination (port, anchorage, waiting position, deballasting position) within territorial waters.
LIMA	Intentions.
MIKE	Radio watch maintained.

SURNAV-FRANCE Message	
Designator	Information required
OSCAR	Draft.
PAPA *	Cargo—type (as defined by MARPOL 73) and quantity.
QUEBEC	Any defects, damage, faults, or restrictions.
SIERRA	Weather conditions in the area.
TANGO	Notification to authorities relating to dangerous cargo on board.
UNIFORM	Type of vessel, loa, and draft.
WHISKEY	Number of people on board.
XRAY	Other remarks.
ZULU	End of message.
* Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Any subsequent changes to the above information should be reported immediately.

Incident/Accident Report.—Vessels of 300 gross tons and over on a commercial voyage and navigating with the limits of the Economic Zone, or when outside the limits of the zone but less than 50 miles from the coast must immediately report the following:

1. Every incident or accident affecting the safety of the vessel (collision, stranding, damage, breakdown or failure, invasion or movement of cargo, or all defects within the hull or damage to the structure).
2. Every incident or accident affecting the safety of navigation (damage likely to affect the vessel's maneuverability or navigation, or every defect affecting the propulsion systems, steering gear, the production of power, or the navigation or communication equipment).
3. Every situation likely to lead to pollution (discharge or risk of discharge of pollutants into the sea).
4. Every slick of pollution and every drifting container seen in the sea.

Messages should be addressed to CROSSRU, prefixed SURNAV-AVIERES, in the format given below.

Incident/Accident Report	
Designator	Information required
ALFA	Vessel's name, call sign, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position.
ECHO	Course.
FOXTROT	Speed.
GOLF	Last port of call.
INDIA	Destination and ETA.
MIKE	Radio watch maintained.

Incident/Accident Report	
Designator	Information required
OSCAR	Draft.
PAPA *	Cargo and details of dangerous or pollutant cargo on board.
QUEBEC *	Nature of incident or situation, with damage or problem suffered.
ROMEO *	Description of the pollution caused and of all containers, parcels, or cargo lost overboard or observed drifting and presenting a danger to navigation and/or the environment.
SIERRA	Weather conditions.
TANGO	Owner's details, charter company, and possible consignees in France.
UNIFORM	Vessel type.
WHISKEY	Number of people on board.
XRAY *	Date and time (UT/GMT) of possible call for assistance or towing, possible presence and name of assisting vessel, time (UT/GMT) of contacting a possible assisting vessel, or other information.
YANKEE	Request transmission of report to another system (AMVER, AUSREP, JASREP, MAREP, etc.).
ZULU	End of message.
* Vessels should refer to IMO Resolution A.851(20) in order to correctly give the information requested.	

Assisting Vessel Report.—Vessels providing assistance to vessels of 300 gross tons and over less than 50 miles from the coast must immediately contact CROSSRU with a message prefixed SURNAV-AVIERES, with the following information:

Assisting Vessel Report	
Designator	Information required
ALFA	Vessel's name, call sign, MMSI number, and flag.
BRAVO	Date and time UT (GMT), suffixed ZULU (6 figures DD/HH/MM).
CHARLIE	Position of assisting vessel.
ECHO	Course of assisting vessel.
FOXTROT	Speed of assisting vessel.

Assisting Vessel Report	
Designator	Information required
INDIA	Destination and ETA.
MIKE	Available means of communication.
OSCAR	Draft.
PAPA	Cargo of vessel being assisted.
QUEBEC	Damage sustained to vessel being assisted, if known.
TANGO	Owner's details, charter company, and possible consignees of assisting vessel in France.
UNIFORM	Type of assisting vessel.
WHISKEY	Number of people on board.
XRAY	Date and time (UT/GMT), position, weather, name, call sign, flag of vessel, course and speed of vessel involved in the accident, or other information.
YANKEE	Request transmission of report to another system (AMVER, AUSREP, JASREP, MAREP, etc.).
ZULU	End of message.

Listening watch—Vessels must maintain a continuous listening watch, except when alongside, on 2182 kHz, VHF channel 16, and any other frequency they are advised to listen on.

Search and Rescue

The Centre Operational de Sauvetage en Mer de la Reunion (COSRU) at the Maritime Rescue Coordination Center (MRCC) Reunion maintains a continuous listening watch on VHF channel 16, 2182 kHz, and 8291 kHz for distress traffic. MRCC Reunion can also be contacted by e-mail, as follows:

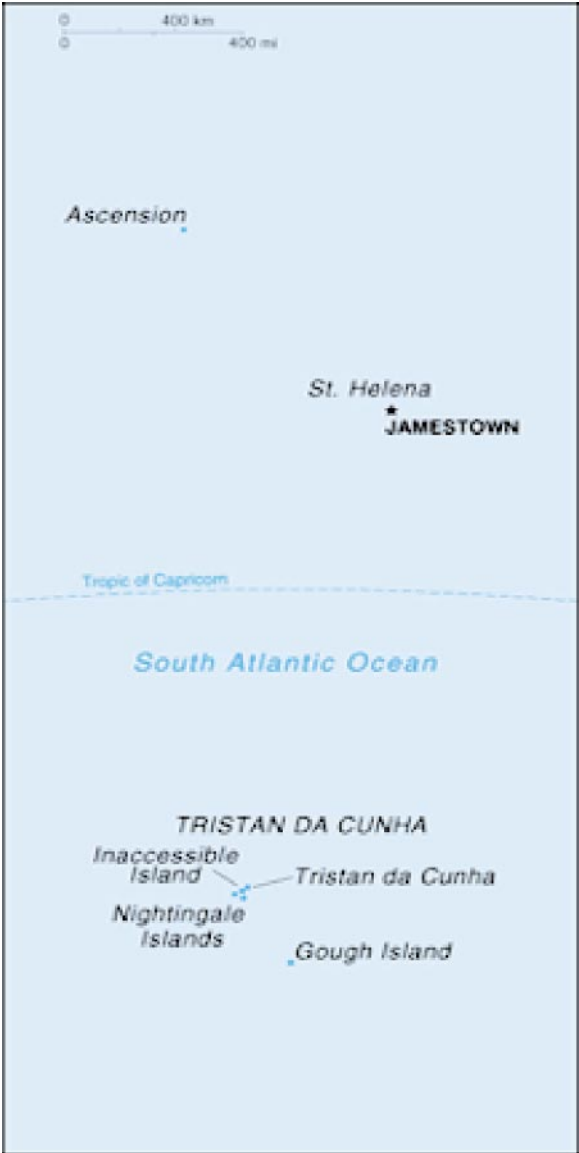
crossru@equipement.gouv.fr
crossru@wanadoo.fr

Time Zone

The Time Zone description is DELTA (-4). Daylight Savings Time is not observed.

U.S. Embassy

Reunion is an Overseas Department of France. There is no diplomatic representation..



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General

Saint Helena
Saint Helena (15°56'S., 5°42'W.), 1,200 miles off the coast of West Africa, is a dependency of the United Kingdom.

The island is of volcanic origin and has an area of 47 square miles. From a distance, it resembles a high pyramidal-shaped fortress rising abruptly from the sea. A line of precipitous and almost inaccessible cliffs, intersected by chasms, fronts the shores. The island is divided into two unequal parts by a ridge of mountains from 600 to 820m high.

The island, which was the place of exile and first burial site of Napoleon Bonaparte, harbors at least 40 species of plants unknown anywhere else in the world. Numerous small fish, about 15cm long, swim around anchored vessels in large schools. They are known locally as “Black Fish” and eat anything thrown into the water within seconds. The fish will only attack humans if they have an open cut or wound letting blood into the water, but caution should be exercised.

The climate is mild with little variation.

Ascension Island

Ascension Island (7°57'S., 14°22'W.) is of volcanic origin and lies about 700 miles NW of Saint Helena. It has an area of about 34 square miles and most of the surface is barren, rocky, and almost destitute of vegetation. Green Mountain, 857m highest, forms the summit of the island and is surrounded by numerous craggy peaks. The shores are fronted in many places by white sandy beaches; the sand being composed of shell and coral.

The island is noted for sea turtles, feral donkeys, and rabbits.

The island is the location of an important telecommunications center. In addition, the Royal Air Force (RAF) and the United States Air Force (USAF) have small military bases on the island.

Tristan da Cunha Group

Tristan Island (37°06'S., 12°17'W.) is the largest of a group of five islands lying 1,320 miles SW of Saint Helena, about halfway between the Cape of Good Hope and South America. Inaccessible Island, the second largest, lies 18 miles SW of Tristan Island. Nightingale Island, Middle Island, and Stoltenhoff Island lie close together, 17 miles SSW of Tristan Island.

Tristan Island consists of a volcano, 2,060m high, and its coast is fronted by a line of inaccessible cliffs, 300 to 610m high. The settlement of Edinburgh is situated on the largest of the lowland strips, near the NW extremity of the island.

In 1961, the volcano, which was believed to be extinct, erupted unexpectedly. The entire population of the island was evacuated and settled temporarily in the United Kingdom, almost all returning in 1963.

Gough Island

Gough Island (40°19'S., 9°56'W.), a dependency of Saint Helena, lies about 230 miles SSE of Tristan da Cunha. This island, which is about 7 miles long and 4.3 miles wide, is of volcanic origin and wooded. Edinburgh Peak, 910m high, is the summit and rises from a central plateau bordered by a series of deep valleys and craggy ridges. The coast of the island is fronted by narrow beaches backed by cliffs, 61 to 457m high. Waterfalls cascade over the cliffs in numerous places.

A meteorological and scientific station, manned by South African personnel, is situated on the island and may be contacted by VHF.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Saint Helenian pound.

Government

Saint Helena is an overseas territory of the United Kingdom. The country consists of one administrative area and two dependencies.



Flag of Saint Helena

Elizabeth II, recognized as the Chief of State, appoints a Governor. The unicameral Legislative Council consists of the Governor, six ex-officio members, and 12 directly-elected members serving 4-year terms.

The capital is Jamestown.

Ascension Island is a dependency of Saint Helena; an Administrator resides at Georgetown, the main settlement.

The Tristan da Cunha Group is a dependency of Saint Helena and is managed by an Administrator and an Island Council.

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Monday	Variable
May 1	May Day
Whitmonday	Variable
December 25	Christmas Day
December 26	Boxing Day

Industries

The major industries include fishing, coffee, and handicrafts.

Languages

English is the official language.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of St. Helena, including its dependencies of Ascension Island, Tristan da Cunha Group, and Gough Island, are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.

Regulations

Visitors are not allowed to land on Ascension Island without permission of the Administrator of Ascension Island.

Gough Island has been declared a nature reserve and visitors are not allowed without permission of the Administrator of Tristan da Cunha.

Search and Rescue

Saint Helena Coast Radio Station (ZHH) can offer assistance for distress traffic, but does not maintain continuous listening watches on any international distress frequencies.

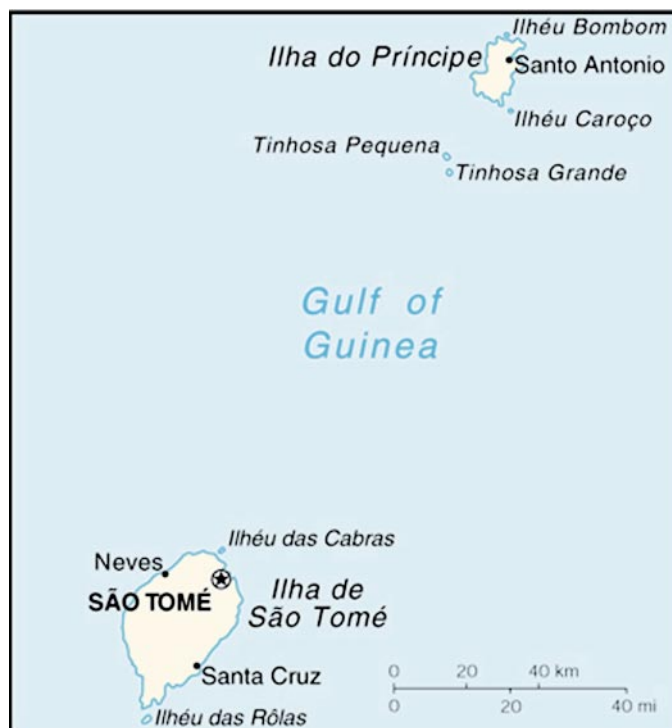
Ascension Island Coast Radio Station (ZBI), with a range of about 200 miles, maintains a continuous listening watch on 2182 kHz and will relay relevant messages by request.

Time Zone

The Time Zone description for is ZULU (GMT). Daylight Savings Time is not observed.

U.S. Embassy

Saint Helena is a dependent territory of the United Kingdom. There is no diplomatic representation.



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General

The two islands of Sao Tome and Principe are located in the Gulf of Guinea. They lie 275 miles and 125 miles, respectively, off the N coast of Gabon and combine to form one of Africa's smallest countries. These islands are part of an extinct volcanic mountain range, which also includes the island province of Equatorial Guinea, located to the N, and the towering mass of Mount Cameroon, rising on the W coast of continental Africa. The country also includes the islets of Pedras Tinhosas, lying close off Principe, and Ilheu Gago, lying close off Sao Tome.

Sao Tome, the larger and most mountainous island, is 30 miles long and 20 miles wide. It is oval-shaped, with elevations of up to 2,024m. Principe is 10 miles long and 4 miles wide. Both islands have prominent needle-shaped peaks and are covered by luxuriant vegetation and dense forests.

The climate is tropical, being very hot and humid, but is somewhat modified in the higher elevations. The rainy season normally occurs from October to May.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Aids to Navigation

It is reported that lights and navigational aids on Ilha do Principe and Ilha do Sao Tome are unreliable.

Currency

The official unit of currency is the dobra, consisting of 100 centimos.

Government



Flag of Sao Tome and Principe

Sao Tome and Principe is a republic. The country is divided into the province of Sao Tome and the province of Principe.

Since 1995, Principe has had internal self-rule, with a 5-member regional government and an elected assembly.

Sao Tome and Principe is governed by an directly-elected President who serves a 5-year term. The National Assembly chooses the Prime Minister, with the approval of the President. The President appoints a Council of Ministers. The unicameral National Assembly is composed of 55 directly-elected members serving 5-year terms.

The legal system is based on Portuguese law and customary law.

The capital is Sao Tome.

Holidays

The following holidays are observed:

January 1	New Year's Day
February 3	Martyrs' Day
Easter Holiday	Variable
Ascension Day	Variable
Corpus Christi	Variable
December 25	Christmas Day/Family Day

Industries

The main industries are timber, livestock raising, palm oil processing, soap production, textiles, and fishing.

Crops include coconuts, cocoa, coffee, copra, cassava, yams, and bananas. After independence, all large landholdings were nationalized into 15 state farms. These were partially privatized in 1985 by granting management contracts to foreign companies.

Languages

Portuguese is the official language. Lungwa, a Portuguese creole, and Fang, a Bantu dialect, are also spoken.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Sao Tome and Principe are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.
* Claims archipelagic status.	

Time Zone

The Time Zone description is ZULU. Daylight Savings Time is not observed.

U.S. Embassy

There is no U.S. Embassy; however, the Ambassador to Gabon is accredited to the country on a nonresident basis and makes periodic visits to the islands.

U. S. Embassy Gabon Home Page
<http://usembassy.state.gov/libreville>



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General

Saudi Arabia is located in Southwest Asia and occupies most of the Arabian Peninsula. It is bordered on the N by Jordan, Iraq, and Kuwait; on the W by the Red Sea; and on the S and E by Yemen, Oman, the United Arab Emirates, and the Persian Gulf.

A narrow plain, rising in Al Hijaz and the Asir Highlands, extends along the Red Sea coast and then gradually slopes E as a desert plateau to a low-lying coastal region along the Persian Gulf. The highlands attain heights of up to about 2,750m; the desert plateau is 760 to 1,070m high.

The climate is mostly harsh, dry desert with great extremes of temperature.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the riyal, consisting of 100 halalas.

Government



Flag of Saudi Arabia

Saudi Arabia is a monarchy. The country is divided into 13 provinces.

Saudi Arabia is ruled by a King in consultation with the royal family, a Council of Ministers, and religious leaders. A 120-member Majlis al-Shura (Consultative Council), headed by a chairman, is appointed by the King for a term of 4 years.

The legal system is based on Islamic law. Several secular codes have been introduced. Commercial disputes are handled by special committees.

The official capital is Riyadh. The religious capital is Mecca.

Holidays

The following holiday is observed:

September 24	Unification of the Kingdom
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Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Oil is the principal resource; oil production and oil refining are the principal industries. Other industries include petrochemicals, cement, steel, and fertilizers.

Agricultural products include dates, grains, and livestock.

Languages

Arabic is the official language.

Mined Areas

Vessels are advised that mined areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (1505612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Saudi Arabia are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	18 miles.
Continental Shelf	No specified limit.

* Claims straight baselines. Claims power to regulate nuclear-powered vessels in the territorial sea and to require prior authorization for such vessels.

** Also considered a Security Zone.

Pilotage

Pilotage is compulsory for all vessels of 150 nrt and over, except pleasure craft, entering or navigating within or leaving the pilot zones of Saudi Arabia.

Pollution

Vessels navigating in the Persian Gulf are requested to report any oil flotsam which could affect safe navigation, as follows:

1. Damman Radio.
2. The Meteorological and Environmental Protection Administration (MEPA) Oil Pollution Control Center, Jubail through Damman Radio.

The report should include the following details:

1. Position (latitude/longitude).
2. Length, breadth, and thickness.
3. Color
4. Estimated quantity.
5. Whether liquid or solid.

It is illegal to discharge oil or oily mixtures within 100 miles of the coast of Saudi Arabia.

Regulations

General

The Co-operation Council for the Arab States of the Gulf has issued a set of rules and regulations valid for Saudi Arabian ports. Every vessel entering a port should have a copy or obtain one immediately on arrival. These rules and regulations are extensive and extracts are given below:

1. Guidelines concerning standards of dress and behavior are laid down and strictly enforced.
2. The import of certain articles is strictly prohibited and includes such items as religious matter not pertaining to the Moslem faith; playing cards or other gambling devices; narcotics; printed matter, photographic matter, or video tapes depicting what could be considered pornographic; and alcoholic beverages, including beer, table wines, and liquor.

Any of the above items on board any vessel calling at Saudi ports must be secured in appropriate locked storerooms which will be sealed by the authorities who may carry out inspections to ensure that the seals are intact and that none of the above articles are in use. Penalties for violations are severe and major delays to vessels can be incurred.

Vessels equipped with VHF should contact the Port Control Signal Station as soon as the vessel enters within VHF range.

Vessels more than 15 years old may not discharge cargo at Saudi Arabian ports unless an approved surveyor has established that the vessel complies with all Saudi Arabian standards.

All vessels are required to display the Saudi Arabian flag from the vessels foremast 24 hours when in Saudi Arabian waters.

Notification

The owners of vessels bound for a port within Saudi Arabia with cargo must give preliminary notice of the vessel's intended arrival to the Port Management of the discharge port(s) by telex or cable, either directly or through the vessel's agents, on arrival at the first or sole loading port, before loading commences. Estimated time of arrival and estimated quantity of cargo by type must be given with the preliminary notice.

On completion of loading cargo for Saudi ports, the following information must be sent to the Port Management of the discharge port(s) by telex or cable, either directly or through the vessel's agents:

1. Vessel's name and former names, if any.
2. Flag, port of registry, and call sign.
3. Length overall, grt, nrt, and dwt.
4. Expected draft on arrival.
5. Expected time of arrival.
6. Cargo particulars, including nature, weight, tonnage, and stowage by hatches; car carriers, ro-ro, and container vessels to give both number and weight in tons of each type of unit.
7. Any other cargo being carried for other destinations.
8. If dangerous cargo is being carried, the quantity and class must be indicated in accordance with the IMDG code and it must be stated whether this cargo is to be discharged or is in transit.
9. Number, position, and SWL of derricks and/or cranes, and particulars and positions of ramps.
10. The number and nationalities of passengers to be disembarked or in transit.
11. Expected requirements for bunkers and water.
12. Name of the vessel's agent.
13. Vessels intending to call at Saudi ports must submit to the Port Management a detailed list of arms and ammunition carried on board for the purpose of self-defense, at least 48 hours prior to arrival. Failure to comply with this procedure will result in heavy fines and seizure of the arms by the Saudi authorities.

A further notice of ETA is to be sent 5 days, 2 days, and 1 day prior to arrival at the port.

Tankers must also report the following information:

1. The flashpoint of any cargo to be discharged.
2. If the vessel is in ballast, whether gas-free or not, or whether in an inert condition.

3. Any other relevant information concerning special conditions, difficulties, defective equipment, or defective gear which would create special hazards when mooring, un-mooring, or handling cargo.

Having complied with the above and received the necessary permission to proceed with loading, the vessel's agent must submit to the relevant Port Management full details of all cargo on board, whether to be discharged in Saudi ports or elsewhere.

Any vessel that fails to comply with these procedures, or is found to be carrying weapons, explosives, and ammunition without prior permission will be detained.

The discharge of cargo for transshipment to another port, whether in or outside the waters of Saudi Arabia, is strictly forbidden.

Vessels calling at any commercial port in Saudi Arabia, with cargo destined for non-Saudi ports, must submit manifests declaring the nature of such cargo. Violation of this requirement may lead to the detention of the vessel.

Ship Reporting System

The Saudi Ship Reporting System (SSRS) is a voluntary service for vessels navigating in the Red Sea. Such vessels are requested to report to the SSRS center at Jeddah (HZH). Reports should be sent every 24 hours, either between 0700 and 0730 UT (GMT) or between 1900 and 1930 UT (GMT), and consist of the following format:

Identifier	Content
A	Vessel name, call sign, flag, and cargo.
B	Date and time UT (GMT) of report.
C	Latitude and longitude.
E	Course.
F	Speed.
G	Port of departure (name of last port of call).
I	Port of destination, including latitude and longitude, and ETA.
K	Port of arrival, including latitude and longitude, and time of arrival.
L	Route.
M	Details of frequencies guarded.
V	Medical resources.
X	Remarks.
Y	Remarks.
Z	Crew nationality and number.

Search and Rescue

A network of coast radio stations in the Persian Gulf and the Red Sea maintains a continuous listening watch on international distress frequencies.

Signals

Every vessel approaching the limits of a port must hoist the ship's signal letters (in case of VHF failure), the International code "Q" flag in accordance with health regulations; the International code "B" flag in accordance with the carrying of dangerous goods or hazardous materials, and the national flag of the country to which the ship belongs.

In addition, every vessel entering a port must display the flag of Saudi Arabia from the foremast and keep it flying at all times while the vessel is in port. The Saudi Arabian flag is properly displayed when the writing appears on top and the sword on the bottom.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

The capital and all major port cities keep the Zone Time. It is reported that much of the remainder of the country keeps Islamic sun time or "Arabic Time." (All clocks are set daily to 12 midnight at sunset.)

Traffic Separation Schemes

Traffic Separation Schemes (TSS) in Saudi Arabia are, as follows:

1. **Red Sea**—Approaches to Yanbu. (Royal Commission for Jubail and Yanbu—Kingdom of Saudi Arabia)
2. **Persian Gulf**
 - a. Approaches to Ras Tannurah. (IMO adopted)
 - b. Approaches to Ras al Juaymah. (IMO adopted)
 - c. Approaches to Ras al Khafji. (IMO adopted)
 - d. Between Zuluf Oil Field and Marjan Oil Field. (IMO adopted)

U.S. Embassy

The U.S. Embassy is located on Collector Road M, Diplomatic Quarter, Riyadh.

The mailing addresses are, as follows:

1. Saudi Arabia address—
P.O. Box 94309
Riyadh 11693
2. U.S. address—
Unit 61307
APO AE 09803-1307

U. S. Embassy Saudi Arabia Home Page
<http://riyadh.usembassy.gov>



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General

Seychelles, a group consisting of 115 main islands and islets, lies scattered over the W part of the Indian Ocean, about 600 miles NE of Madagascar. **Mahe Island** (4°37'S., 55°27'E.), the largest of the group, is the site of Victoria, the capital.

The Granitic Islands, 32 in number, are part of the group and lie within about 30 miles of Mahe Island. These islands are mostly hilly, mountainous, and fringed in places by rocks and extensive reefs. Many small coral islands, which are dependencies of Seychelles, lie as far as 600 miles SW and S of Mahe Island. These islands are low and consist of sand cays or raised reefs with no permanent population. Some of the coral islands are waterless and uninhabitable. Aldabra, with a lagoon, is a rare example of a coral atoll largely untouched by man; many of its animal, plant, and insect species exist nowhere else on earth.

The climate is tropical. The hot, wet, and humid season (Northwest Monsoon) lasts from December to May. The cool-

er season of trade winds (Southeast Monsoon) lasts from June to November.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing with traps, hand lines, gill nets, long lines, and purse seine nets, as well as by trolling and trawling, is carried out in the vicinity of all of the islands.

Fishery rafts, which display a red flag, are moored in various locations throughout the group.

Vessels conducting seismic surveys may be encountered on Seychelles Bank and on the banks of Mascaren Plateau SSE of Seychelles Bank.

Currency

The official unit of currency is the Seychelles rupee, consisting of 100 cents.

Government

Seychelles is a republic. The country is divided into 23 administrative districts.

Seychelles is governed by a directly-elected President who serves a 5-year term. The President appoints the Council of Ministers. The unicameral Legislative Assembly consists of 33 members, of which 25 members are directly elected and 9 of

which are appointed based on proportional representation, all serving 5-year terms.

The legal system is based on French civil law, English common law, and traditional practices.

The capital is Victoria.



Flag of Seychelles

Holidays

The following holidays are observed:

January 1	New Year's Day
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
May 1	Labor Day
Corpus Christi	Variable
June 5	Liberation Day
June 29	Independence Day
August 15	Assumption Day
November 1	All Saints' Day
December 8	Immaculate Conception
December 25	Christmas Day

Industries

The major industries include tourism, food processing, vanilla and coconut processing, fishing (tuna), livestock raising, boat building, beverages, and cigarette production.

The main crops include coconuts, copra, cinnamon, vanilla, sweet potatoes, yams, sugar cane, cassava, and fruits.

Languages

English, French, and Creole are the official languages. Creole is spoken by 95 per cent of the population.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Seychelles are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims archipelagic status. Requires advance permission or notification for innocent passage of warships in the territorial sea.

Maritime Boundary Disputes

Claims, along with Mauritius, the Chagos Archipelago, part of the United Kingdom-administered British Indian Ocean Territory.

Regulations

Entry

No vessels may call at any island of the Seychelles group unless permission has first been obtained from the authorities at Mahe.

Areas to be Avoided

An IMO-adopted Area to be Avoided has been established around Assumption Island and Aldabra Island as an environmental protection measure. Vessels over 500 grt carrying oil or hazardous materials should avoid entering this area, the limits of which are indicated on the chart.

Two IMO-adopted Areas to be Avoided have been established within the Seychelles, E and W of Mahe Island, and may best be seen on the chart. Vessels greater than 200 grt should avoid entering the Areas to be Avoided.

Search and Rescue

The Seychelles Coast Guard coordinates search and rescue operations and can be contacted by e-mail, as follows:

seycoast@seychelles.net

The Maritime Rescue Coordination Center (MRCC) Seychelles Coast Guard maintains a continuous listening watch for distress traffic on VHF channel 16. Seychelles Coast Radio Station (S7Q) maintains a continuous listening watch for distress traffic on VHF channel 16, 500 kHz, and 2182 kHz.

Time Zone

The Time Zone description is DELTA (-4). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. does not have an embassy in Seychelles. The U.S. ambassador to Mauritius is accredited to Seychelles.

U. S. Embassy Mauritius Home Page http://mauritius.usembassy.gov



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General

Singapore lies at the S extremity of Asia and is located at the SE end of the Malay Peninsula. It is separated from the Malaysian mainland by the Johore Strait and from Indonesia by the Singapore Strait. The country consists of one large island and about 64 nearby islets.

The terrain consists mostly of lowland, originally swamp and jungle in many areas, with a gentle undulating central plateau.

The climate is tropical, being hot, humid, and rainy. There are no pronounced rainy or dry seasons; thunderstorms occur on 40 per cent of all days, including 67 per cent of all days during April.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Fishing Devices

Fishing stakes and enclosures may be encountered along most of the coastal banks and shores of the Indonesian islands, particularly off the mouths of rivers. These devices are generally found in depths of 5 to 10m, but in some cases may be laid in greater depths. The positions of such devices are only charted when their locations are permanent.

Fish aggregating devices may be encountered at a number of places off the E and W coasts of the Malay Peninsula. These devices are moored in depths of up to 30m and are usually marked by buoys.

Haze

Thick haze often occurs in the vicinity of Singapore, particularly in the early morning and late afternoon. Vessels are advised to send an accurate ETA, as it is difficult to identify ships approaching the pilot boarding stations during such periods. Occasionally, smoke from fires on the nearby islands reduces visibility in the approaches to the port area.

Piracy

It was reported (1995) that vessels have been attacked by armed thieves in the vicinity of the Strait of Malacca and Singapore Strait, mainly near Phillip Channel. These attacks were usually made from fast motor boats approaching from

astern. Loaded vessels with low freeboards seem to be particularly vulnerable.

Vessels with low freeboards transiting the Strait of Malacca and Singapore Strait often use security lights to guard against piracy. These lights by their brilliance may obscure the vessel's navigation lights.

The International Maritime Bureau (IMB) of the International Chamber of Commerce has established a Piracy Countermeasures Center at Kuala Lumpur. This center operates for the Southeast Asian Region and is able to receive reports from vessels concerning attacks and advise of danger areas. Piracy warnings originated by the Center will be broadcast daily to NAVAREA XI, VIII, and X through Enhanced Group Calling using the SafetyNET System.

For further details the IMB Center can be contacted, as follows:

IMB Piracy Reporting Center
ICC International Maritime Bureau
P.O. Box 12559
50782 Kuala Lumpur
Malaysia
Telephone: +60-3-2031-0014
Facsimile: +60-3-2078-5769
Telex: +84-34199 (IMBPCI MA34199)
E-mail: imbkl@icc-ccs.org.uk

IMB Piracy Reporting Center Home Page

http://www.iccwbo.org/ccs/menu_imb_piracy.asp

Sand Waves

Strong tidal currents in Strait of Malacca, arising from the water exchange between the Indian Ocean and the South China Sea, cause large uniform sand waves on the sea bed. The height of these sand waves, which form at right angles to the water flow, can be up to 13m in the One Fathom Bank Traffic Separation Scheme and vary from 4 to 15m elsewhere; the wavelengths of these sand waves range from 250 to 950m.

Surveys in the traffic separation schemes have shown the following areas, which are significant to the safe navigation of deep-draft vessels, to be the most subject to sand waves:

1. Northwest and SSW of Permatang Sedepa (One Fathom Bank) (2°53'N., 101°00'E.).
2. Southwest of Tanjung Tuan (Cape Rachado) (2°24'N., 101°51'E.).
3. South of Muar (2°03'N., 102°34'E.).

In addition, there are also long sand waves running parallel with the tidal currents.

Currency

The official unit of currency is the Singapore dollar, consisting of 100 cents.

Government

Singapore is a republic.

Singapore is governed by a directly-elected President serving a 6-year term. The President appoints the Prime Minister and the Cabinet. The unicameral Parliament consists of 84



Flag of Singapore

directly-elected members serving 5-year terms and, to ensure representation of parties not in the government, ten members who are appointed to 2-year terms.

The legal system is based on English common law.

The capital is Singapore.

Holidays

The following holidays are observed:

January 1	New Year's Day
May 1	Labor Day
August 9	National Day
December 25	Christmas Day

Other religious public holidays, which vary depending on the appearance of the moon, are Chinese New Year, Good Friday, Hari Raya Haji, Vesak, Deepavali, and Hari Raya Puasa.

Industries

Singapore is the principal trading center of Southeast Asia. The major industries include petroleum refining, electronics, shipbuilding and repair, textiles, rubber processing, food and beverage processing, oil drilling equipment, financial services, biotechnology, tourism, poultry, fishing.

The main agricultural crops include vegetables, fruits, copra, tobacco, and rubber. The country is a major exporter of orchids and tropical fish.

Languages

Malay, Mandarin Chinese, Tamil, and English are the official languages. English is used in government and commerce.

Mined Areas

Danger Areas

The following Firing Exercise Areas lie in the S approaches to Singapore:

1. **Southern Islands Live Firing Area.**
 - a. 1°13'49"N, 103°42'25"E.
 - b. 1°12'41"N, 103°42'56"E.

- c. 1°12'09"N, 103°43'10"E.
- d. 1°11'47"N, 103°43'20"E.
- e. 1°11'47"N, 103°44'17"E.
- f. 1°10'32"N, 103°44'58"E.
- g. 1°09'50"N, 103°44'51"E.
- h. 1°09'37"N, 103°44'19"E.
- i. 1°09'37"N, 103°43'45"E.
- j. 1°11'31"N, 103°42'19"E.
- k. 1°12'12"N, 103°40'49"E.

then to a point where it meets an arc having a radius of 6,126.5m, and then gradually NE following the aforesaid arc for a distance of 4,277.1m back to point a.

2. Pulau Sudong Live Firing Area.

- a. 1°12'43"N, 103°42'55"E.
- b. 1°12'53"N, 103°43'26"E.
- c. 1°12'41"N, 103°43'56"E.
- d. 1°12'16"N, 103°44'10"E.
- e. 1°11'47"N, 103°44'19"E.
- f. 1°11'47"N, 103°44'20"E.
- g. 1°12'43"N, 103°42'55"E.

3. Pulau Sudong Maneuvering Area.

- a. 1°12'43"N, 103°42'55"E.
- b. 1°13'30"N, 103°42'34"E.
- c. 1°13'49"N, 103°43'09"E.
- d. 1°13'31"N, 103°43'51"E.
- e. 1°13'28"N, 103°44'10"E.
- f. 1°12'16"N, 103°44'10"E.
- g. 1°12'41"N, 103°43'56"E.
- h. 1°12'53"N, 103°43'26"E.
- i. 1°12'43"N, 103°42'55"E.

For information concerning mine areas in the outer approaches to Singapore, see Indonesia—Danger Areas.

For information concerning firing areas and restricted areas in the outer approaches to Singapore, see Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia.

Navigational Information

Enroute Volume

Pub. 174, Sailing Directions (Enroute) Strait of Malacca and Sumatera.

Maritime Claims

The only maritime territorial claim of Singapore is a territorial sea of 3 miles.

Maritime Boundary Disputes

A dispute with Malaysia over Pedra Blanca (Pulau Batu Putih) (1°20'N., 104°24'E.) will be settled by arbitration.

Regulations

Pre-Arrival Notification of Security (PANS)

The following vessels are required to submit a PANS 24 hours prior to the vessel's arrival at Singapore:

1. Passenger ships, including high-speed passenger ships.

2. Cargo ships, including high-speed craft, of 500 gross tons and over.

3. Mobile offshore drilling units (MODUs).

Vessels coming from a port with less than 24 hours sailing time from Singapore shall notify the Maritime Security Department of the Maritime and Port Authority (MPA) of Singapore immediately upon departure from such a port.

The PANS should be sent to the Maritime Security Department by one of the following methods:

1. Facsimile: 65-6221-3036
2. E-mail: isps@mpa.gov.sg

The following information is required in the PANS:

1. Vessel name.
2. Flag.
3. Call sign.
4. Gross tonnage.
5. Vessel type.
6. Number of crew.
7. ETA
8. Purpose of call.
9. Name of anchorage or port facility bound for
10. Name, telephone number, and facsimile number of agent in Singapore.
11. Does vessel possess a valid International Ship Security Certificate (ISSC)? If yes, give the date of expiry of the ISSC and the issuing authority of the ISSC.
12. Current security level of the vessel.
13. For the last ten ports of call after July 1, 2004, give the port name, arrival date, departure date, and the security level the vessel operated at these ports where it has conducted a ship/port interface.
14. Were any special or additional security measures taken during any ship/port interfaces at the ports listed in No. 13 above? If yes, give the details.
15. Were appropriate security measures taken during any ship/port interfaces at the ports listed in No. 13 above? If yes, give the details.
16. Name and signature of master/owner/agent.
17. Date and time (UTC) of PANS.
18. Present vessel position.

A PANS form can be found on the web site of the Maritime and Port Authority (MPA) of Singapore, as follows:

Maritime and Port Authority (PANS form)

<http://www.mpa.gov.sg/homepage/ms/pc04-15.pdf>

Navigation through the Strait of Malacca and the Strait of Singapore

An IMO-approved Routing System has been established in the Strait of Malacca and Singapore Strait. This system consists of several Traffic Separation Schemes (TSS) and a Deep Water (DW) Route which may best be seen on the chart. The following rules apply to vessels transiting this routing system:

1. For the purpose of these rules, the following definitions apply:
 - a. A vessel having a draft of 15m or more shall be deemed to be a deep-draft vessel.
 - b. A tanker of 150,000 dwt or more shall be deemed to be a Very Large Crude Carrier (VLCC).

The above definitions do not prejudice the definition of "Vessels constrained by their draft" as described in Rule 3 (h) of the 72 COLREGS.

2. The following general provisions apply:

a. Deep-draft vessels and VLCCs shall allow for an underkeel clearance of at least 3.5m at all times during the entire passage through the Strait of Malacca and Singapore Strait and shall also take all necessary safety precautions, especially when navigating through the TSSs.

b. Masters of deep-draft vessels and VLCCs shall have particular regard for navigational constraints when planning their passages through the straits.

c. All deep-draft vessels and VLCCs navigating within the TSSs are recommended to use the pilotage services of the respective countries when they become available. (Indonesia, Malaysia, and Singapore.)

d. Vessels shall take into account the precautionary areas where crossing traffic may be encountered and be in a maximum state of maneuvering readiness in these areas.

3. The following rules apply:

a. **Rule 1**—Eastbound deep-draft vessels shall use the designated deep-water routes.

b. **Rule 2**—Eastbound deep-draft vessels navigating in the deep-water routes in Phillip Channel and Singapore Strait shall as far as practicable, avoid overtaking.

c. **Rule 3**—All vessels navigating within the TSS shall proceed in the appropriate traffic lane in the general direction of traffic flow for that lane and maintain as steady a course as possible, consistent with safe navigation.

d. **Rule 4**—All vessels having defects affecting operational safety shall take appropriate measures to overcome these defects before entering the Strait of Malacca and Singapore Strait.

e. **Rule 5**—In the event of an emergency or breakdown of a vessel in the traffic lane, the vessel shall, as far as practicable and safe, leave the lane by pulling out to the starboard side.

f. **Rule 6**—

(i) Vessels proceeding in the westbound lane of the In the Singapore Strait TSS when approaching Raffles Light shall proceed with caution, taking note of the local warning system, and, in compliance with Rule 18(d) of the International Regulations for Preventing Collisions at Sea, 1972, avoid impeding the safe passage of a vessel constrained by its draft which is exhibiting the signals required in Rule 28 and which is obliged to cross the westbound lane of the scheme in order to approach the SPM facility (in approximate position 1°11.42'N, 103°47.50'E) from Phillip Channel.

(ii) Vessels proceeding in the TSSs when approaching any of the precautionary areas shall proceed with caution, taking note of the local warning system, and, in compliance with Rule 18(d) of the International Regulations for Preventing Collisions at Sea, 1972, avoid impeding the safe passage of a vessel constrained by its draft which is exhibiting the signals required in Rule 28 and which is obliged to cross that precautionary area.

(iii) Information relating to the movement of ships constrained by their draft as referred to in paragraphs (i) and (ii) above will be given by radio broadcasts. The

particulars of such broadcasts are promulgated by Notices to Mariners. All vessels navigating in the area of the TSS should monitor those radio broadcasts and take account of the information received.

g. **Rule 7**—VLCCs and deep-draft vessels navigating in the Strait of Malacca and Singapore Strait shall, as far as it is safe and practicable, proceed at a speed of not more than 12 knots over the ground in the following areas:

(i) At One Fathom Bank TSS.

(ii) Deep-water routes in Phillip Channel and in Singapore Strait.

(iii) Westbound lanes between positions 1°12.51'N, 103°52.25'E and 1°11.59'N, 103°50.21'E and positions 1°11.13'N, 103°49.08'E and 1°08.65'N, 103°44.30'E.

h. **Rule 8**—All vessels navigating in the routing system of the Strait of Malacca and Singapore Strait shall maintain at all times a safe speed consistent with safe navigation, shall proceed with caution, and shall be in a maximum state of maneuvering readiness.

i. **Rule 9**—

(i) Vessels which are fitted with VHF radio communications are to participate in the ship reporting system adopted by the Organization, as follows:

- Vessels 300 gross tons and over.
- Vessels 50m long and over.
- Vessels engaged intowing or pushing with a combined gross tonnage of 300 gross tons or greater or with a combined length of 50m or more.
- Vessels of any tonnage carrying hazardous or potentially polluting cargo in accordance with the definitions in paragraph 1.4 of Resolution MSC 43(64).
- All passenger vessels fitted with VHF, regardless of length or gross tonnage.
- Any category of vessels less than 50m long or less than 300 gross tons which is fitted with VHF and uses, in an emergency to avoid immediate danger, the appropriate traffic lane or separation zone.

(ii) VLCCs and deep-draft vessels navigating in the Strait of Malacca and Singapore Strait are advised to broadcast, 8 hours before entering the TSSs, navigational information giving name, deadweight tonnage, draft, speed, and times of passing One Fathom Bank Light, Raffles Light, and Horsburgh Light. Difficult and unwieldy tows are also advised to broadcast similar information

j. **Rule 10**—All vessels navigating in the Strait of Malacca and Singapore Strait are requested to report by radio to the nearest shore authority any damage to or malfunction of the aids to navigation in the Straits, or any aids out of position in the Straits.

k. **Rule 11**—Flag States, owners, and operators should ensure that their vessels are adequately equipped in accordance with the appropriate international conventions/recommendations.

4. Mariners are warned that local traffic, which could be unaware of the internationally-agreed regulations and practices of seafarers, may be encountered in or near the TSSs. Therefore, mariners should take any precautions which may be required by the ordinary practice of seamen or by the special circumstances of the case.

General

Vessels are advised not to anchor in the Strait of Malacca and Singapore Strait between the landward limit of the Traffic Separation Scheme or precautionary area and the adjacent port limits. Vessels are to anchor only in designated areas.

For details concerning Pilotage Regulations and Rules of Navigation for the Port of Singapore, see Pub. 174, Sailing Directions (Enroute) Strait of Malacca and Sumatera.

Single-hulled Tankers—Pre-arrival Notification

Single-hulled oil tankers of 5,000 dwt and over must submit a pre-arrival notification to the Port Master at least 24 hours prior to arrival. Single-hulled tankers of 5,000 dwt and over sailing from a port less than 24 hours sailing time to Singapore must submit the pre-arrival notification to the Port Master immediately upon departure from that port.

The pre-arrival declaration shall be addressed to the Port Master and shall be transmitted by any of the following means:

1. Telefax: +65-6224-5776
2. Telex: RS34970 (Answer Back PORTPM 34970)

Search and Rescue

The Maritime and Port Authority of Singapore is responsible for coordination search and rescue operations

Singapore Port Operations Control Center (POCC) maintains a continuous listening watch for distress traffic on VHF channels 16 and 70 and can be contacted by e-mail, as follows:

pocc@mpa.gov.sg

Time Zone

The Time Zone description is HOTEL (-8). Daylight Savings Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) in Singapore are, as follows:

1. Port of Singapore Traffic Systems—Sinki Fairway. (Maritime and Port Authority of Singapore)
2. Port of Singapore Traffic Systems—Southern Fairway. (Maritime and Port Authority of Singapore)
3. In Singapore Strait (Main Strait). (IMO adopted)
4. In Singapore Strait off St. John's Island (Pulau Sakijang Bendera). (IMO adopted)
5. In Singapore Strait off Changi and Pulau Batam. (IMO adopted)
6. At Horsburgh Lighthouse Area (IMO adopted)

Information on Traffic Separation Schemes in the Strait of Malacca can be found in Malaysia—Traffic Separation Schemes.

U.S. Embassy

The U.S. Embassy is situated at 27 Napier Road, Singapore. The mailing addresses are, as follows:

1. Singapore address—
27 Napier Road

Singapore 258508

2. U. S. address—
PSC Box 470
FPO AP 96507-0001

U. S. Embassy Singapore Home Page
<http://singapore.usembassy.gov>

Vessel Traffic Service

Reporting System—STRAITREP

STRAITREP is a joint Indonesia-Malaysia-Singapore mandatory ship reporting system in the Strait of Malacca and Singapore Strait. The objectives of the system are, as follows:

1. To enhance the safety of navigation.
2. To protect the marine environment.
3. To facilitate the movement of vessels.
4. To support search and rescue operations and oil pollution response operations.

The following categories of vessels are required to participate in STRAITREP:

1. Vessels of 300 gross tons and over.
2. Vessels 50m long and over.
3. Vessels engaged in towing or pushing with a combined gross tonnage of 300 gross tons and above, or with a combined length of 50m or greater.
4. Vessels of any tonnage carrying hazardous cargo in accordance with the definitions of paragraph 1.4 of Resolution MSC 43(64).
5. All passenger vessels fitted with VHF, regardless of length or gross tonnage.
6. Any category of vessels less than 50m long or less than 300 gross tons which are fitted with VHF and, in an emergency, uses the appropriate traffic lane or separation zone, in order to avoid immediate danger.

The operational area of STRAITREP covers the Strait of Malacca and Singapore Strait between longitude 100°40'E and longitude 104°23'E, as shown in Chartlet 1 and Chartlet 2. This area includes the routing system in the Strait of Malacca and Singapore Strait.

A STRAITREP shall be made to the appropriate VTS authority, as follows:

1. When entering the W limit of the STRAITREP operational area.
2. When entering the E limit of the STRAITREP operational area.
3. When crossing a line joining Tanjung Piai and Pulau Karimun Kecil.
4. When approaching from the S:
 - a. Via Selat Riae—when abeam of Karang Galang Light.
 - b. Via Selat Durian—when abeam of Pulau Jangkat Beacon.
5. When approaching from East Johor Strait—when abeam of Eastern Buoy.
6. When leaving a port or anchorage in the area
7. Prior to joining the traffic lane of the TSS.
8. A ship approaching from a direction other than stated in 1 through 7 above shall, upon reaching Sector 7, 8, or 9,

report by giving the vessel's position as a bearing and distance from one of the following reference points:

- a. Pulau Iyu Kechil Light.
- b. Sultan Shoal Light.
- c. Raffles Light.
- d. Sakijang Lighted Beacon.
- e. Bedok Light.
- f. Tanjung Stapa Light.
- g. Horsburgh Light.

As an alternative, the position may also be given in latitude and longitude.

The format for a STRAITREP is, as follows:

Designator	Information	Remarks
A	Vessel name, call sign, and IMO Number (if available).	
C	Latitude (4 figures with N) and longitude (5 figures with E).	The format in C or D may be used.
D	True bearing (3 figures) and distance in nautical miles from identified landmark.	The format in C or D may be used.
E	Course (3 figures)	When requested by the VTS authority.
F	Speed, in knots and tenths of knots (3 figures).	When requested by the VTS authority.
P	Hazardous cargo on board—indicate YES or NO. If YES, indicate class, if applicable, and information in Q and/or R, as applicable.	
Q	Defects or damage.	
R	Pollution or dangerous cargo lost overboard. Indicate position as in C or D above.	
<p>The following designators contain information essential to meeting the operations of STRAITREP and shall be included in all STRAITREP reports—A, C or D, P, and Q or R.</p> <p>The following designators are required when requested by the VTS authority—E and F.</p>		

A STRAITREP will be based on VHF voice radio communication. The call to the appropriate VTS authority shall be made on the VHF channel assigned to the sector where the ship is located, as follows:

STRAITREP Communications		
Sector	VHF channel	VTS authority
1	66	Klang VTS
2	88	Klang VTS
3	84	Klang VTS
4	61	Klang VTS
5	88	Klang VTS
6	88	Johor VTS
7	73	Singapore VTS
8	14	Singapore VTS
9	10	Singapore VTS

The STRAITREP shall be submitted on that channel or on another available. All reports shall be transmitted in English.

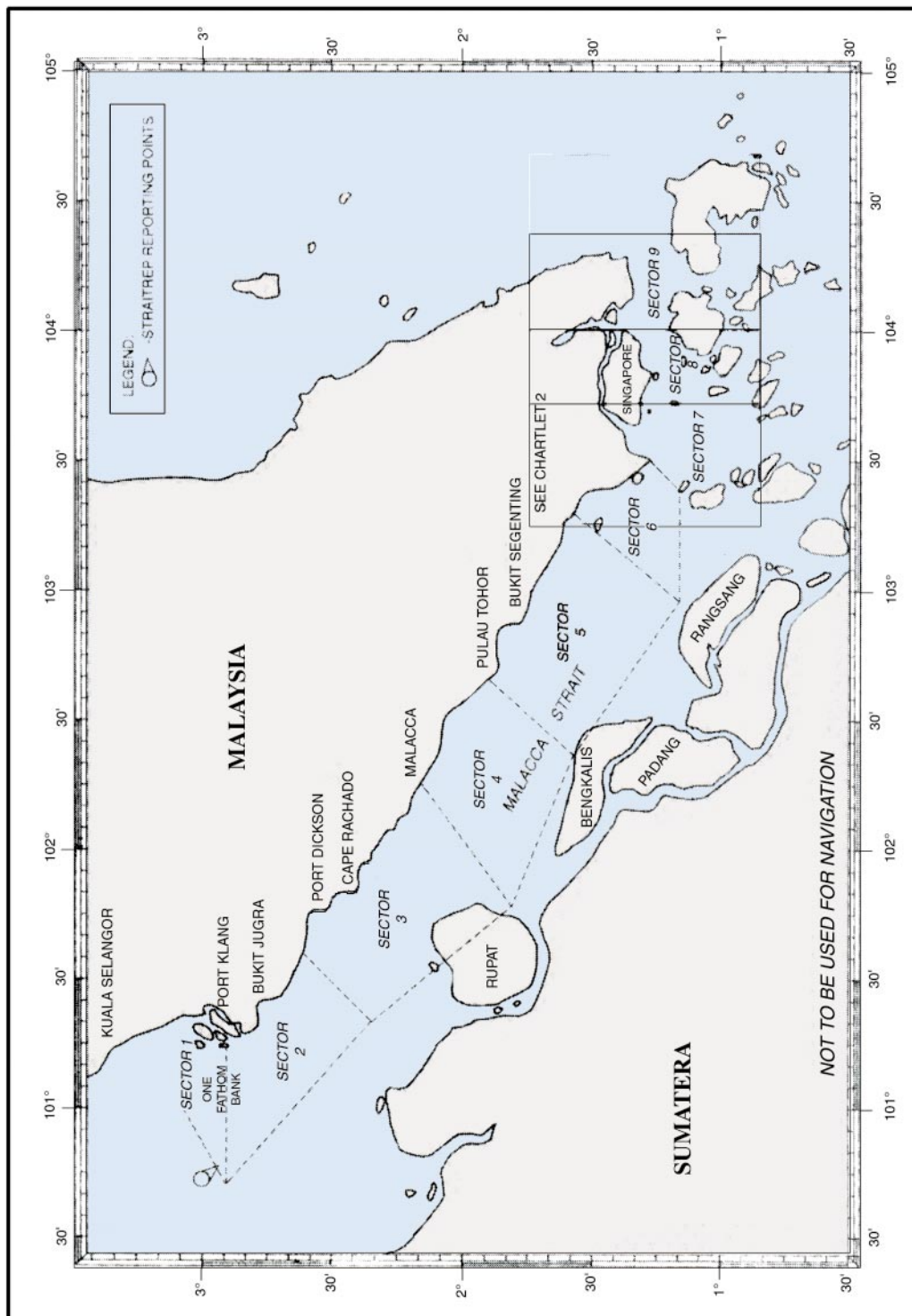
Depending on the sector, every ship shall also maintain a listening watch on the appropriate VHF channel of that sector. Information of general interest to ships will be broadcast on VHF channel 16 and any other channel as may be specified by the appropriate VTS authority. This broadcast will be preceded by an announcement on the appropriate VHF channel assigned to that sector.

STRAITREP also provides information to ships about specific and critical situations which could cause conflicting traffic movements and other information concerning the safety of navigation

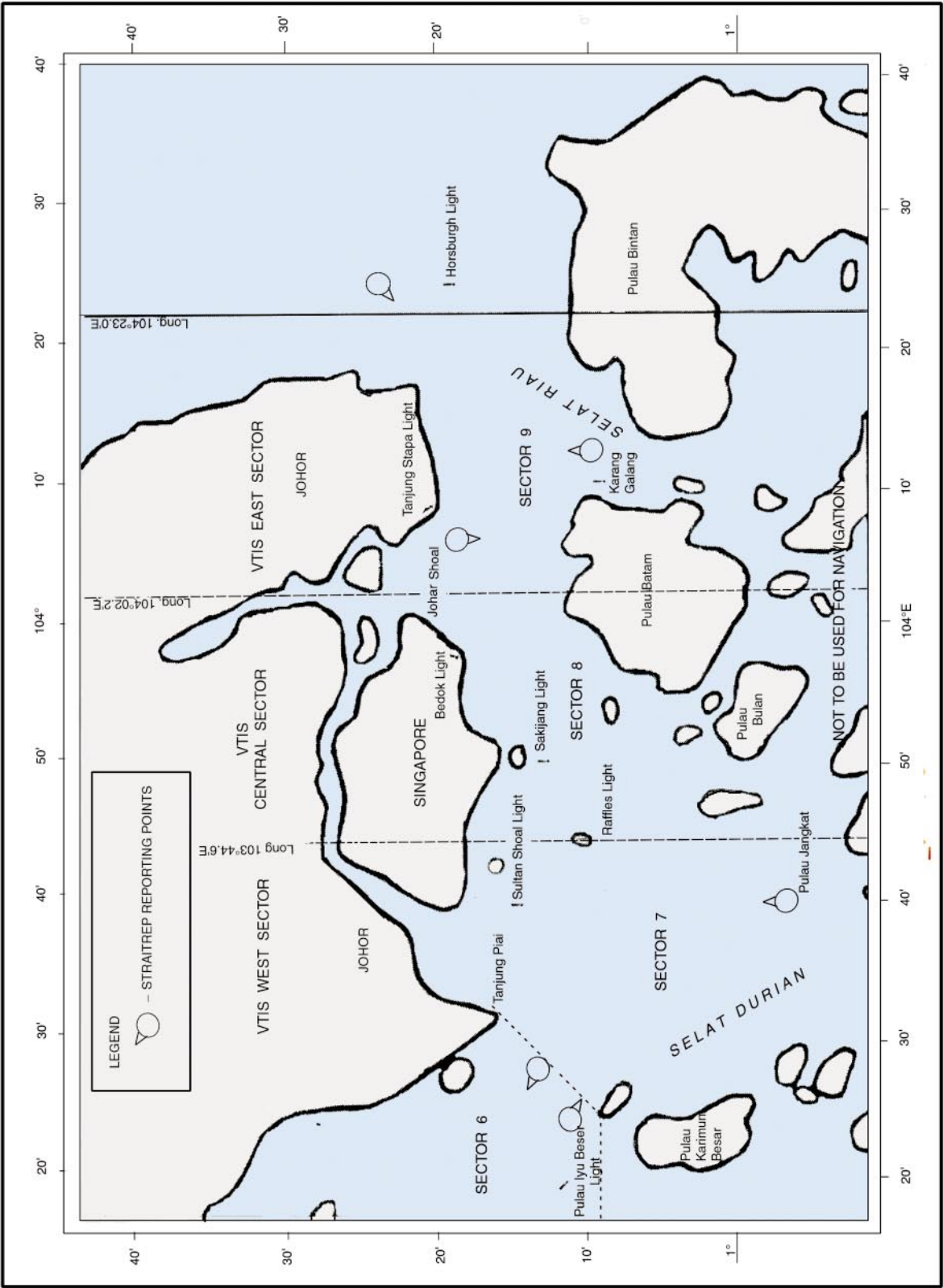
General

For information concerning the Vessel Traffic Information Service System (VTIS) for the Port of Singapore and the inner approaches, see Pub. 174, Sailing Directions (Enroute) Strait of Malacca and Sumatera.

CHARTLET 1



CHARTLET 2





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General

Somalia is located on the E coast of Africa and, with Ethiopia and Djibouti, is often referred to as the Horn of Africa.

The country is bounded on the N by the Gulf of Aden, on the E and S by the Indian Ocean, on the NW by Djibouti, and on the W by Ethiopia and Kenya.

The N part of the country is hilly, with elevations of up to 2,100m, while the central and S parts are flat and low.

The Guiba River and the Scebeli River rise in Ethiopia and flow S across Somalia; however, the latter river does not reach the ocean. Much of the country is arid, although rain is more adequate in the S part.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 123 (Issued 11 November 2005)

1. Due to continuing conditions of armed conflict and lawlessness in Somalia and waters off its coast, mariners are advised to avoid the port of Mogadishu and remain at least 200 nautical miles distant from the Somali coast. The U.S. government does not have an embassy in Somalia and cannot provide services to U.S. citizens.

2. Recent vessel hijackings off the E coast of Somalia demonstrate that pirates are able to conduct sea hijackings from as far S as Kismaayo (Chisimayu) (0°22'S.), though vessels are advised to transit no closer than 2°00'S, to as far N as Eyl (8°00'N.) and out to a distance of 170 miles. The first known attempt to hijack a cruise vessel occurred in November 2005. All merchant vessels transiting the coast of Somalia, no matter how far offshore, should increase anti-piracy precautions and maintain a heightened state of vigilance. Pirates are reported to have used previously-hijacked ships as bases for further attacks.

3. Another reported pirate tactic has been to issue a false distress call to lure a ship closer inshore. Therefore, caution should be taken when responding to distress calls keeping in mind it may be a tactic to lure a vessel into a trap.

4. Victimized vessels have reported two to three (2-3) speedboats measuring six to nine meters (6-9m) in length. Each vessel has a crew of three to six (3-6) armed men with AK-47s and shoulder-launched rockers, which are opening fire on vessels in broad daylight in order to intimidate them into stopping.

5. To date, vessels that increase speed and take evasive maneuvers avoid boarding while those that slow down are boarded, taken to the Somali coastline, and released after suc-

cessful ransom payment, often after protracted negotiations of as much as 11 weeks.

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Piracy

Mariners are advised that acts of piracy and armed robbery by armed boarders are occurring off the coast of Somalia. Several incidents have been reported (2005) by vessels up to 170 miles off the coast.

Pirates apparently have lain in wait for potential victims, primarily waiting along shipping lanes for targets of opportunity. Pirates have previously been concentrated in an area bounded roughly by lines joining the following positions:

- a. 1°00'N, 45°00'E.
- b. 7°30'N, 49°30'E.
- c. 7°30'N, 51°30'E.
- d. 1°00'N, 51°30'E.

These boundaries reflect not only the area in which actual seizures have occurred, but also reflect the area in which known pirate attacks have occurred.

General information on the timing of these attacks, based on 2005 statistics, is given below:

1. Attacks tend to occur in early daylight hours (0400 to 0900 UTC).
2. There have been fewer attacks in late daylight hours (0900 to 1200 UTC).
3. No attacks have been reported at night.
4. Attacks have been heaviest on Sundays, followed by Thursdays and Saturdays. Minimal attacks have occurred on Mondays or Tuesdays, with no reported attacks occurring on Wednesdays or Fridays.

The attacks have typically been carried out by multiple “fast boats” about 3 to 9m long. They typically approach from aft of their victim to maximize surprise in order to come alongside and board before the intended victim can increase its own speed. Although they approach from aft, the final attack has often been from multiple/different directions.

Vessels are advised to keep at least 200 miles from the coast of Somalia. Radio communications, including the use of VHF, should be kept to a minimum while in Somali waters.

Vessels are also cautioned that piracy tactics have included issuing false distress calls to lure a ship closer inshore. Caution should be used when responding to distress calls, as this may be a tactic used to lure a vessel into a trap. Vessels that increase speed and take evasive action are less likely to be boarded than those vessels who slow down.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and

anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Somali shilling, consisting of 100 cents.

Government



Flag of Somalia

Somalia currently (2003) has no functioning government. The present political situation is one of anarchy, marked by interfactional fighting and banditry. The country is divided into 18 regions.

A transitional 245-member National Assembly was created at the Arta Peace Conference in Djibouti in 2000. The National Assembly elected an interim President and was mandated to create a new constitution and hold elections within 3 years.

The legal system is based on Islamic law.

The capital is Mogadishu (Mogadiscio).

Holidays

The following holidays are observed:

January 1	New Year's Day
June 26	Independence Day of Northern Regions
July 1	Independence Day of Southern Regions

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Somalia is mainly a pastoral country. The principal agricultural products are livestock, bananas, sugarcane, cotton, and cereals.

There are a few small industries, including sugar and oil refining, fish and meat canning, textiles, and mining.

Languages

Somali and Arabic are the official languages. English and Italian are also extensively used.

Navigational Information**Enroute Volumes**

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The only maritime territorial claim of Somalia is a territorial sea of 200 miles. It also requires advance permission or notification for innocent passage of warships in the territorial sea.

Search and Rescue

Mogadishu Coast Radio Station (6OR) and Berbera Coast Radio Station (6OY) maintain listening watches for distress traffic on 500 kHz, but these listening watches are not continuous.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy in Mogadishu was closed in 1991. U.S. interests are managed by the U.S. Embassy in Nairobi, Kenya.

<p>U. S. Embassy Kenya Home Page http://usembassy.state.gov/nairobi</p>



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General

South Africa, located at the S extremity of the African continent, is bounded on the N by Namibia, Botswana, and Zimbabwe; on the NE by Mozambique and Swaziland; on the E by the Indian Ocean; and on the S and W by the South Atlantic Ocean.

South Africa has a narrow coastal zone and a vast interior plateau, 915 to 1,830m high, rimmed by rugged hills. The river mouths are unpromising due to the universal presence of large sandbars that block entry for most of the year. The Drakensberg Range, with peaks over 3,000m, rises in the SE part of the country.

The Prince Edward Islands, consisting of Marion Island and Prince Edward Island, were given to South Africa in 1947 by Great Britain and lie isolated in the South Atlantic Ocean, about 1,200 miles SE of Cape Town.

Lesotho, the former British colony of Basutoland, is a land-locked enclave within South Africa.

The climate is abundant with sunshine and relatively low rainfall. The SW part of the country has a Mediterranean climate, with rain mainly in the winter. It is subtropical along the E coast, with sunny days and cool nights.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Marine Mining Vessels

Marine Mining Vessels (MMVs), which process gravel for diamonds, may be encountered in fairly large numbers on the W coast of South Africa close inshore between the Orange River (28°38'S., 16°27'E.) and Cape Columbine (32°50'S., 16°27'E.). The barges are normally moored with a spread of four anchors, which may be marked by unlighted buoys, and display the lights and shapes prescribed in Rule 27 of *The International Regulations for Preventing Collisions at Sea* (1972).

Freak Waves

An area in the Indian Ocean lying between the Cape of Good Hope and Durban has long been regarded as dangerous due to large swells and the occurrence, without warning, of abnor-

mally high freak waves. For further information, see Indian Ocean—Caution—Freak Waves.

Currency

The official unit of currency is the rand, consisting of 100 cents.

Firing Areas

Defense exercises, including firing and bombing practices, take place within a number of areas lying off the coast of South Africa.

The principal types of practice include the following:

1. **Bombing practice from aircraft.**—Warning signals usually shown.

2. **Air-to-air and air-to-sea or ground firing.**—Air-to-air firing is carried out by aircraft at a large white or red sleeve, a winged target, or a flag towed by another aircraft moving on a steady course. Air-to-sea firing or air-to-ground firing is carried out from an aircraft at towed or stationary targets on sea or land. The firing in each case being directed seawards. As a general rule, warning signals are shown when the targets are stationary, but not when towed targets are used. All marine craft operating as range safety vessels, or towing targets, or managing radio controlled targets will display, for identification purposes while in or close to the danger area, a large red flag at the masthead and a painted canvas strip, 2m long and 1m wide, on the fore deck or cabin roof with red and white checkered squares.

3. **Antiaircraft firing.**—This may be directed at a target towed by an aircraft, a pilotless aircraft, a balloon, or a kite. Firing may take place from shore batteries or ships. Warning signals as a rule are shown from shore batteries and ships fly red flags.

4. **Firing from shore batteries or ships at fixed or floating targets.**—Warning signals, when given, usually consist of red flags by day and red fixed or red flashing lights at night. However, the absence of any such signals cannot be accepted as evidence that a practice area does not exist. Warning signals are usually shown from shortly before the practice starts until it stops. Ships and aircraft carrying out night exercises may illuminate with bright red or orange flares.

Vessels may be unaware of the existence of a practice area and may fail to observe the warning signals. However, the range authorities are responsible for ensuring that there should be no risk of damage to any vessels which may be in the practice area. If vessels find themselves to be within an area where practice is in progress, they should maintain their course and speed, and try to clear the area as quickly as possible.

Fishing vessels operating in or near firing practice and exercise areas may occasionally bring unexploded missiles or parts of missiles to the surface in their nets or trawls. These objects may be dangerous and should be treated with great circumspection.

Coastal radio navigational warnings are broadcast whenever military exercises take place.

Firing exercises are carried out in the following areas:

1. **Doringbaai (Papendorp)**—Antiaircraft weapons. Bound by lines joining the following positions:

- a. 31°42.4'S, 18°11.7'E.
- b. 31°37.5'S, 18°05.0'E.
- c. 31°44.0'S, 18°02.0'E.
- d. 31°50.0'S, 18°06.0'E.
- e. 31°52.0'S, 18°13.5'E.
- f. 31°43.5'S, 18°12.5'E.

2. **Saldanha (Langebaan Road Range)**—Air-to-air weapons. Bound by lines joining the following positions:

- a. 32°45.0'S, 17°40.0'E.
- b. 32°45.0'S, 17°49.0'E.
- c. 32°58.0'S, 17°55.0'E.
- d. 33°06.0'S, 17°56.0'E.
- e. 33°08.2'S, 17°58.0'E.
- f. 33°14.9'S, 18°05.8'E.
- g. 33°21.0'S, 18°09.0'E.
- h. 33°29.0'S, 18°04.5'E.
- i. 33°27.0'S, 17°59.0'E.
- j. 33°00.0'S, 17°40.0'E.

3. **Saldanha**—Air-to-air weapons. Bound by lines joining the following positions:

- a. 32°45.0'S, 17°49.0'E.
- b. 33°26.0'S, 18°05.0'E.
- c. 33°29.0'S, 17°54.0'E.
- d. 32°48.0'S, 17°38.0'E.

4. **Saldanha—North Head**—Weapons. Bound by lines joining the following positions:

- a. 33°03.01'S, 17°54.51'E.
- b. 33°03.01'S, 17°53.23'E.
- c. 33°00.70'S, 17°53.13'E.
- d. 33°01.23'S, 17°54.25'E.

5. **Saldanha (Tooth Rock)—Jacobs Reef Bombing Area**—Air-to-ground weapons and test firing of illuminants. A circle, radius 3.5 miles, with center at position 32°59'S, 17°51'E.

6. **Cape Point—Western Cape**—Naval exercises. Bound by lines joining the following positions:

- a. 34°15.0'S, 18°23.0'E.
- b. 34°24.0'S, 17°44.5'E.
- c. The arc of circle, with a radius of 50 miles and its center at position 33°58.1'S, 18°36.0'E, extending from 34°24.0'S, 17°44.5'E, to 34°44.0'S, 19°00.0'E.
- d. 34°30.0'S, 19°00.0'E.
- e. 34°30.0'S, 18°48.0'E.
- f. 34°15.0'S, 18°48.0'E.
- g. 34°15.0'S, 18°28.3'E.

7. **Cape Point—Bellows Rock**—Naval weapons. Rock in position 34°23.3'S, 18°29.6'E used as target.

8. **False Bay—Garden No. 1**—Sound Testing Range. Bound by lines joining the following positions:

- a. 34°08.60'S, 18°27.08'E.
- b. 34°08.62'S, 18°28.25'E.
- c. 34°09.60'S, 18°28.22'E.

d. 34°09.57'S, 18°27.05'E.

9. **False Bay—Garden No. 2**—Sound Testing Range. Bound by lines joining the following positions:

- a. 34°10.86'S, 18°27.11'E.
- b. 34°10.88'S, 18°27.14'E.
- c. 34°10.88'S, 18°27.01'E.
- d. 34°10.90'S, 18°27.12'E.

10. **False Bay—Proof North Range**—Area of a circle, with a radius of 2 miles (4,000m) centered on position 34°11.13'S, 18°26.32'E, between the bearings of 235° and 243°.

11. **False Bay—Proof South Range**—Area of a circle, with a radius of 8.5 miles (15,000m) centered on position 34°11.13'S, 18°26.32'E, between the bearings of 265° and 275°.

12. **False Bay—Lower North Range**—Weapons testing. Area of a circle, with a radius of 11 miles (20,384m) centered on position 34°10.50'S, 18°25.75'E, between the bearings of 254° and 283°.

13. **False Bay—Strandfontein**—Proof range. Bound by lines joining the following positions:

- a. 34°05.50'S, 18°32.00'E.
- b. 34°04.50'S, 18°41.50'E.
- c. 34°05.50'S, 18°47.75'E.
- d. 34°15.00'S, 18°44.00'E.
- e. 34°16.00'S, 18°31.50'E.

14. **False Bay—Swartklip**—Proof range. Bound by lines joining the following positions:

- a. 34°04.4'S, 18°42.1'E.
- b. 34°05.0'S, 18°41.0'E.
- c. 34°18.0'S, 18°44.0'E.
- d. 34°18.0'S, 18°48.0'E.
- e. 34°05.0'S, 18°45.0'E.
- f. 34°04.5'S, 18°43.9'E.

15. **False Bay—Macassar**—Anti-aircraft weapons. Area of a circle, with a radius of 8 miles (14,830m) centered on position 34°04.4'S, 18°42.2'E, between the bearings of 314°20' and 046°20'.

16. **False Bay—Simon's Town Shallow Water Demolition Range**—Bound by lines joining the following positions:

- a. 34°11.266'S, 18°26.650'E.
- b. 34°11.317'S, 18°26.991'E.
- c. 34°11.417'S, 18°26.940'E.
- d. 34°11.383'S, 18°26.700'E.

17. **False Bay—Simon's Town Deep Water Demolition Range**—Bound by lines joining the following positions:

- a. 34°11.3'S, 18°30.0'E.
- b. 34°11.5'S, 18°32.0'E.
- c. 34°10.0'S, 18°32.0'E.

d. The arc of circle, with a radius of 1 mile and its center at position 34°09.00'S, 18°32.00'E, extending from 34°10.00'S, 18°32.00'E to 34°09.25'S, 18°30.85'E.

e. 34°09.5'S, 18°30.0'E.

18. **Cape Agulhas—DeHoop (Potberg)**—Weapons testing range. The sea area at right angles to the coast for a distance of 500m from position 34°30'28"S, 20°26'56"E to position 34°35'05"S, 20°21'50"E and the sea area that runs at right angles from the shore for a distance of 5,000m from position 34°35'05"S, 20°21'50"E to position 34°38'03"S, 20°16'10"E.

19. **Port Elizabeth—Cape Recife**—Rifle range. Bound by lines joining the following positions:

- a. 34°01'S, 25°39'E.
- b. 34°01'S, 25°40'E.
- c. 34°03'S, 25°40'E.
- d. 34°03'S, 25°39'E.

20. **Durban**—Naval weapons. Bound by lines joining the following positions:

- a. 29°51.90'S, 31°03.87'E.
- b. 29°47.60'S, 31°20.40'E.
- c. 30°00.00'S, 31°18.80'E.
- d. 30°08.20'S, 31°07.70'E.
- e. 29°53.75'S, 31°02.48'E.

21. **Saint Lucia**—Naval weapons. Bound by lines joining the following positions:

- a. 27°42.95'S, 32°37.75'E.
- b. 27°40.33'S, 32°31.00'E.
- c. 27°52.58'S, 32°24.20'E.
- d. 27°55.58'S, 32°24.50'E.
- e. 28°03.83'S, 32°23.00'E.
- f. 28°05.00'S, 32°27.82'E.
- g. 28°05.50'S, 32°29.63'E.
- h. 28°06.67'S, 32°33.58'E.
- i. 28°07.33'S, 32°48.00'E.
- j. 27°38.00'S, 32°54.00'E.
- k. 27°38.00'S, 32°45.75'E.

22. Test firings of minor illuminants of various colors, with or without parachutes, frequently occur without warning along the coast in the vicinity of Swartklip (34°04.5'S, 18°41.2'E.).

Fishing Areas

Crayfish trap fishing is common along the Atlantic coast of South Africa. Mariners should navigate with caution when within 3 miles of the coast due to the presence of numerous anchored or drifting small fishing boats and their unlit bottom gear, marker buoys, and recovery lines.

Extensive fishing is carried out on the continental shelf of South Africa. Lighted and unlighted bouys marking trawler-fishing areas may be encountered.

Shark nets made of polyethylene rope and twine, marked by orange and yellow buoys, may be encountered in depths of approximately 15m around the S and E coasts of South Africa. These nets may or may not be charted. Vessels on passage are advised to remain at least 1 mile offshore in order to avoid them.

Government



Flag of South Africa

South Africa is a republic. The country is divided into nine provinces.

South Africa is governed by a President elected to a 5-year term by the National Assembly. The President appoints the Cabinet. The bicameral Parliament consists of the National Assembly, which is composed of 400 directly-elected members (using a system of proportional representation) serving 5-year terms, and the National Council of Provinces, which is composed of 90 indirectly-elected members (ten members elected by each provincial legislature) serving 5-year terms.

The legal system is based on Roman-Dutch law and English common law.

The capital is Pretoria. It has been reported (2005) that the South African Geographic Names Council will vote in October, 2005 to change the name of Pretoria to Tshwane.

Dependent Islands

Marion Island and **Prince Edward Island** (46°38'S., 37°56'E.), known as the Prince Edward Islands, lie about 1,200 miles SE of Cape Town and are the twin peaks of a submerged volcano. These two islands, which are usually surrounded by kelp, have a total area of 125 square miles and are separated by a passage, 11 miles wide.

The islands are bounded by rocky cliffs, which are generally low on the E side and high on the W. Marion Island, the southernmost, is covered by mosses, ferns, and peat bogs. Its volcanic peak is 1,230m high and covered by snow and ice. Prince Edward Island has a rounded summit, 672m high. Penguins, seals, and various birds, including albatrosses, inhabit the islands. Vessels approaching the islands from the NW should steer SE between them in order to pass clear of Solglimt Blinders (Aldebert Reef), a dangerous off-lying reef that may not break, even in calm conditions.

The island group is a possession of South Africa; a meteorological and radio station is situated on Marion Island. The climate is generally cloudy or dull with rain or snow on most days of the year and high winds.

Holidays

The following holidays are observed:

January 1	New Year's Day
March 21	Human Rights Day
Good Friday	Variable
Easter Sunday	Variable
Family Day	Variable
April 27	Freedom Day
May 1	Workers Day
June 16	Youth Day
August 9	National Women's Day
September 24	Heritage Day
December 16	Day of Reconciliation
December 25	Christmas Day
December 26	Day of Goodwill

Industries

The main industries are livestock raising and the mining of gold, diamonds, precious stones, coal, copper, iron ore, chromite, and asbestos. Other industries include automobile assembly, metal working, machinery, textiles, chemicals, fertilizer, natural gas processing, forestry, paper, tourism, wine, and fishing.

Principal crops include maize, sorghum, wheat, groundnuts, sunflower seeds, sugar cane, tobacco, citrus fruits, and various vegetables.

Languages

The 11 official languages, in order of predominance, are Zulu, Xhosa, Afrikaans, Sepedi, English, Tswana, Sotho, Tsonga, Swazi, Venda, and Ndebele.

English is the sole language of command in the armed forces.

Navigational Information

Enroute Volumes

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of South Africa are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.

Continental Shelf 200 miles or the
Continental Margin.

* Claims straight baselines.

Pollution

General

Regulations are in force prohibiting the discharge of oil or oil mixed with any other substance into the internal or territorial waters of South Africa (12 miles from the coast), and any oil or mixture containing more than 100 parts per million of oil from the limit of the territorial sea to 50 miles from the coast.

Pollution Sightings

Vessels navigating off the coast of South Africa or lying in an anchorage at the various ports are requested to report the following:

1. Oil slicks sighted.
2. Oil accidentally discharged.
3. Oil discharged in the interest of the safety of life at sea.
4. Vessels in distress likely to cause pollution.

Reports of this nature should be addressed to The Principal Officer, The South African Maritime Safety Authority (SAM-SA). The reports may be sent through any South African coast radio station or via VHF channel 16 to the port control offices at the following locations:

1. Richards Bay.
2. Durban.
3. East London.
4. Port Elizabeth.
5. Mossel Bay.
6. Cape Town.
7. Saldanha Bay.

The following information should be given in the report:

1. Effect of the oil on the appearance of the water, given by one of the following conditions:
 - Condition 1—Barely visible under most favorable light conditions.
 - Condition 2—Visible as a silvery sheen on the surface of the water.
 - Condition 3—First trace of color may be observed.
 - Condition 4—Bright bands of color observed.
 - Condition 5—Colors begin to turn dull natural to color of oil.
 - Condition 6—Colors natural to color of oil.
2. Position.
3. Extent of the slick.
4. Weather or direction of the wind.
5. Vessel involved.

No master or crew member making or associated with a report of this type would be called upon to give evidence in a court of law if the vessel is due to sail before the trial.

Pollution Reports

The following information is required for a radio report of discharge of oil and/or damage to vessels when navigating within 50 miles of the coasts of South Africa and Namibia:

1. Name, call sign, official number, and port of registry.
2. Position, course, and speed.
3. Nature of damage (see note below).

4. Prevailing weather and sea conditions.

5. Whether bound for a port in South Africa.

If applicable, the particulars contained in the certificate which, in terms of *Article VII of the International Convention on Civil Liability for Oil Pollution, 1969*, is required to be carried on board.

Note.—Damage to a vessel shall be deemed to have created the likelihood of a discharge of oil if it is of such a nature as to detrimentally affect, in any way, the vessel's seaworthiness or efficient working.

Regulations

General

Vessels should send their ETA at least 72 hours in advance (excluding Sunday and public holidays) to their port of destination, stating the following information:

1. Vessel length, freeboard, and draft fore and aft.
2. Details on any dangerous cargo.
3. Type and quantity of cargo being landed or loaded.
4. Bunkers and other requirements.
5. Factors affecting the safe entry and/or berthing of the vessel.
6. Is the vessel engaged in towing or salvage? If yes, further details are required.

Vessels should send their ETA to the appropriate Port Control on VHF channel 16 when within 20 miles of their destination.

Vessels at anchor within or near the port limits of South African harbors must maintain a continuous listening watch on VHF channel 16.

Tankers

The following regulations, as promulgated by the South African authorities, concern the navigation of laden tankers.

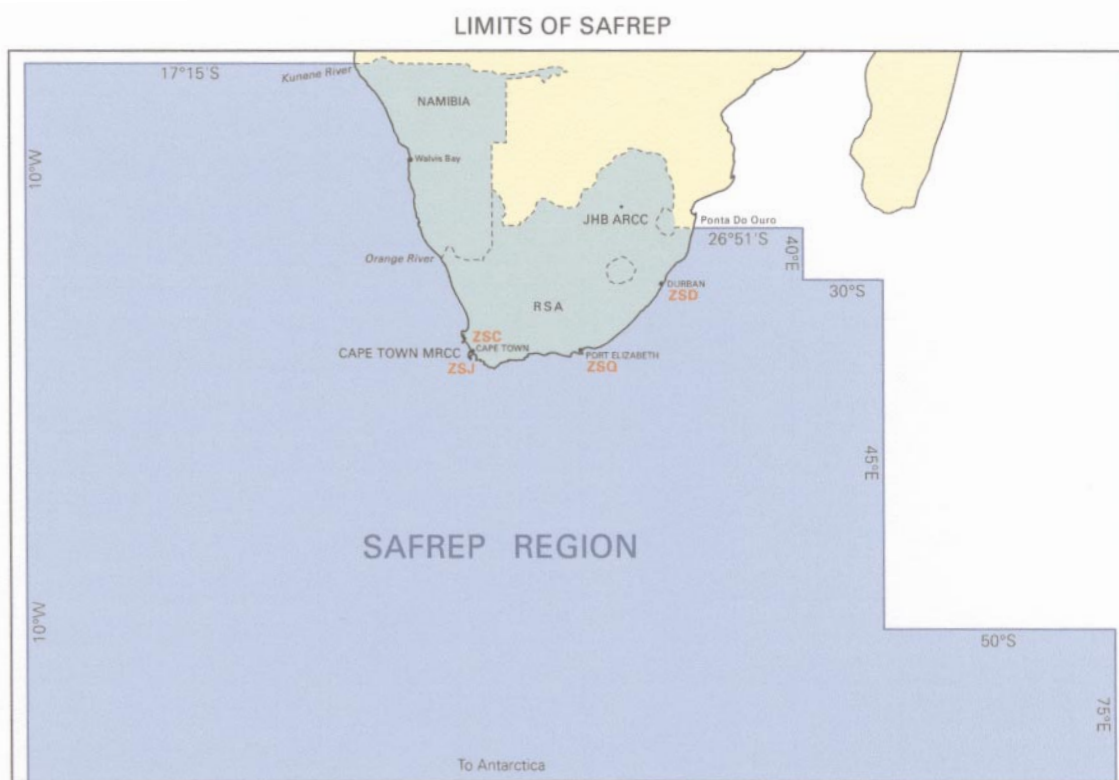
In these regulations, a "laden tanker" means any tanker other than a tanker in ballast having in its cargo tanks residual cargo only.

In addition, "summer months" refers to that period from 16 October to 15 April and "winter season" refers to that period from 16 April to 15 October.

The winter zone boundary line is the N most limit of the South Winter Seasonal Zone, as defined by the International Convention on Load Lines, 1966.

The following rules apply to laden tankers navigating off the South African coast:

1. Laden tankers, westbound, should adhere to the following:
 - a. Maintain a minimum distance of 20 miles off the following points:
 - i. South Sand Bluff.
 - ii. Bashee River (Mbashe Point).
 - iii. Hood Point.
 - iv. Cape Recife.
 - b. Steer to pass through the westbound (northern) lanes of the Traffic Separation Schemes off FA Platform and the Alphen Banks and then maintain a minimum distance of 20 miles from the following points:
 - i. Cape Agulhas
 - ii. Quoin Point



- iii. Cape Point
- iv. Slangkop Point
- v. Cape Columbine

2. Laden tankers, eastbound, should also maintain a minimum distance of 25 miles off when passing the points listed in 1a and 1b and, when between Cape Agulhas and Cape Recife, steer a course to pass through the eastbound (southern) lanes of the Traffic Separation Schemes off FA Platform and the Alphard Banks.

3. The following exemptions to the laden tanker rules apply:

- a. Vessels calling at Cape Town (Table Bay) to rendezvous with service craft or helicopters should follow the recommended routes until, in the case of laden tankers when proceeding W, Cape Point Light bears 000° at a distance of 20 miles. Vessels should then alter course towards a position where Slangkop Point Light bears 250° at a distance of 20 miles. Course may then be altered to the rendezvous area 6 miles W of Green Point Light.
- b. Laden tankers engaged solely between South African ports are exempted from the provisions of paragraphs 1 and 2 of these regulations and are to maintain a distance of 10 miles off the salient points of the coast subject to weather, sea, and current conditions, when setting courses to their ports of loading and discharging.
- c. During the winter season, westbound laden tankers should maintain the minimum distance of 20 miles off the appropriate landmarks in paragraph 1a. However, on approaching the winter zone, they may remain within the summer zone as close to the separation zone as possible,

and for the minimum period necessary, to ensure that they can remain on their summer loadline throughout. In the vicinity of FA Platform and the Alphard Banks, they are to adjust their course to pass through the westbound traffic lanes.

South African Maritime Safety Authority (SAMSA) Reporting System

South Africa has implemented maritime security requirements through the South African Merchant Shipping (Maritime Security Regulations, 2004 and the International Ship and Port Facility (ISPS) Code.

Certain vessels are required to submit either a pre-arrival report or a pre-entry report to the Maritime Rescue Coordination Center (MRCC) Cape Town at least 96 hours in advance of the vessel's ETA in its first South African port, as follows:

1. Pre-arrival information is required from vessels on international voyages bound for South African ports, as follows:
 - a. Foreign passenger vessels.
 - b. Cargo vessels of 500 gross tons or greater.
 - c. Mobile offshore drilling units (MODUs).
2. Pre-entry information is required from vessels bound for South African ports, as follows:
 - a. Foreign-going South African passenger vessels.
 - b. Cargo vessels of 500 gross tons or greater.
 - c. Mobile offshore drilling units (MODUs).

The following vessels are exempt from the pre-arrival/pre-entry reporting requirements:

1. Fishing vessels.
2. Vessels used only for recreation or sport.
3. Government vessels on non-commercial voyages.
4. Coastal vessels.
5. Vessels transiting South African territorial waters.

The information required must be in English. It must be in writing and must be transmitted to MRCC Cape Town via Cape Town Radio by telex (the preferred method) or by e-mail, as follows:

1. Telex: 095-511-600
2. * E-mail: maritimeradio@ixmail.co.za

* **Note.**—This method may be used only by vessels without telex facilities which have made prior arrangements with Cape Town Radio to use e-mail. In exceptional cases, such as faulty or unavailable satellite telex, Cape Town Radio will accept a forwarded e-mail from the vessel's agent. Since Cape Town Radio does not monitor e-mail, the master/agent must make arrangements with Cape Town Radio shortly before transmission or after sending the e-mail to ensure its receipt. Cape Town Radio will **not** forward e-mail messages to the MRCC without this confirmation. The e-mail reports must be sent in the body of the message and not as an attachment; attachments are stripped from Cape Town Radio e-mails. SAMSA strongly emphasizes the use of telex to ensure the proper transmission and receipt of the required information.

When a vessel transits between South African ports, pre-arrival/pre-entry information is only required if the vessel interfaces with another ship between ports. If this occurs, the pre-arrival/pre-entry information must be transmitted as soon as possible but at least 5 hours before the vessel's ETA.

Failure to submit complete and timely could pre-arrival/pre-entry information is delays to the vessel. Failure to submit pre-arrival/pre-entry information will result in the vessels being denied entry to the port.

The format for the pre-arrival/pre-entry information report is given in the accompanying table.

Code Prefix	Required Information
A	Vessel name, call sign, port of registry, and current security level on board
B	Time in UTC (6 digit group-DDHHMM)
C	Position (latitude is 4-digit group in degrees and minutes with N or S; longitude is 5-digit group in degrees and minutes E)
D	Type of vessel
E	Course (3 digits)
F	Speed in knots and tenths (3 digits, with the decimal point omitted)
G	IMO number
H	ISSC certificate on board (Y/N) and issuing authority

Code Prefix	Required Information
I	Business name of vessel's agent at intended port of call
J	Name of and ETA at first South African port of call and name of next port of call
P1	Last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P2	Second to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P3	Third to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P4	Fourth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P5	Fifth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P6	Sixth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P7	Seventh to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P8	Eighth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)

Code Prefix	Required Information
P9	Ninth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
P10	Tenth to last port of call, departure date (8-digit group-DDMMYYYY), ship security level, any special or additional security measures taken, and were appropriate security measures maintained during ship-to-ship activity in the port (Y/N)
Q	Owner or charterer and contact details
R	Ship Security Officer details
S	Company Security Officer details
U	Details of cargo
W	Details of persons on board, other than passenger or crew, and the reason they are on board

Search and Rescue

The South African Department of Transport is responsible for coordinating search and rescue operations. The Maritime Rescue Coordination Center (MRCC) Cape Town, located at Platteklouf near Cape Town, can be contacted by e-mail. as follows:

mrcc.ct@samsa.org.za

Port control offices at the following major ports act as Maritime Rescue Coordination Subcenters (MRSC) operating under the control of MRCC Cape Town, as follows:

1. MRSC Saldanha Bay.
2. MRSC Cape Town.
3. MRSC Port Elizabeth.
4. MRSC East London.
5. MRSC Durban.
6. MRSC Richards Bay.

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

The South African Search and Rescue Organization (SASAR) is the responsible authority for coordinating the efforts of other means of search and rescue at the port captain's disposal; namely, tugs, police launches, and the resources of the South African Navy and Air Force. Commercial aircraft operated by affiliated organizations are also available when requested.

The National Sea Rescue Institute of South Africa (NSRI) has been established and is administered by the Department of Transport. The NSRI provides sea rescue facilities inshore and offshore at all ports and operates under the control of the South African Search and Rescue Organization (SASAR) through the port captains of the areas concerned. All NSRI vessels and

boats, all of which are equipped with VHF radios, with some equipped with HF radios, are controlled by NSRI through its shore-based transmitters.

The NSRI operates rescue stations at the following locations:

1. Saldanha Bay.
2. Table Bay.
3. Bakoven.
4. Hout Bay.
5. Kommetjie.
6. Simon's Town.
7. Strandfontein.
8. Gordon's Bay.
9. Hermanus.
10. Mossel Bay.
11. Wilderness.
12. Knysna.
13. Plettenberg Bay.
14. St. Francis Bay.
15. Port Elizabeth.
16. Port Alfred.
17. East London.
18. Port St. Johns.
19. Shelly Beach.
20. Durban.
21. Richards Bay.

The NSRI operates auxiliary rescue stations at the following locations:

1. St. Helena Bay.
2. Melkbosstrand.
3. Coffee Bay.
4. Kleinmond.
5. Struisbaai.

Ship Reporting System—SAFREP

The South African Ship Reporting System (SAFREP) has been established to identify and monitor the positions and movements of vessels participating in the system within the SAFREP area. All vessels operating within the SAFREP area are welcome to participate in the system, although emphasis is placed on trading vessels of over 100 grt.

Vessels within the SAFREP area are requested to provide regular position reports. This information, which is used to maintain a computer plot of the vessel's last position and to calculate future DRs, is used to:

1. Limit the search area for a rescue at sea.
2. Provide accurate information on shipping resources in the area, in the event of a marine casualty.

The SAFREP area is bound by lines joining the following coordinates:

- a. 17°15'S, 11°45'E. (The mouth of the Kunene River—on the W coast of Africa at the Angola/Namibia border)
- b. 17°15'S, 10°00'W.
- c. The coast of Antarctica at longitude 10°00'W.
- d. The coast of Antarctica at longitude 75°00'E.
- e. 50°00'S, 75°00'E.
- f. 50°00'S, 45°00'E.
- g. 30°00'S, 45°00'E.
- h. 30°00'S, 40°00'E.
- i. 26°50'S, 40°00'E.
- j. 26°50'S, 32°54'E. (Ponta do Ouro—on the E coast of Africa at the South Africa/Mozambique border)

SAFREP operating principles.—The SAFREP system operates under the assumption that vessels transiting the SAFREP area will send, at a minimum, the following three basic reports to MRCC Cape Town:

1. When entering the SAFREP area.
2. When crossing 20°E longitude S of Cape Agulhas.
3. When departing the SAFREP area.

Vessels wishing to report more frequently are encouraged to do so by submitting a Position Report (SAFREP PR), as this will increase the accuracy of the SAFREP computer plot.

Vessels should be aware that the SAFREP system is a passive reporting system. Should further SAFREP reports not be received from a vessel, SAR actions will not automatically be initiated.

Coastal vessels and vessels arriving at and departing from South African and Namibian ports will make Arrival Reports (SAFREP AR) and Departure Reports (SAFREP DPR) to the SAFREPCC at MRCC Cape Town. Ports of South Africa and Namibia are considered to lie outside the SAFREP area; when a vessel enters any of these ports, it is considered to have departed from the SAFREP area.

Message requirements.—Vessels participating in the SAFREP system are requested to send the reports listed below in Types of Reports. All reports should include the system identifier SAFREP and the code for the appropriate report (e.g. SAFREP PR). A report should be sent at least once every 2 days, especially when significant course and/or speed changes are made, in order to update the SAFREP computer plot and ensure a quicker response in the event of a maritime emergency.

Types of Reports.—The requested reports for vessels participating in the SAFREP system are, as follows:

1. **Sailing Plan (SAFREP SP)**—Sent to the SAFREPCC for any vessel entering the SAFREP area from a port outside South Africa or Namibia.
2. **Position Report (SAFREP PR)**—Sent when crossing 20°E longitude S of Cape Agulhas or when the master considers it necessary for updating the SAFREP computer plot.
3. **Final Report (SAFREP FR)**—Sent when leaving the SAFREP area bound for a port outside South Africa or Namibia.

4. **Arrival Report (SAFREP AR)**—Sent within 3 hours of a vessel arriving at a port in the SAFREP area.

5. **Departure Report (SAFREP DRP)**—Sent within 3 hours of a vessel departing from a port in the SAFREP area.

6. **Deviation Report (SAFREP DR)**—Sent when the vessel's position varies significantly from the position that would have been predicted from previous reports or as decided upon by the master.

7. The following reports are also sent in the event of a maritime incident:

a. **Maritime Pollutants Report (SAFREP MP)**—Sent in the event of a pollution incident.

b. **Dangerous Goods Report (SAFREP DG)**—Sent in the event of the loss of dangerous cargo.

c. **Harmful Substance Report (SAFREP HS)**—Sent in the event of the discharge of a harmful substance.

Message Formats.—All reports should be sent in the standard reporting coded format. All reports should include the system identifier SAFREP and the code for the appropriate report (e.g. SAFREP SP). All dates and times entered in SAFREP reports are to be in Universal Coordinated Time (UTC). Message formats are given in the accompanying table.

The forward slash (/) should be used to separate each element of the component; the double forward slash (//) should be used at the end of each component. This facilitates the automatic entry of this information into the SAFREP computer database. An example is:

SAFREP PR A/EXAMPLE/XXXX/12345678//B/ ... etc.

Reports should only include those components as listed in the SAFREP Message Formats table.

For reports submitted by telex or INMARSAT-C, all typing should be done in uppercase.

Transmission of Messages.—SAFREP messages can be sent through Telkom SA Ltd coast radio stations at Cape Town, Port Elizabeth, and Durban.

SAFREP messages can also be sent on INMARSAT-C addressed to "SAFREP" using telex number +95-511600 (Answerback: 5116RA SA) (Cape Town Radio).

SAFREP Message Formats										
Iden- tifier	Content	SP	PR	FR	AR	DPR	DR	DG	HS	MP
A/	Name/call sign/MMSI number/flag/— (for flag, use as defined in Lloyd's publi- cations)	X	X	X	X	X	X	X	X	X
B/	Time (UT (GMT))//—(date and time of report 6 digits-day of month 2 digits; hour and minutes 4 digits)	X	X	X	X	X	X	X	X	X
C/	Lat/Long//—(latitude is 4-digit group in degrees and minutes with N or S; longitude is 5-digit group in degrees and minutes E)	X	X	X	X		X	X	X	X
E/	Course//—(true heading is a 3-digit group)	X	X	X		X ¹	X		X	

SAFREP Message Formats										
Identifier	Content	SP	PR	FR	AR	DPR	DR	DG	HS	MP
F/	Speed//—(knots and tenths of knots e.g. 15.5=15.5)	X	X	X		X ¹	X		X	
G/	Port of departure//(name of last port of call)	X								
H/	Date/Time/Position of entry into the SAFREP area or name of port when departing a port in the SAFREP area//—(date and time as expressed in B; position as expressed in C)	X				X				
I/	Destination/ETA//—(port and ETA as expressed in B)	X	X	X		X	X			
K/	Date/Time/Position of departure from SAFREP area or name of the port when entering a port within the SAFREP area//—(date and time as expressed in B; position as expressed in C)			X		X ¹	X ²			
M/	Radio communications//—(Name(s) or call sign(s) of coast radio stations and frequencies guarded)	X				X ³		X	X	X
O/	Draft//—(in meters)	X			X	X ¹				
P/	Pollution details, as described in the Key below							X ⁴	X ⁵	X ⁴
Q/	Defects, damages, deficiencies, and other limitations//—(brief details)							X	X ⁶	X ⁶
R/	Pollution, dangerous cargo lost overboard//							X ⁷	X ⁸	X ⁷
S/	Weather//—(sea state (1-9), wind speed (in knots), wind direction {N/NE/E/SE/S/SW/W/NW}, and visibility {good/moderate/poor})	X	X	X				X	X	X
T/	Vessel's agent//—(name and particulars)	X						X	X ⁹	X ⁹
U/	Vessel size/type//—(vessel's grt and type)	X						X	X	X
V/	Medical personnel//—(doctor, physician's assistant, nurse, or NIL)	X				X				
W/	Persons//—(State number of persons on board)	X				X				
X/	Remarks//—(Any other useful information)	X				X	X	X	X ¹⁰	X ¹⁰
Key										
X	Required information.									
X ¹	When sailing from a port in the SAFREP area, this information is not required for coastal vessels but is required from vessels departing from a port outside South Africa or Namibia.									
X ²	This information is not required for coastal vessels.									
X ³	Coastal vessels sailing in the SAFREP area for the first time should include this information.									

Key	
X ⁴	<p>DG—This information is required if the condition of the vessel is such that there is danger additional losses of packaged dangerous cargo into the sea.</p> <p>MP—This information is required in the event of probable discharge.</p> <p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Correct technical name(s) of cargo. 2 UN number(s). 3 IMO hazard class(es). 4 Name(s) of manufacturer(s), when known, or consignee(s) or consignor(s). 5 Types of packages, including identification marks. Specify whether portable tanks or tank vehicles, whether vehicle or freight container, or other transport unit containing packages. Include official registration marks and numbers assigned to the unit. 6 An estimate of the quantity and likely condition of the cargo. <p>Information not immediately available should be sent in a supplementary message or messages.</p>
X ⁵	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Type of oil or the correct technical name(s) of the noxious liquid substance on board. 2 UN number(s). 3 Pollution category (A, B, C) for noxious liquid substances. 4 Name(s) of manufacturer(s) of substances, if appropriate, when known, or consignee(s) or consignor(s). 5 Quantity.
X ⁶	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Condition of the vessel. 2 Ability to transfer cargo/ballast/fuel.
X ⁷	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Correct technical name(s) of cargo. 2 UN number(s). 3 IMO hazard class(es). 4 Name(s) of manufacturer(s), when known, or consignee(s) or consignor(s). 5 Types of packages, including identification marks. Specify whether portable tanks or tank vehicles, whether vehicle or freight container, or other transport unit containing packages. Include official registration marks and numbers assigned to the unit. 6 An estimate of the quantity and likely condition of the cargo. 7 Whether loss is continuing. 8 Whether lost cargo floated or sank. 9 Cause of loss.
X ⁸	<p>The following details should be included:</p> <ol style="list-style-type: none"> 1 Type of oil or the correct technical name(s) of the noxious liquid discharges into the sea. 2 UN number(s). 3 Pollution category (A, B, C) for noxious liquid substances. 4 Name(s) of manufacturer(s) of substances, if appropriate, when known, or consignee(s) or consignor(s). 5 An estimate of the quantity of the substances. 6 Whether lost substances floated or sank. 7 Whether loss is continuing. 8 Cause of loss. 9 Estimate of the movement of the discharge or lost substances, giving current position, if known. 10 Estimate of the surface area of the spill, if possible.
X ⁹	<p>Name, address, telex number, and telephone number of the vessel's owner and representative (charterer, manager, or operator of the vessel or their agent).</p>

Key	
X ¹⁰	<p>The following details should be included:</p> <ol style="list-style-type: none">1 Action being taken with regard to the discharge and the movement of the vessel.2 Assistance or salvage efforts which have been requested or which have been provided by others.3 The master of an assisting or salvaging vessel should report the particulars of the action undertaken or planned. <p>After the transmission of the information referred to in the initial report, as much as possible of the information essential for the protection of the marine environment as is appropriate should be reported in a supplementary message as soon as possible. That information should include items P, Q, R, S, and X. The master of any vessel engaged in or requested to engage in an operation to render assistance or undertake salvage, should report as far as practicable, using the standard reporting format, the following items:</p> <ul style="list-style-type: none">• HS—Items A, B, C, E, F, M, P, Q, R, S, T, U, and X.• MP—Items A, B, C, M, P, Q, R, S, T, U, and X. <p>The master should also keep the coastal state informed of any developments.</p>

Submarine Operating Areas

South African submarines may be encountered by day or at night while operating in the waters off the South African coast. Under certain circumstances, warnings that submarines are exercising in specified areas may be broadcast by local coastal radio stations.

Submarines frequently exercise off the SW coast of South Africa in an area generally bounded by lines joining the following positions.

- a. 32°00'S, 16°00'E.
- b. 32°00'S, 20°00'E.
- c. 36°00'S, 20°00'E.
- d. 36°00'S, 16°00'E.

Submarines may also be encountered in Valsbaai and in the approaches to Port Elizabeth, East London, and Durban.

South African warships fly the International Code Group “NE2” to denote that submarines, which may be submerged or surfaced, are in the vicinity. Vessels are cautioned to give a wide berth to any vessel flying this signal.

It must not be inferred from the above that submarines exercise only when in the company of escorting vessels.

A submarine submerged at a depth too great to show the periscope may indicate its position by means of an underwater lantern, which will illuminate the sea surface from below.

The following signals are used by submerged submarines while in submarine exercise area:

1. White smoke candles (with flames) indicate the position in response to a request from a ship or aircraft, or as required.
2. Green pyro flares indicate the position from which a practice torpedo has been fired. All vessels are requested to keep clear as the submarine may want to surface after the firing.
3. Red pyrotechnic flares, which may be accompanied by smoke candles, repeated as often as possible indicate that vessels should keep clear as the submarine is carrying out emergency surfacing procedure. Vessels must not stop their propellers, but should clear the area immediately and stand by to render assistance.

Note.—If the red pyro flare is sighted and the submarine does not surface within 5 minutes, it should be assumed that the submarine is in distress and has sunk. An immediate attempt should be made to fix the position in which the

signal was sighted, after which the actions to be taken in the event of a sunken submarine should be initiated.

4. Two white smoke candles released 3 minutes apart indicate that vessels should keep clear as the submarine is preparing to surface. Vessels must not stop their propellers and should clear the immediate vicinity.

Navigation Lights

South African submarines may be encountered on the surface at night, particularly in the vicinity of the ports of Saldanha Bay, Cape Town, Simon's Town, Hout Bay, Port Elizabeth, East London, and Durban.

The steaming and side lights of South African submarines appear to be placed well forward and very low above the water in proportion to the length and tonnage of these vessels. In particular, the emergency steaming light is lower than the side lights. The emergency overtaking light (stern) is also placed low down and may be obscured by spray and wash. South African submarines are fitted with an amber quick-flashing light situated 1 to 2m above the steaming light as an aid to identification. This light will also be used when snorting. While at anchor or moored to a buoy at night, submarines display normal anchor lights.

The overall arrangements of submarine lights is unusual and may well give the impression of markedly smaller and shorter vessels. Their vulnerability to collision when proceeding on the surface dictates particular caution when approaching such vessels.

Sunken Submarine

A submarine which is bottomed and unable to surface will try to indicate its position by the following methods:

1. Releasing an indicator buoy (which carries a vertical whip aerial) as soon as the accident occurs.
2. By firing white smoke candles, on the approach of surface vessels and at regular intervals.
3. Pumping out fuel or lubricating oil.
4. Blowing out air.

It may be impossible for a submarine to fire smoke candles. Correspondingly, a partially-flooded submarine may only have a certain number of smoke candles available and searching ships should not therefore expect many to appear.

Since oil slicks or debris may be the only indication of the presence or whereabouts of the sunken submarine, it is vitally

important that surface ships refrain from discharging anything which appear to have come from a submarine while they are in the probability area. Searching ships and aircraft can waste valuable time investigating these false contacts.

Some South African submarine pyrotechnics can be fitted with message carriers. These may be recovered as soon as they have finished burning. The contents of the message, as well as the position and time of recovery, should be passed to one of the following:

1. The nearest Naval vessel in the vicinity.
2. NAVCOMCENCAPE, Private Bag X1, TOKAI, 7966, telephone (Cape Town) 021-787-2911.
3. COMFLEET, Naval Base, Simonstown.
4. The nearest branch of the South African Police Service.

South African submarines are fitted with Submarine Indicator Buoys (EPIRB), which can be released from inside in case of emergencies or if for any reason the submarine is unable to surface. They are described later in this section.

In any submarine accident, time is the most vital factor affecting the chances for rescue of the survivors, and, as the sighting of an indicator buoy may be the first intimation that an accident has in fact occurred, it is vital that no time should be lost in taking action.

The sighting of any indicator buoy should at once be reported by the quickest available means. If known, the name of the submarine should be included in the report. However, if vessels are unable to establish communication without leaving the vicinity of the submarine, it should be borne in mind that the primary consideration should be for vessels to remain standing by to rescue survivors and not leave the scene of the accident.

At any time after a submarine accident, survivors may start attempting to escape. Current policy dictates that survivors will wait before escaping until rescue vessels are known to be standing by or conditions inside the submarine deteriorate to such an extent that an escape must be attempted.

It should be noted that, in certain circumstances, the latter situation may not arise through lack of air supply until several days after the accident. However, if the submarine is badly damaged, survivors may have to make an escape attempt immediately. On arrival at the surface, crew members may be exhausted or ill, and, if circumstances permit, the presence of a boat already lowered is very desirable. Some crew members may require a recompression chamber. Therefore, it is the aim of the authorities to get such a chamber to the scene as soon as possible.

In order that those trapped in the submarine shall be made aware that help is at hand, naval vessels drop small charges into the sea which can be heard from inside the submarine. There is no objection to the use of small charges for this purpose, but it is vital that they are not dropped too close since crew members in the process of making ascents are particularly vulnerable to underwater explosions, and may easily receive fatal injuries. A distance of about 0.3 mile is considered to be safe.

If no small charges are available, the running of an echo sounder or the banging of the outer skin of the ship's hull with a hammer from a position below the waterline are likely to be heard in the submarine, and such banging and/or sounding should therefore be carried out at frequent intervals.

Submarine Indicator Buoys (EPIRB)

South African submarines are equipped with free-floating indicator buoys. It is therefore of the utmost importance that the position, together with the estimated current and the strength and direction of the wind at that position; and the time of first sighting of the buoy be accurately and speedily reported to the appropriate authorities.

A South African submarine free-floating indicator buoy is made of aluminum. The body of the buoy, painted bright orange, is 62cm long and about 20cm in diameter. It has a flat base and a round upper end. A plastic label is affixed to the side of the buoy near its base. Around the buoy there are two reinforcing extensions and between them a mounting flange protrudes where a socket contains salt water sensors. If the buoy is taken out of the water and salt water no longer connects the sensors, the buoy will stop transmitting.

When released, the buoy will float to the surface and transmit on 121.5 MHz (VHF emergency frequency) and on 406 MHz (satellite locating frequency). The signal transmitted is a series of warbling notes. Vessels receiving this signal should report the fact, giving their position and, if possible, an indication of signal strength.

Submarine indicator buoys should not be confused with white or yellow smoke candles or sonobuoys.

White smoke candles are usually fired from submarines to indicate their positions. They burn for up to 15 minutes emitting white smoke and flame. These candles can be seen by day or at night and may easily be confused with aircraft marine markers. Yellow smoke candles are also fired from submarines to indicate their positions. They burn for about 5 minutes emitting yellow smoke. These candles can be seen more easily than white smoke candles in rough weather, but they cannot be seen at night. Sonobuoys are dropped from aircraft to detect submarines and may be encountered anywhere at sea.

The above objects may frequently be seen in areas where warships and aircraft exercise, whether or not submarines are present. In case of doubt, the object should be approached to confirm, visually, whether or not it is a submarine indicator buoy before reporting it.

Time Zone

The Time Zone description is BRAVO (-2). Daylight Saving Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) in South Africa are, as follows:

1. Approaches to Port Elizabeth. (Government of South Africa)
2. Approaches to Saldanha Bay. (Government of South Africa)
3. Approaches to Table Bay. (Government of South Africa)
4. Alphen Banks. (South of Cape Infanta)(IMO adopted)
5. Platform FA (South of Cape St. Blaize). (IMO adopted)

U.S. Embassy

The U.S. Embassy is situated at 877 Pretorius Street, Pretoria.

The mailing address is P.O. Box 9536, Pretoria 0001.

U. S. Embassy South Africa Home Page
<http://pretoria.usembassy.gov>

Vessel Traffic Service

Regulations.—All vessels in South African waters are to maintain a constant listening watch on VHF channel 16, unless in the area of a VTS System, when the watch should be on the appropriate designated frequency.

Navigational safety calls, comprising the vessel's name, position, and intended course of action, are to be made on VHF channel 16 in the event of any of the following:

1. Risk of collision.
2. A call from another vessel indicating that a close quarters situation is developing.
3. Overtaking, or being overtaken, in a narrow channel.
4. Doubt about another vessel's intentions.
5. An obstruction or bend in the channel which may obscure approaching vessels.
6. In restricted visibility, approaching charted routes or groups of vessels.
7. If vessel is restricted in its ability to maneuver.
8. Approaching dredges and floating plants in restricted waters, which are not covered by a VTS system.
9. Leaving a berth, anchorage, mooring area, etc.
10. Any other occasion when a call could contribute to safe navigation.

Vessel Traffic Services.—The following information applies to all South African Inshore VTS systems (as distinct from an offshore system; i.e., for Laden Tankers off the Alphen Bank), unless otherwise stated:

1. **Description.**—Participation in these VTS systems is mandatory for the following:
 - a. Vessels of 15m or more in length.
 - b. Towing vessels where the tow is 15m or more in length, or the overall length of vessel and tow is 30m or more.
 - c. Any passenger-carrying vessels.
 - d. All vessels carrying dangerous or pollutant cargo.
2. **Procedure.**—Vessels may be required to report the following information:
 - a. Vessel's name.
 - b. Call sign.
 - c. Position.
 - d. ETA of vessel entering the VTS zone.
 - e. Destination.
 - f. ETA at destination.
 - g. Whether any pollutant or dangerous goods cargo is carried on board or on any vessel or object being towed or pushed.
 - h. ETD from a berth.
 - i. ETA at a location requiring a report (such as a reporting system).

The above information must be reported, as follows, when:

- i. Entering a VTS Zone.—Fifteen (15) minutes before entering a VTS zone, a vessel must apply for Traffic Clearance, stating 2a through 2g as specified under Procedure.
- ii. Arriving at a Reporting-in-Point (RP).—On arriving at an RP, a vessel must report 2a, 2c, and 2i as specified under Procedure.
- iii. Arriving at a berth.—As soon as practicable after arriving, a vessel must report 2a and 2c as specified under Procedure.
- iv. Departing a berth.—Five (5) minutes prior to departing a berth, a vessel must report 2a through 2c and 2e through 2h as specified under Procedure.
- v. Immediately prior to departing a berth.—A vessel must report 2a, 2c, and 2i as specified under Procedure.
- vi. Maneuvers.—Fifteen (15) minutes prior to commencing any maneuver listed below, a vessel must apply for traffic clearance stating 2a and 2c as specified under Procedure, plus a description of their intended maneuvers:

- A. Compass adjustment.
- B. The calibration and servicing of navigational aids.
- C. A sea trial.
- D. A dredging operation.
- E. The laying, picking up, and servicing of a submarine cable or navigation mark.
- F. Any other maneuver that may be detrimental to safe navigation.

As soon as possible after the maneuver is completed, a description of the maneuver (just completed) must be communicated to the VTS Center.

3. **Incident Reports.**—Vessels should immediately report any of the following and include 2a and 2c as specified under Procedure:

- a. An onboard fire that may impair safe navigation.
- b. The involvement of the vessel in a collision, grounding, or striking that may impair safe navigation.
- c. Any defect to the vessel's hull, main propulsion equipment, steering, radars, compass, radio equipment, anchors, or cables that may impair safe navigation.
- d. Any discharge or threat of discharge of a pollutant from the vessel.
- e. Another vessel in apparent difficulty.
- f. The presence of any other vessel which may impede the movement of other vessels.
- g. Any obstruction to navigation.
- h. Any aid to navigation that is functioning improperly, damaged, off-position, or missing.
- i. The presence of any pollutant in the water.
- j. Any weather condition which may impair safe navigation.

Items f, g, and h need not be reported if the information has been previously reported by Notice to Mariners or Coastal Navigation Warnings.

4. **VHF Equipment Failure.**—In the event of VHF radio failure, the VTS Center should be alerted immediately by sending a message by MF, RT, or WT through a Coast Radio Station or another vessel, or by other means, stating

that there is a failure and giving the vessel's position and destination.

5. **Note.**—All times should be given in local time (UTC+2).



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General

The South Atlantic Ocean is bounded on the E by Africa, on the S by Antarctica, and on the W by South America. Its SE limit is considered to be the meridian of 20°00'E extending between Cape Agulhas and the Antarctic Continent. Its SW limit is considered to be the meridian of Cape Horn (67°16'W.) extending between Tierra del Fuego and the Antarctic Continent. The N limit is formed by the Equator and the NE limit by the SW border of the Gulf of Guinea., which extends from Cape Palmas, in Liberia, to **Cape Lopez** (0°38'S., 8°42'E.).

The Mid-Atlantic Ridge, an immense median mountain range, is the most outstanding feature of the ocean floor. It extends throughout the length of the Atlantic Ocean, claiming the center third of the sea bed and reaching 1,000 miles in width. A central valley, 900m deep, cuts into the crest of the ridge and extends its full length. This valley is intersected at nearly right angles by deep fissures which stretch from continent to continent. In some areas these fracture zones provide conduits for the flow of the deep waters from basin to basin. The area of the

Mid-Atlantic Ridge includes the volcanic islands of Ascension, St. Helena, Tristan da Cunha, Gough, and Bouvetoya.

The Walvis Ridge extends in a SW direction from the African coast, in the vicinity of **Cape Frio** (18°26'S., 12°00'E.), to join the Mid-Atlantic Ridge in the latitude of Tristan da Cunha. Several banks lie along this ridge including **Valdivia Bank** (25°55'S., 5°30'E.), which has a least reported depth of 23m, and Wust Seamount, with a reported depth of 22m. Another ridge, the Biafra Ridge, extends SW from the Bay of Biafra. The Angola Basin, with depths of over 5,000m, lies between the Walvis Ridge and the Biafra Ridge. It possesses a generally flat and featureless bottom, except in the N part, where there are a series of seamounts with minimum depths of about 77m.

Cautions

Abnormal Refraction

Extraordinary refraction occurs at times near the coast, especially near the shores of Namibia, which may be sufficient to produce mirages. This refraction is likely to cause errors when taking sights.

Banks and Seamounts

The Cape Rise consists of a series of isolated seamounts and plateaus extending from Protea Seamount, about 150 miles SW of Cape Agulhas, to Andre Seamount, located about 600 miles further SW. The Cape Basin is bounded by the Walvis Ridge, to the NW, and Cape Rise, to the SE and S. The floor of the basin is somewhat irregular in depth. Vema Seamount, with a least depth of 11m, lies about 400 miles WSW of the mouth of the Orange River.

The deep sea bottom normally consists of inorganic red clay or the organic oozes that have been derived from decayed pelagic and benthic organisms.

The continental shelf lying off the W coast of South Africa is generally very narrow, with long stretches being less than 50 miles in width. This shelf disappears between 13°S and 16°S. At the mouths of the Congo River and the Orange River and off Walvis Bay, the shelf has widths of 70 to 100 miles. A sandy bottom predominates along the shelf, often occurring over inshore rocks, while mud is dominant beyond the shelf. The Congo Submarine Canyon crosses the entire shelf, the sediment being muddy in the vicinity of the mouth of the Congo River.

The continental shelf lying along the E coast of South America extends to a maximum width of 270 miles in the vicinity of the **Golfo de San Jorge** (46°00'S., 65°30'W.). To the N, the shelf decreases in width and reaches a minimum of 6 miles off **Salvador** (12°58'S., 38°30'W.). It increases again to a width of 150 miles off the mouth of the Amazon River.

There are numerous off-lying islands, banks, and seamounts along the E coast of South America. **Penedos de Sao Pedre e Sao Paulo** (0°55'N., 29°21'W.), an isolated group of rocks, lies on the SE most of a chain of three seamounts which extend 230 miles NW. This group is also the SW most of a chain of four seamounts that extend 320 miles NE.

Arquipelago de Fernando de Noronha (3°52'S., 32°24'W.) lies at the end of a chain of banks and seamounts, which includes Atol das Rocas. This chain extends 200 miles NE from Cabo de Sao Roque, the NE extremity of the continent.

Numerous banks and dangers, including **Arquipelago dos Abrolhos** (17°58'S., 38°42'W.), extend up to 210 miles offshore between 15°S and 22°S. These dangers culminate in a chain of banks and seamounts extending over 600 miles E and terminating in **Ihas Martin Vaz** (20°31'S., 28°51'W.).

The Bromley Plateau is a wide area with depths of less than 2,000m. It has a minimum depth of 598m and lies 500 to 700 miles SE of **Cabo Frio** (23°01'S., 42°00'W.).

Currents—Bight of Biafra

Solitons (internal waves), which can give rise to extremely rapid current changes of 3 to 4 knots in opposing directions over a distance of 300 to 400m, have been experienced in the Bight of Biafra. This phenomenon can be extremely hazardous to vessels conducting offshore operations.

Fishing

Numerous fishing vessels may be encountered year round off the coast of West Africa. In addition, vessels should navigate with caution when within 3 miles of the shore on account of the existence of small fishing craft. These boats may be anchored or drifting with unlit bottom gear, crayfish traps, marker buoys, or numerous recovery lines.

High Waves—Benguela Current

There is a sharp persistent wave height anomaly in the midst of the Benguela Current. The continued existence of the phenomenon for wave heights greater than 6m is of particular interest. The winds from larger storms which generate those high waves appear to be reinforced by the same mechanisms that reinforce the day-to-day general circulation. Very few other areas of the world ocean show a climatological macroscale wave structure with such sharp regular gradients. Generally, waves are heightened and steepened when winds oppose ocean

surface currents, which is not the case in the Benguela Current wave anomaly, where the waves follow the winds.

The driving mechanism for the steady high winds is the semi-permanent South Atlantic Ocean subtropical high-pressure area. Subtropical highs are extremely persistent features of the general circulation. The E portions of these high-pressure systems are observed to be marked by subsidence, high stability, and steady winds. Augmenting these effects in the case of southwest Africa are the following:

1. A high plateau on the continent effectively cuts off zonal flow and channels the winds along the axis of the Benguela Current. PUB 121, 2nd edition 1988
2. A thermal low over the continent intensifies the pressure gradient along the coastal area and, therefore, intensifies the winds.
3. Coastal upwelling, which results from the longshore (equatorward) component of wind and the Coriolis effect, causes cold sea-surface temperature and, therefore, cold surface air temperature. This cold relatively dense air offshore helps maintain a strong pressure gradient and, therefore, strong winds. The high degree of stability, resulting from cool air near the surface, helps maintain the steady direction of the surface flow.

Kelp

Vessels should not pass over kelp, as it is always a sign of danger unless the spot where it grows has been carefully sounded. The least depth will usually be found within a clear spot in the middle of a thick patch of fixed kelp. Live kelp usually indicates depths of less than 20m.

ODAS Buoys

The term Ocean Data Acquisition System (ODAS) covers a wide range of devices for collecting weather and oceanographic data. However, the devices of most concern to vessels consist of buoy systems which support instruments. These buoy systems may be expected to become more numerous each year and may be found in most oceans.

The buoy systems vary considerably in size and are either moored or free-floating. As far as possible, positions of the former will always be widely promulgated, and, if considered to be of a permanent enough nature, will be charted. In both types, the instruments may be either in the float or attached at any depth beneath it. The buoys are colored yellow and marked ODAS with an identification number. The moored buoys usually display a yellow light, showing a group of five flashes every 20 seconds. ODAS may be encountered in unexpected areas and often in deep water where navigational buoys would not be found. It should be noted that valuable instruments are often suspended beneath these systems or attached to the mooring lines. In some cases, the moorings have been cut loose beneath the buoy by unauthorized persons, with the consequent loss of the most valuable part of the system. The moored buoys may be up to 7.5m in diameter and 2 to 3m in height. The free-floating buoys are usually much smaller, 2m wide, and do not display a light.

Oil rigs

Oil exploration and production rigs, usually exhibiting lights, may be encountered off the West African coast, inside

the 200m curve. Anchors, sometimes buoyed, are placed a considerable distance from rigs and should be given a wide berth.

Piracy

The security of vessels off the West African coast and at some ports is a serious problem. Numerous attacks by gangs of thieves, some of whom were armed, have occurred. These attacks generally took place in the outer roadsteads, but some were carried out on vessels berthed alongside, anchored in inner harbors, or at sea. In addition to the loss of property and injury to crew members, the thieves used naked lights for illumination which created a serious fire risk.

Vessels are further cautioned to be especially alert for pirates in the waters off Cameroon, Democratic Republic of Congo (Zaire), and the island of Bioko (Equatorial Guinea).

The International Maritime Bureau (IMB) of the International Chamber of Commerce has established a Piracy Countermeasures Center at Kuala Lumpur. This center operates for the Southeast Asian Region and is able to receive reports from vessels concerning attacks and advise of danger areas. Piracy warnings are broadcast by the center. For further information, see Malaysia—Cautions.

Rollers—West Coast of Africa

There are few places on Earth that are exposed to such heavy surf as the W coast of Africa and the offshore islands, including Ascension and St. Helena. This surf results from deep swells generated by distant storms. On the lower Guinea and Moroccan coasts it is called "Raz de Maree."

During the S winter, these swells are generated by the circumpolar storms of the "roaring forties" and "whistling fifties." This SW swell extends to the Equator and sometimes across it. It is reinforced by the Southwest Monsoon, creating high seas along the upper Guinea coast, particularly at times of full and changing moon. From Pointe Noire to Mocamedes conditions are worst from July through September; it is dangerous to anchor in open bays where water is shallow. Along the coast of southwest Africa, the rollers frequently set in from the WSW with great fury as a heavy surf pounds the shore. On the W coast of the Province of Good Hope, even in calm weather a SW swell keeps up a constant surf. The rollers on Ascension Island and St. Helena Island break with great violence on leeward shores. Rollers have also been noted in December and January from the NW, triggered by distant storms in the North Atlantic.

Special Warning 120 (Issued 16 November 2001)

1. Due to recent events in the Middle East and the American homeland, U.S. forces worldwide are operating at a heightened state of readiness and taking additional defensive precautions against terrorist and other potential threats. Consequently, all aircraft, surface vessels and subsurface vessels approaching U.S. forces are requested to maintain radio contact with U.S. forces on bridge-to-bridge channel 16, international air distress (121.5 MHz VHF), or MILAR Distress (243 MHz UHF)

2. U.S. forces will exercise appropriate measures in self-defense if warranted by the circumstances. Aircraft, surface vessels, and subsurface vessels approaching U.S. forces will, by making prior contact as described above, help make their

intentions clear and avoid unnecessary initiation of such defensive measures.

3. U.S. forces, especially when operating in confined waters, shall remain mindful of navigational considerations of aircraft, surface vessels, and subsurface vessels in their immediate vicinity.

4. Nothing in this special warning is intended to impede or otherwise interfere with the freedom of navigation or overflight of any vessel or aircraft, or to limit or expand the inherent self-defense right of U.S. forces. This special warning is published solely to advise of the heightened state of readiness of U.S. forces and to request that radio contact be maintained as described above.

Climatology

As the climate of the land depends upon its proximity to the ocean, so is the ocean's climate regulated by land distribution. Since the Southern Hemisphere lacks the large land masses of the Northern Hemisphere, many differences occur in the climate of the oceans.

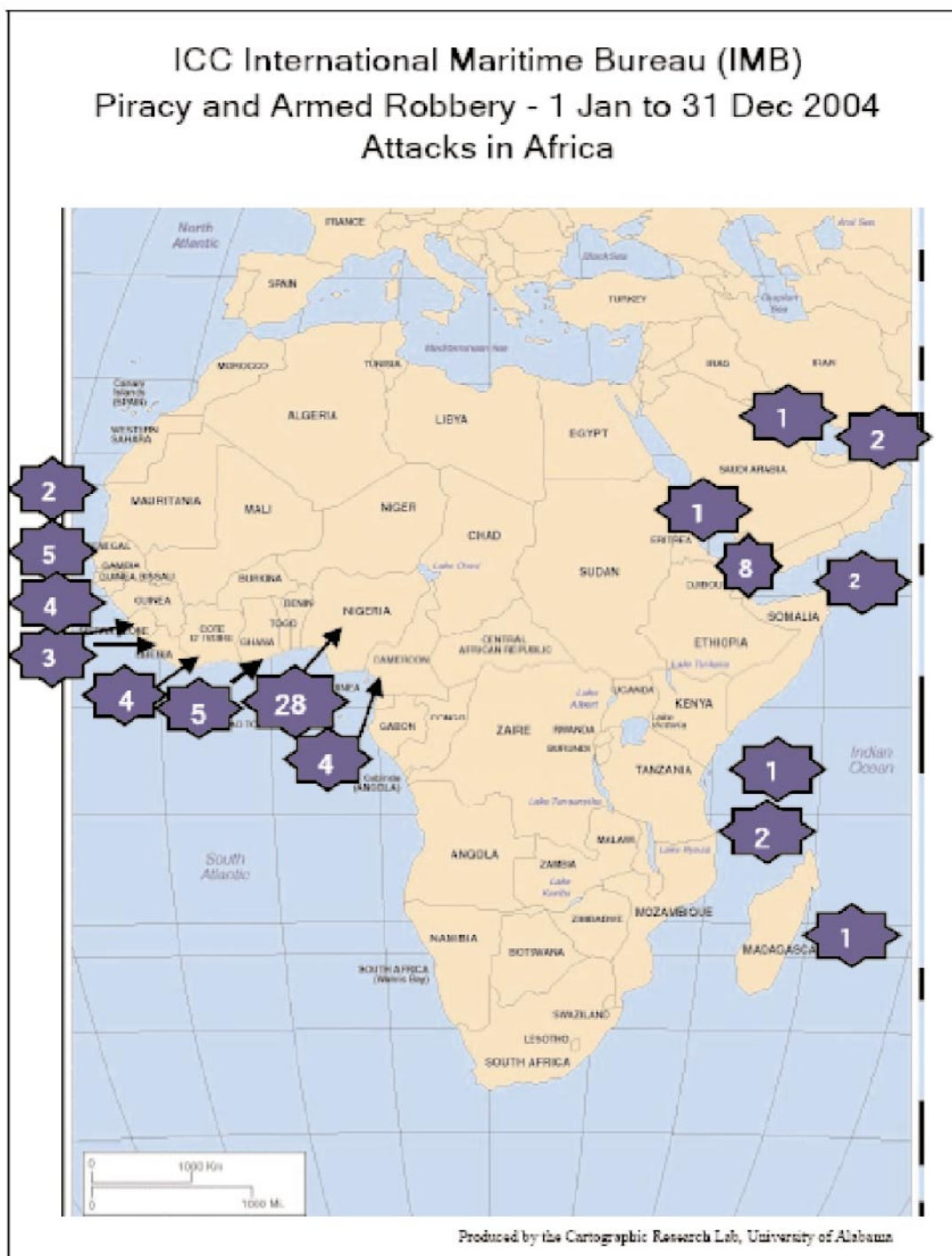
In the South Atlantic Ocean, the result is less variability in climate, both seasonally and latitudinally, than its North Atlantic Ocean counterpart. With no land protection from colder high-latitude seas, the South Atlantic Ocean is generally colder, particularly to the S of 30°. However, Antarctica is the sole source of frigid air and the surrounding oceans quickly modify any outbreaks before they reach the lower latitudes. The lack of land also allows low pressure systems to travel a circumpolar route S of 50°S. The seasons in the Southern Hemisphere are the reverse of those in the Northern Hemisphere.

West Coast of Africa

General.—The South Atlantic Anticyclone is the dominant pressure system in this area. Its influence, which varies seasonally, covers a general range of latitudes from 10°S to 35°S. To the N lies the equatorial trough. The extreme S portion of the area, under the influence of the circumpolar westerlies, is besieged with extra-tropical lows which, with associated frontal systems, influence weather as far N as the S tip of Africa.

The equatorial trough is a belt of low pressure lying between the South Atlantic Anticyclone and North Atlantic Anticyclone. Its most important feature is the Intertropical Convergence Zone (ITCZ), which represents the area of convergence of the Northern Hemisphere's Northeast Trade Winds with the Southern Hemisphere's Southeast Trade Winds. Although the ITCZ is not found at the surface in the Southern Hemisphere, its effects are felt well into the area due to its S slop aloft. Its effect is most evident in the summer (December-March), when the equatorial trough lies just N of the Equator. In the winter (June-September), the equatorial trough moves to near 20°N, and only the portion of the area N of the Equator is affected.

The almost continual W flow S of 35°S restricts most extra-tropical lows poleward of this latitude. The mean track of these small intense cyclones is just below 50°S. The high frequency of these storms which encircle the globe gives rise to the expressions "roaring forties" and "whistling fifties." Occasionally, frontal systems associated with these lows will affect the S

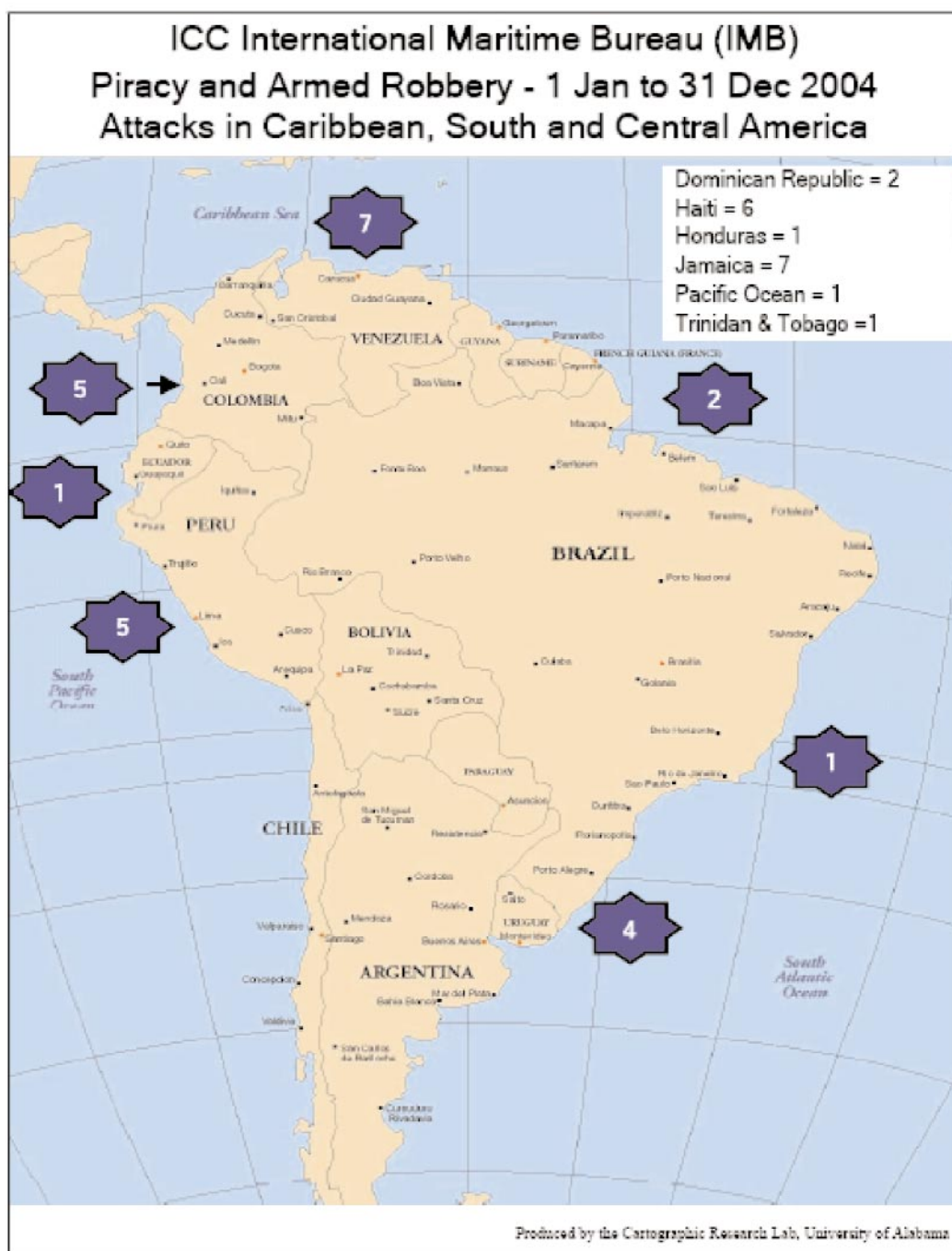


Courtesy of the International Chamber of Commerce International Maritime Bureau—<http://www.icc-ccs.org>

tip of Africa and the waters to the W. These fronts are much the same as experienced in the North Atlantic Ocean. Warm fronts are for the most part ill-defined, with stratiform precipitation and clouds, while the cold front is generally well marked and sometimes violent. The cold front is usually accompanied by heavy overcast skies, rain, strong winds, and often squalls,

with a sharp backing of winds and a rise in pressure with the frontal passage. Frontal activity can be expected as far N as 25°S.

Winds.—The most significant of the local wind regimes along the coast is the Southwest Monsoon. This large-scale sea breeze occurs in the N sections over the Gulf of Guinea and ad-



Courtesy of the International Chamber of Commerce International Maritime Bureau—<http://www.icc-ccs.org>

jacent coasts extending 100 to 200 miles inland. It is strongest during the northern summer (June-August), but is prevalent year-round. The monsoon is a deflection of the Southeast Trade Winds toward the heated continental interior. Its influence is felt to about 10°S and acts very much like the land-sea breeze regime. At Douala, for example, while SW winds are prevalent

during the afternoon, their frequency drops to 5 per cent during the early morning hours.

The harmattan, a hot dry wind of continental origin from the NE quadrant, reaches the shores of the Gulf of Guinea and extends seaward. It is prevalent from December through early March and is usually laden with fine dust which can seriously

impair visibility in the form of haze. This may occur at times when other than a NE wind is blowing, since the harmattan may be forced aloft by the Southwest Monsoon, but the dust will still settle out. The harmattan is found mainly from Cape Palmas to Douala.

From Luanda to Alexander Bay the land-sea breeze regime is part of the daily weather throughout the year. During the day, the land heats faster than the water, resulting in an onshore circulation known as the sea breeze. At night, the land cools faster than the water, resulting in an offshore circulation known as the land breeze. Along this coast from late morning to about 2100, a SW or W breeze is prevalent. The land breeze begins from the E or SE around midnight and becomes light and variable by morning.

South of Walvisbaai to Cape Town, land and sea breezes are a part of the seasonal weather picture. The sea breeze is most prevalent during the summer (December-March), while the land breeze is most prevalent during the winter (June-September).

Although the land-sea breeze regime produces wind speeds which average from 8 to 12 knots or less, the section of the coast from Walvisbaai to Alexander Bay occasionally experiences gale-force winds from this effect combined with prevailing winds. The sea breeze is capable of attaining speeds of 40 to 50 knots along this stretch of coast, particularly from October to March.

The African coast from southern Angola S is subject to berg (foehn-type) winds, which blow down from inland plateaus at nearly right angles to the coast. These hot dry winds usually come from an E or NE direction. They are gusty and sometimes strong, reaching 20 knots or more. Berg winds usually last for a few hours, but can continue for several days at a time. They generally do not extend beyond coastal waters. Although most frequent in spring and fall, they can occur any season.

A local wind, occurring from the Congo River N, is known as a tornado. This should not be confused with the phenomena known by the same name which occurs in the United States. African tornadoes are violent wind squalls often accompanying thunderstorms. They are most frequent from January to early May and from September to November. Tornadoes can originate either on land and move seaward or over water and move onshore.

Indication of the approach of a tornado is a dark bank of cumulonimbus clouds, with tops reaching 6,100m or more. The barometer gives no warning. At the base of the cloud bank there is usually a roll of low cloud. The atmosphere is still and oppressive; the line approaches at about 10 to 25 knots. As the roll of low cloud passes overhead, there is a sudden wind squall with gusts to 50 knots or more; a few minutes later rain begins, accompanied by thunder and lightning. The rain is often heavy and may reduce visibility to practically zero. The wind is usually less than 1 hour in duration, but the rain may continue longer. These tornadoes may be local or may have the characteristics of a squall line 100 miles or more long. Occasionally the tornado occurs without rain, known appropriately as a dry tornado.

Gales are infrequent over most of the area. Along the coast, N of the Equator, they occur on about 1 to 6 days annually. From the Equator to Walvisbaai, gales occur less than 1 day per year. At Walvisbaai, gales can be expected on about 14 days annually; 7 of these days occur in October. South into the

subtropics, gale frequencies increase; Cape Town records an annual average of about 22 days, with a maximum in the summer from December to March.

Climate.—The African coast is influenced by a variety of climatic regimes. The South Atlantic Anticyclones, the heated continental interior, the extratropical storms are not found in these waters. Because of its broad latitudinal extent this is an area of extremes. From the equatorial doldrums to the “roaring forties” and “whistling fifties,” from the soaking monsoonal rains of the Cameroon coast to the arid deserts of Namibia, the variety is endless. However, while there is a great deal of variety, its sameness can be just as striking. For example, along the coast it is just as possible to sail for days in rain and drizzle as it is to sail for days without seeing a cloud. Ironically, coastal Namibia, mainly arid desert, has an average relative humidity as high as most equatorial regions.

Precipitation.—The W coast of Africa experiences a wide variation in precipitation amounts and is under the influence of several types of rainfall regimes. For example, Debenja averages over 10,160mm annually, while Walvisbaai has a yearly average of 10.7mm.

The coastline N of the Equator is under the influence of an equatorial regime and a monsoonal regime. In the equatorial type, there is usually two rainfall maxima occurring shortly after the equinoxes (spring and fall), while the monsoon regime results in a strong summer maximum. The combination of these two regimes results in an extended rainy season with a summer maximum. Douala, with an average annual rainfall of 4,064mm, experiences a monthly average of 152mm inches or more from March through November, reaching a peak of 737mm in July. Precipitation in this area falls on more than 160 days annually; Douala averages 205 precipitation days per year. West of Douala, rainfall decreases and the equatorial regime is prevalent. For example, Accra has an annual average of 737mm of rain over an average of 52 days.

From Libreville S to Luanda, annual precipitation totals decrease. While Libreville records an annual average of about 2,794mm, this falls off to about 1,270mm at Point-Noire and diminishes to 406mm annually at Luanda. This section of the coast is under the influence of the equatorial rainfall regime, resulting in spring and autumn maxima. The maxima usually occur in early fall (February or March) and late spring (October or November). The dry season extends from June through August when monthly averages drop below 35.5mm. A “little dry season” or secondary minimum occurs in midsummer (December-January).

Annual rainfall decreases rapidly S of Luanda; Mocamedes receives an average of 50mm, while Walvisbaai averages 10.7mm. The coastal strip from the ever-narrowing coastal plain of Angola along the barren beaches of Namibia is a bleak desert receiving moisture mainly in the form of an occasional heavy dew. Sparse though precipitation may be, the area from 10°S to just N of the Orange River has a rainfall maximum in summer or shortly after the sun has reached the zenith. The dry season occurs during winter. Rain occurs on about 13 days annually at Mocamedes and 4 days at Walvisbaai.

From Alexander Bay to Cape Town, rainfall amounts increase from an annual average total of 44.7mm at Alexander Bay to about 635mm at Cape Town. Summer is the dry season and winter is the rainy season. The average number of rainy

days ranges from about 16 annually in the Alexander Bay-Port Nolloth area to 100 in the Cape Town area.

Precipitation over the island regions varies quite like the coastal areas. Heaviest rainfall occurs in the equatorial regions, decreasing to scanty amounts in the tropics, and then increasing again in the subtropics.

North of 5°S, the frequency of precipitation reaches a maximum in spring and fall. At Ascension Island (07°55'S., 14°24'W.), average annual precipitation is 114mm, much less than coastal stations at this latitude. Maximum rainfall here occurs in April. South of 20°S to about 40°S, precipitation is most likely during the winter. Tristan da Cunha (37°03'S., 12°19'W.) has an annual average rainfall of 1,727mm, reaching a maximum in August. Rain falls on an average of 185 days annually.

Thunderstorms along the coast are most common from Cameroon to the Congo, occurring on about 100 to 150 days a year. Many are associated with tornadoes. They usually approach the coast from the interior, frequently toward evening. These storms are often violent and accompanied by heavy rain. Farther S, thunderstorms are less frequent and often of shorter duration. At Luanda, the mean annual average is 20 days; they are most frequent in April and rare from June through August. On the coasts of southern Angola and Namibia, thunderstorms are infrequent. The frequency increases toward the Cape Town area, but the average number of days per month from April through June, when they are most frequent, is less than 2.

Cloud Cover.—Cloudiness, similar to rainfall, decreases S along the coastal sections of this area. From an annual average of 7 oktas at Douala cloudiness diminishes to less than 4 oktas at Walvisbaai, Port Nolloth and Cape Town. West of Douala, the average cloudiness decreases to 6 oktas at Calabar and to near 5 oktas at Cape Palmas.

In the Gulf of Guinea and along the coast from Cape Palmas to Libreville, the sun is hardly seen from July through September; coastal scenery, along with inland mountain ranges, is usually shrouded in a gray mist. At Douala, for example, overcast skies prevail on 20 to 23 days per month during this period. From December through February, there is a decrease in afternoon cloudiness, while at night average cloudiness drops to about 4 oktas. South of Libreville, coastal areas exhibit a characteristic diurnal variation in cloudiness. Early morning cloud cover remains high. However, afternoon cloud cover begins to taper off. Seasonal variations show minimum cloud cover from about May through July, while cloudiness is most extensive from about October through March. From Mocamedes S, morning as well as afternoon cloudiness begins to diminish. From Port Nolloth to Cape Town, there is no pronounced seasonal variation, except for a slight increase in winter cloud cover locally at Cape Town. This is a reflection of the N shift of cyclonic activity.

Temperature.—Temperature is principally controlled by the incoming solar radiation and is therefore dependent to a large degree upon latitude. It is also influenced by the nature of the Earth's surface, the latitude, and the prevailing winds. In the tropical and subtropical regions of this area, average annual temperatures decrease very little with latitude. The average temperature difference between the Equator and 30°S is only about 9.5°C compared to a 20.0°C difference between 30°S and 60°S. This temperature decrease is greatest in the winter. For example, the average temperature difference between Libre-

ville and Cape Town is 6.1°C in January and 12.2°C in July. The annual range of temperatures also varies with latitude. Near the Equator the range is small, from 2.2 to 3.3°C, increasing to 4.4 to 6.6°C from 10°S to 30°S.

Along the coast from Cape Palmas to Luanda, the warmest months are February through April; the coldest months are July and August. Daytime temperatures of 29.4° to 32.2°C, with nighttime readings in the low-20s (°C), are common from November through May. From June through September, average maximums range from the low-20s to upper-20s (°C), and average minimums range from the upper teens to low 20s (°C). Extreme temperatures are generally 3.3° to 5.5°C above or below the average maximum or minimum. For instance, none of the major ports from Douala to Luanda have ever recorded a 37.8°C reading.

South of 10°S temperatures begin to decrease more rapidly, show more daily variability, and exhibit more pronounced seasonal tendencies. There is definite summertime (December-March) maxima and wintertime (June-September) minima. At Mocamedes, average wintertime maximums around 20°C warm to the upper-20s (°C) during the summer, while minimums range from the low teens to about 20°C. From 20°S to 30°S, upwelling of the cold Benguela Current plays an important part in determining coastal temperatures. Port Nolloth, for example, has an average annual temperature of 13.9°C, about 3°C cooler than Cape Town, which is much farther S. In the summer, Port Nolloth is generally 5.5° to 8.4°C cooler than Cape Town. Extreme temperatures along the coast have a wide range. Berg winds, from the interior, account for some incredibly hot days. In April at Mocamedes, a normal maximum of 28.3°C gave way to an extreme of 38.9°C. Walvisbaai, normally with a 23.3°C maximum in May, recorded 40.0°C. Port Nolloth's temperature reached 40.6°C one September day; the normal maximum is 17.2°C.

Humidity.—In general, relative humidity, at a maximum near the Equator, decreases S, reaching a minimum near the subtropical high, then increases again toward the higher latitudes. The increase in relative humidity between 30°S and 60°S is a result of the rapid decrease in temperature. In equatorial regions, maximum relative humidities usually occur during the summer, with minimum values in the winter. South of Luanda, where the temperatures show a marked seasonal variation, relative humidities usually exhibit wintertime maxima and summertime minima. The diurnal variation of relative humidity is usually opposite to that of temperature. The maximum occurs in the early morning hours; the minimum occurs in the early afternoon. A sea breeze or island climate may raise the afternoon minimum or wipe it out entirely.

Along the southern Namibia/northern South Africa coast, where relative humidities are expected to be a minimum, the cold Benguela Current raises relative humidities to the level of equatorial regions. From Walvisbaai to Port Nolloth, maximum values are in the 90 per cent bracket from spring to fall, exhibiting an equatorial summertime maximum.

The islands and exposed coastal ports exhibit very little annual or diurnal variation. The influence of the ocean has a stabilizing effect on relative humidity much the same as it does on temperature. Quite often relative humidity is highest in the afternoon, since there is relatively little change in temperature but the sea breeze increases moisture. Ascension Island, for example, has an annual average morning relative humidity of

66 per cent, which rises to 70 per cent in the afternoon. Luanda, an exposed coastal port, also has only an average 4 per cent spread between average morning and afternoon humidities.

Visibility.—Visibility in this region is most often reduced by fog, mist, haze, and drizzle. Precipitation also reduces visibility, but usually for just a brief period. Fog is usually present when the visibility is below 0.5 mile for sustained periods. The other factors usually reduce visibility to 2 to 3 miles, although they will occasionally bring it down below 1 mile.

Along the Gulf of Guinea coast, in the Bight of Biafra, and along the Cameroon coast, visibility below 1 mile occurs on about 30 to 40 days annually and is most common from October through February (the dry season). During the dry season, drizzle and mist are prevalent and visibilities are frequently reduced by dust or haze from the harmattan from December to early March. Fog, often present during the early morning hours, will quite frequently lift by afternoon during the dry season. Although not as prevalent in the rainy season (May–October), fog and mist are more persistent, often hanging on for several days at a time. Along the Gabon coast, fog is extremely rare, occurring only about 2 to 5 days annually.

From Point Noire to Mocamedes, phenomena known as the “cacimbo” and “neveiro” are the most frequent causes of poor visibility. The cacimbo is a uniform layer of low stratus cloud from which fine drizzle is falling, while the neveiro is similar but with no precipitation; the stratus near the surface results in fog. This wet mist or fog forms over the cold Benguela Current much in the same manner, but to a lesser degree, as the fog banks along the Newfoundland coast form over the cold Labrador Current in North America. This low stratus and fog drift in over the coastal areas during the night and early morning hours. By late morning, the stratus has lifted and visibility has improved. This effect is most pronounced at Luanda, where fog can be expected on about 40 days annually; 33 of these days occur from May through September.

These phenomena persist along the Namibia coast, where Walvisbaai experiences a total of 59 days of fog per year. From May through August, visibility may occasionally be reduced by haze from berg winds, as well as fog from the neveiro. Farther S, fall is the worst time of the year, but fog does occur in every month. In this region fog is most likely to be of a frontal or advective type.

East Coast of South America

General.—Throughout the year, a semipermanent subtropical anticyclone influences the weather along the E coast of South America. A broad belt of low pressure to the S is also a year-round influence, while a thermal low develops over the continent in the summer. To the N lies the equatorial belt of low pressure and the Intertropical Convergence Zone (ITCZ).

The South Atlantic Anticyclone, like the sun, is farthest N during the winter, when its axis reaches a mean latitude of 25°N. It is strongest during this season, with an average central pressure around 1023 mb. This high moves S and weakens in the summer months; by November it is about 30°S, and by January, the average central pressure is near 1015 mb.

The circumpolar zone S of 40°S is a region where cold antarctic and warm tropical air masses are transformed by the circulation around migratory lows and highs. During the winter there are successive passages of southeast-moving cyclones in

the Bellingshausen Sea region along the Antarctic front. Each series of lows is followed by an outbreak of polar continental air from Antarctica. These cold anticyclones sometimes invade the Patagonia region, but are usually displaced into the Atlantic Ocean.

Along the Pacific polar front during the winter, cyclones form in the mid-Pacific and move SE, generally reaching the continent as occluded lows. The resultant precipitation over southern Chile is generally the warm front occlusion type. The passage of these cyclones over the Andes brings little precipitation to the E coast of Argentina due to the downslope motion. However, occluded fronts that cross the mountains often trigger frontogenesis on the E coast, followed by the development of a new cyclone in the Rio de la Plata area. This is particularly prevalent in autumn when deep lows form in this area.

Most bad weather along the E coast areas N of Montevideo is not caused by the passage of well-developed cyclones, but by intrusions of cold air into the region behind the cold fronts. In contrast to North America and Europe, where anticyclones are usually associated with fair settled weather, and cyclones are the “weather producers,” in South America relatively small, vigorous, and fast-moving anticyclones are responsible for much of the disturbed weather. Cold fronts are followed by these highs, which may cause strong winds as far N as about 30°S, where the highs usually slow down and later become absorbed into the semipermanent South Atlantic Anticyclone.

The ITCZ is located in the N of the area from July to October, then moves slowly S to the delta of the Amazon River and reaches to San Luis do Maranhao by March, then slowly moves N again. Continental heating during summer (January) results in a semipermanent heat low over southern Brazil.

The regular diurnal pressure variation is prominent in the undisturbed tropical regions. On the N coast of Brazil, the average daily range exceeds 3mb, reaching almost 4mb in the dry season; in Rio de la Plata it is between 2 and 3mb and is sometimes obscured by larger irregular changes associated with traveling highs and lows.

Winds.—The coastal wind regime is quite intricate and is complicated largely by topography. Exposed coastal ports may be subject to the same influences as the open sea, while sheltered ports may never experience gales and winds can be deflected by 180°. Narrow channels and passages, however, can create dangerous squalls with a funneling effect. The rapid heating and cooling of land during the summer months often sets up a land-sea breeze regime, with an onshore wind during the afternoon, which blows offshore in the evening.

The general wind distribution in the subtropical and tropical portions of this region is governed by the predominant South Atlantic Anticyclone. The easternmost portions of the Brazilian coast are under the influence of the Southeast Trade Winds in all seasons. The area affected is limited in summer to between about 3°S and 13°S latitudes; in winter (July) the Southeast Trade Winds spread both N and S to the coast N of about Rio de Janeiro.

As summer approaches, the SE winds are replaced gradually by NE winds (the trade winds of the North Atlantic Ocean) along the N coast of Brazil. The Northeast Trade Winds and the Southeast Trade Winds approach each other in the ITCZ. This area migrates in position according to season. In the southern winter, it lies to the N of this region, but it moves S as summer approaches, reaching Cabo Orange at the end of

November. During the next 2 to 3 months, the Northeast Trade Winds extend E along the coast to about Parnaíba.

Farther S along the Brazilian, Uruguayan, and Argentine coasts, another belt of weakly prevailing NE winds is present during most of the year. In autumn and winter (May-August), this belt extends only over the area from about 20°S to 30°S, but in summer it expands to S of 35°S near the coast. Although NE winds are frequent over this region, they are not predominant at any season. Wind directions, in fact, could better be classified as variable during most of the year. This is in contrast to the much higher persistence in wind direction found in the two trade wind belts farther N and results from the intrusions of polar air masses into this area.

Land and sea breeze effects are well developed during much of the year along this whole coastline. These are fair weather phenomena, so they are felt most intensely when weather is fair and pressure gradients are small; these conditions are most frequent in the tropics and subtropics. South of Rio de Janeiro, the land and sea breezes become less prevalent as the mean wind force and unsettled weather conditions increase.

On the NE coast, the sea breeze intensifies the NE wind during the hot afternoons; where southeasterly winds are prevalent, the sea breeze acts to deflect the wind toward the NE in the afternoon. Night land breezes are generally weaker and much of the time only serve to reduce the speed of the prevailing E winds.

From the mouth of the Rio de la Plata to Bahia Blanca, winds are variable. This area lies within a transitional zone, between two subtropical highs and on the N border of the circumpolar westerlies. The pressure gradient is slack and results in light winds, except with cyclone and frontal passages. This is reflected in average wind speeds of 4 to 6 knots along this coast. There are a few prevalent features, however. From April through August, when the South Atlantic Anticyclone is strongest, N to NW winds are common. During the spring and summer months from La Plata to Mar del Plata, E and NE winds prevail.

In the La Plata area, a phenomenon occurs similar to the squall line in the Northern Hemisphere. Known as a "pampero," it often accompanies a cold frontal passage, bringing strong gusty W to S winds. Shortly before its arrival, calm winds may prevail and there is often a roll of cumulus clouds to the SW, followed by heavy cumulonimbus which gradually cover the whole sky. As the clouds move overhead, there is a violent wind squall from the W or S, followed by torrential rains and often thunder and lightning. The duration is usually less than 2 hours. The main hazard to navigation is the sudden onset of a gusty wind which can reach more than 70 knots. These storms, while generally experienced along the coast, can be felt 400 miles seaward. Pamperos are most common in the winter. While summer pamperos are of shorter duration, they are usually more sudden and violent. Although 80 to 100 cold fronts move through this area each year, only about 20 of them are accompanied by a pampero.

Along the stretch of coast, from about La Plata to Bahia Blanca, is another wind phenomenon recognized as a danger to navigation. Known locally as the "susestada," it is a strong SE gale accompanied by rough seas, rain, and poor visibilities. These usually occur when a low moving SE across Uruguay deepens near the mouth of the Rio de la Plata. Fortunately, these dangerous storms, which are similar to lows that inten-

sify off Cape Hatteras in the United States, occur only about five to eight times per year.

Gale force winds are infrequent along the N coast of Argentina. They occur on the average about 5 per cent of the time. The frequency increases S; Bahia Blanca experiences winds of force 7 or greater on about 4 to 6 days per month. Spring and winter are the seasons with maximum gale frequencies coinciding with the high frequency of frontal passages.

There is a definite land-sea breeze regime in this area during the summer (December-March). It is particularly noticeable during periods of clear weather, when pressure gradients are slack. The sea breeze usually develops in the afternoon from an E or SE direction. In the evening, it will often shift to the NE before dying down. A light N to NW wind during the night gives way to a NW to W land breeze in the morning hours.

South of Bahia Blanca to Cape Horn, including the Falkland Islands, W winds prevail, followed closely by NW and SW winds. Since a good portion of the coast lies within the zone of the "roaring forties" mean wind speeds are high. They generally increase with increasing latitude, from an annual mean of around 8 knots just S of Bahia Blanca to 15 to 17 knots at exposed S coastal ports, such as Isla de los Estados and Port Stanley. At protected S ports, average wind speeds drop considerably; at Punta Arenas in the Straits of Magellan, the annual mean wind speed is 10 knots. At Cumberland Bay, a well-sheltered port on the E shore of South Georgia Island, the annual average wind speed is 4.5 knots, compared to an average of more than 18 knots in the surrounding seas. Most of the Patagonian-Tierra Del Fuego coast experiences highest average winds in late summer along the N coast and early spring along the S coast. Exposed ports, such as Isla de los Estados, experience a winter maximum and slight summer minimum, like the open ocean areas in this region.

Along the Rio Negro coast, the land-sea breeze regime is noticeable during the summer on clear and otherwise windless days. The E or onshore wind at Patagones, for example, increases from 2 per cent in the winter to 11 per cent in the summer. Farther S, as the gradient for W winds intensifies, the effect of the sea breeze becomes one of reducing the strength of the afternoon W wind.

Gales along the Patagonian-Tierra del Fuego coast, although more frequent than along the coast to the N, are less frequent than over adjacent open waters. Gales become more frequent with increasing latitude and are more prevalent in the winter months. From Bahia Blanca to the Gulf of San Jorge, gales occur less than 5 per cent of the time from September to January and from 5 to 10 per cent of the time the rest of the year. South of this region, gale frequencies increase rapidly. Along the Tierra del Fuego coast and in the Falkland Islands, gales occur 20 to 30 per cent of the time during the winter (June-September) and 10 to 20 per cent of the time during the summer (December-March). Gales are most prevalent with SW winds, but are also common with NW and W winds. Gale frequencies are quite high in the seas surrounding South Georgia Island, but in the sheltered waters of Cumberland Bay, gales occur on less than 4 days per year.

The Straits of Magellan offer a completely local problem for both wind direction and speed. In the many countless passages the wind follows the run of the passage, having only two possible directions in any one location. This is particularly true in the narrow passages W of Cape Froward. Sustained gales are

seldom encountered except in the widest passages. Punta Arenas experiences gales on about 10 days annually. This frequency increases E to Punta Dungeness, where they occur on about 35 days per year. The funneling effect of narrow passages and surrounding mountains W of Punta Arenas causes violent unpredictable squalls known as williwaws. The williwaw depends largely upon the existence of strong winds at sea or aloft. As these winds strike the rugged mountains of the Chilean Archipelago, eddies of varying duration and intensity develop. The result is squalls, with wind gusts sometimes exceeding 100 knots, from varying directions. The occurrence of one or more of the squalls from one direction is no assurance that the next one might not come from an entirely different direction. Even in a sheltered inlet where the general slope of the land is fairly regular, the wind often changes speed and direction from minute to minute. These squalls are even more dangerous in the presence of rain, sleet, or snow and can seriously impair visibility. Since the williwaw is extremely local, an open passage a few miles from a narrow one may afford much better protection.

The rugged sparsely-populated coast of southern Chile is a stormy windy region where, in many places, trees are stunted and indicate the direction of the prevailing wind by their distorted shapes, much like trees high on a mountain which lean with the prevailing wind.

The coastline is under the influence of migratory cyclones, as well as the South Pacific Anticyclone, resulting in variable wind directions and high wind speeds. West winds still prevail however, occurring about 50 per cent of the time in all seasons; NW through SW winds occur nearly 75 per cent of the time. Average wind speeds increase poleward and exposed coastal sections S of the Gulf of Penas experience average speeds of 14 to 18 knots year-round. North to the Gulf of Corcovado, average annual wind speeds decrease to about 8 to 12 knots.

The frequency of gales along this coast is high but widely variable, depending on the exposure. The frequency in exposed coastal waters is well represented by Grupo Evangelistas, which consists of four rugged barren rocks. This exposed cluster is subjected to gale force winds on about 70 days annually. Gales here are the least frequent from October through January, when the average is 4 to 5 days per month, increasing to 6 to 7 days per month for the balance of the year. Poleward of the Gulf of Corcovado, gale frequencies range from 10 per cent to more than 20 per cent in the winter and from less than 5 per cent to more than 10 per cent in the summer. Gales are most common with NW winds brought on by cyclones moving SE in the Pacific and with SW winds which follow cold frontal passages.

Climate.—The entire E coast of South America is especially favored in regard to climatic conditions by its location outside any main storm track. The primary path of storms in the South Atlantic Ocean extends SE from Cape Horn. Local bad weather does occur on the E coast at times. It is associated with cold fronts, small high-pressure areas, and low-pressure troughs, but the region is completely free of the tropical cyclones so destructive in other tropical and subtropical regions of the world, and of the larger middle latitude disturbances which occasionally extend into the subtropics elsewhere.

Over much of the Guianas and the N coast of Brazil, a tropical climate prevails, with uniformly high temperatures, high humidity, and heavy rainfall throughout the year. Between

Natal and Montevideo, weather is controlled during most of the year by semipermanent subtropical high pressure centered over E and central South Atlantic. The principal features of this subtropical area are the relative mildness and equability of the weather.

Southern South America, tapering to Cape Horn, relies almost entirely on surrounding seas for its climate. Unlike North America and Eurasia, South America is never invaded by extremely cold polar continental air masses. On the other hand, S of 40°S, summer heating is not very pronounced. Consequently, southern South America lacks the continental temperate climate that characterizes Northern Hemisphere land masses. Topographic and oceanographic features are important factors in the climate of southern South America. The W coast, with its lofty mountains rising directly out of the sea experiences a contrasting climate to the E coast, with its seaward sloping plains. The S end of the Andes, although less magnificent than the N chain, still exerts considerable influence on east-moving weather systems.

Precipitation.—A large portion of eastern South America is subject to heavy rainfall. Brazil has, over certain areas chiefly in the Amazon Valley, rainfall higher than any land area of comparable size. More than 2,032mm per year are recorded in the upper reaches of the Amazon and along the coasts of Para and Maranhao N into the Guianas, where Cayenne has an average of almost 3,800mm per year. Rainfall in this N area is seasonal, with the wet period lasting from December or January to May or June (extending into July in coastal sections of the Guianas); the driest months are from September to November.

Farther S, from Cape San Roque to the Bahia area, about 60 to 70 per cent of the annual total of 1,500 to 1,800mm falls from April to August. Around Rio de Janeiro the wet season is again summer, and the dry season is winter, with the annual total near 1,000mm. In the region from southern Brazil S to Rio de la Plata, the distribution of rainfall is fairly regular, with amounts between 1,000 and 1,500mm per year, becoming slightly less in the S portion.

Snowfall is not of regular occurrence over the region. However, on the coast it has occurred as far N as Rio de Janeiro in a cold air outbreak moving far to the N. The State of Santa Catarina is about the farthest N that measurable amounts have fallen.

Along the coast of Argentina, from Bahia Blanca N, annual precipitation ranges from 508 to 762mm on about 70 days per year. There is little seasonal variation in this region as monthly averages are generally 25 to 75mm, with slight spring and autumn maximums. South of Bahia Blanca, precipitation amounts fall off sharply; Puerto Madryn has an annual average of about 178mm. Rainfall amounts remain scanty, with no seasonal variability S to Puerto Gallegos. On the E coast of Tierra del Fuego, precipitation averages between 508 and 635mm annually, with a rainy season from December through June; averages of 25 to 76mm occur during these months. Along this coast, precipitation falls on about 250 days per year, spread out evenly on about 18 to 23 days per month.

The Falkland Islands and their dependencies experience variable precipitation amounts. Port Stanley receives 686mm annually on about 226 days. This is probably less than the more exposed W coasts. At Cumberland Bay, also a sheltered E coast port, an annual average of 1,320mm falls on 154 days.

In the Falkland Islands, there is little seasonal variability, while on South Georgia Island, maximum amounts occur from March through August.

Snow is rare along the Argentine coast N of Tierra del Fuego. Around the E entrance to the Magellan Straits it occurs on about 6 days annually; this increases to about 50 days per year along the Tierra del Fuego coast. Seaward of the Argentine coast, snow occurs generally less than 1 per cent of the time N of 50°S. From 50°S to 55°S, it is observed about 1 per cent of the time near shore, increasing to 6 per cent seaward. In the open waters E of the Falkland Islands, snow occurs on about 22 per cent of observations in midwinter, while W of the islands, it occurs from 5 to 13 per cent of the time.

Snow is more prevalent in the Atlantic islands than on the mainland. At Port Stanley, which is sheltered, snow falls on about 54 days annually and can occur in any month except January and February, usually melting quickly in all seasons. On South Georgia Island, snow is frequent, even in midsummer, although it melts rapidly during this season. During the winter, there is heavy and frequent snowfall, occurring more than 30 per cent of the time; the land is usually covered to a depth of 1.8 to 3.1m, except in exposed areas where it is swept away by the wind.

In the region of the ITCZ thunderstorms are frequent and are often accompanied by torrential downpours of up to 250mm in 24 hours. Northwest of Sao Luis, they occur on about 70 to 80 days annually, with most in the period May through December. Between Parnaiba and Carvelas, thunderstorms are infrequent, occurring on less than 20 days a year. Activity picks up again to the S. Between Rio de Janeiro and Montevideo expect about 35 days of thunderstorms, mostly between October and March. Near the mouth of the Rio de la Plata, they occur on about 50 days annually and are most frequent from October through March, when the average is about 6 to 8 days per month. These thunderstorms are often associated with cold front activity, particularly with the pamperos. Thunderstorm activity rapidly decreases S. Bahia Blanca experiences only about 16 thunderstorm days annually; its highest frequency, about 2 days per month, occurs from October through March. From 45°S to 55°S, both along the coast and seaward, thunderstorm activity is negligible.

Cloud Cover.—Days are mostly partly cloudy in the region of the ITCZ. Skies are usually cloudiest during the afternoon. Seasonal variations are similar to those of rainfall; average cloud cover ranges from 4 to 6 oktas.

Farther S, cloudiness increases with increasing latitude and also increases seaward. Cloud amounts usually reach a maximum in winter; however, S of 50°S there is little seasonal variation. Cloudiness is most extensive in the early morning hours and reaches a minimum around midnight.

Annual averages range from about 4.5 oktas along the N coasts to between 5 and 6 oktas in the S. From 40°S to 50°S, maximum cloudiness occurs from May through December, both along the coast and seaward. South of 50°S to the Straits of Magellan, cloudiness becomes more uniform, but a slight maximum is exhibited from November through March. Uniform cloudiness is present S of this area, with very little seasonal variation. Overcast conditions also become more prevalent S. The average annual number of days with overcast skies ranges from 50 along the E coast of Brazil and Argentina to more than 175 days along the Tierra del Fuego coast. North

of 50°S there exists a winter maximum in overcast conditions, but to the S there is uniform distribution.

The southern oceans, S of 55°S, are marked by a uniform grayness. There is little variation either seasonal or latitudinally, and 6 to 7 oktas is the average condition year-round.

Port Stanley and Cumberland Bay experience between 150 and 160 days of overcast skies annually, while clear conditions occur on 9 to 12 days per year.

Temperature.—North of about 15°S the mean temperature is very uniform, averaging between 25.6°C and 27.2°C. At Georgetown the average daily maximum is only between 28.9°C and 30.6°C, and the average daily minimum between 23.3°C and 24.4°C, throughout the year. At Salvador the mean daily maximum reaches 30.0°C from January through March, and the mean daily minimum is 20.6°C in July and August.

Farther S average temperatures decrease and the range from maximum to minimum increases. At Rio de Janeiro, the mean daily maximum is 28.3°C in February, while the mean daily minimum is 18.3°C in July. At Buenos Aires, the range is much greater.

Average winter temperatures along the Argentine coast range from the upper single digits (°C) near La Plata to the lower single digits (°C) around Cape Horn. Average daily maximums in the lower-teens (°C) extend as far S as Camorones, as do minimums above freezing (°C). Temperature readings below freezing (°C) become frequent poleward of 45°S. South of 50°S to Cape Horn, average daytime temperatures are in the low single digits (°C), while nighttime readings are around the freezing mark (°C). Freezing temperatures (°C) have occurred along the entire coast, with extreme minimum temperatures varying from just below freezing (°C) in the N to -21.1°C at Ushuaia. In the Falkland Islands, temperatures are even milder than on the mainland. Port Stanley has a midwinter average maximum of 4.4°C. Cumberland Bay on South Georgia Island has an average mid-winter maximum of 1.1°C and an average minimum of -5.0°C.

Average summer temperatures along the coast of Argentina are about 14°C higher than average winter temperatures in the N, and about 8°C higher along the S coast. Average daily maximum temperatures are in the upper-20s (°C) as far S as Puerto Madryn, in the mid-20s (°C) to Rio Gallegos, and in the upper-teens (°C) to the Tierra del Fuego coast. Average minimums range from the mid-teens (°C) in the N to the mid-single digits (°C) near Cape Horn. Extreme maximum temperatures of 37.8°C or more have been recorded as far S as Deseado. There is an average maximum in the low-teens (°C) and an average minimum in the mid-single digits (°C) at Port Stanley, while at Cumberland Bay average maximums are in the upper-single digits (°C), with average minimums in the low-single digits (°C).

Humidity.—In the tropics, relative humidities are high throughout the year, particularly in the mornings. Humidities are lowest in the afternoon when temperatures are at a peak. These lower values are in the 70 per cent range compared to the 90 per cent range in the morning. Seasonally, lowest humidities occur from August through November, when temperatures are often at their peak.

Along the coast S of Natal, humidities are less and there are more apparent seasonal variations. This is most noticeable at the more continental locations, where relative humidities are highest in winter, with low temperatures, and lowest during the

period of maximum temperatures. At the more exposed locations, there is less temperature fluctuation, more moisture, and hence steadier relative humidities. The diurnal variation is also less than at the continental locations. Along the Brazilian coasts, humidities in the 80 per cent range during the morning fall into the 70 per cent range by the afternoon. Farther S is a wider variation. While winter morning humidities may reach the 80 per cent range, in summer, they only climb into the upper 50 to 60 per cent range. Afternoon readings are 20 to 25 per cent lower.

Average winter relative humidities along the Argentine coast range from the upper 60 per cent range at sheltered ports to near 85 per cent at exposed locations. At exposed ports, latitude has little effect. Buenos Aires, for example, has an average June relative humidity of 83 per cent, while Isla de Los Estados has an 85 per cent average relative humidity in June. On the coast of Chile, average relative humidities are around 90 per cent in June. The sheltered island ports also record a definite winter maximum; Port Stanley has a morning average of 90 per cent in July. Average summertime readings range from 48 per cent at Puerto Madryn to 87 per cent at Cape Raper.

The largest differences in average summer and winter relative humidities lie between Bahia Blanca and Puerto Gallegos, with a range from about 18 to 25 per cent. Around the S tip of South America, this difference is on the average 1 to 3 per cent, while along the Chilean coast the range is generally 2 to 5 per cent and as much as 10 to 20 per cent at more sheltered locations. Port Stanley has an average annual variation of 14 per cent, but Cumberland Bay records only a 5 per cent difference.

The diurnal variation of relative humidity is, in general, opposite to that of temperature. The maximum occurs in the early morning hours, while the minimum occurs during the afternoon. At Bahia Blanca, in June, the average 0800 relative humidity is 80 per cent, dropping to 61 per cent by 1400. At ports exposed to an increasing onshore flow or afternoon sea breeze, this variation is decreased and, in some cases, the relative humidity may actually increase during the day. For example, at Grupo Evangelistas, the average relative humidity at 0700 is 83 per cent, while at 1400 it is 82 per cent.

Visibility.—Fog, which is a stratus cloud in contact with the surface, occurs when the horizontal visibility in this cloud is less than 0.5 mile. The formation of fog is due to either the evaporation of water into the air or cooling of the air. Evaporation of water can occur when cold air comes into contact with warmer water or when warm rain falls through colder air. Cooling of the air is accomplished when warm air is advected over cold water, when radiational cooling takes place, or when air is forced aloft. Advection and frontal fogs are the predominant types for maritime regions. Since all types of fog dissipate with sufficiently strong heating, there is an early morning maximum and afternoon minimum in fog frequency.

Haze, smoke, and precipitation are other visibility reducing factors, but in general they are either less restricting or of shorter duration than fog.

The highest frequency of fog is found in the Falkland Islands, where Port Stanley experiences 47 days of fog annually. Cumberland Bay, on South Georgia Island, experiences 28 days of fog per year. An annual average of 20 to 25 fog days occurs along the Chilean coast, while 10 to 20 days annually are experienced from La Plata to Bahia Blanca. Fog is rare

from S of Bahia Blanca to Comodoro Rivadavia; less than 5 days occur annually. From Deseado to Cape Horn, fog occurs on 10 to 15 days per year.

Along the Argentine coast from La Plata to Cape Virgenes, fog is most common from May through September. During these months, it occurs on average of 3 to 5 days per month N of Bahia Blanca and 1 to 2 days per month from Deseado to Cape Virgenes. Fog also occurs on 4 to 6 days per month at Port Stanley during the winter season. Along the S coast of Tierra del Fuego and N along the exposed coastal sections of Chile, fog exhibits a summer maximum. Warm air moving over relatively cold water is responsible for this increase; 3 to 5 days of fog per month is common during the summer season.

Fog is rare N of Porto Alegre; however, it occasionally creeps as far N as Caravelas in summer. Mist, haze, and showers are responsible for infrequent reductions in visibility in the tropics.

Currents

General

Non-tidal Currents.—The major surface currents of the South Atlantic Ocean are, as follows:

1. Guiana Current along the NE coast of South America.
2. Brazil Current off the coast of Brazil.
3. Falkland Current along the coasts of Uruguay and Argentina.
4. Cape Horn Current S of Cape Horn.
5. Atlantic Equatorial Countercurrent N of the Equator.
6. Guinea Current N of the Equator.
7. Benguela Current off the W coast of Africa.
8. Agulhas Current along the coast of South Africa.
9. Atlantic South Equatorial Current N of 25°S.
10. South Atlantic Current between 30°S and 40°S.
11. West Wind Drift S of 40°S.

The surface flow is generally westward N of about 25°S and eastward S of about 30°S, except along the coasts of South America and Africa. The typical speed in both the E and W flow is about 0.6 knot. Off the E coast of Brazil, the current sets S and SW to about 35°S, where it turns SE after meeting the N E-setting current off the coast of Argentina. A narrow rapid-flowing current sets SW and then W, at 1 to 2 knots, along the immediate South African coast. The flow off the Atlantic coast of Africa is NE or N as far N as the Nigerian border. Along the immediate African coast from 15°W to about 8°E, the flow is generally SE and then E. The seasonal variation in the current pattern is slight except, at scattered locations along the immediate coasts.

Tidal Currents.—Tidal currents are usually weak, except in inlets along the coast, where speeds are highest. In nearshore waters, the tidal currents are usually reversing, flooding toward and ebbing away from the coast, or flooding and ebbing in opposite directions parallel with the coast. In regions of mixed or semidiurnal tides, two flood and two ebbs occur daily. In the region of diurnal tides, one flood and one ebb occur daily.

Rotary tidal currents occur offshore where the direction of flow is not restricted; speed will vary as direction changes continuously through all points of the compass during the tidal day. The change in direction is generally clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere.

Northwest South Atlantic Ocean

Non-tidal Currents.—During summer (January, February, March), the flow is westward N of 10°S and NW along the N coast of Brazil. South of 10°S, along the SE coast of Brazil, the flow is SW to about 35°S. Current speeds may reach 2 knots in the NW flow along the N coast of Brazil; otherwise, speeds are about 0.6 knot. In winter (July, August, September), the flow changes to E in the extreme N due to the establishment of the Atlantic Equatorial Countercurrent. Along the SE coast of Brazil, the flow changes to NE as the Falkland Current extends NE to about 25°S.

The non-tidal surface currents in this area are, as follows:

1. **Atlantic Equatorial Countercurrent**—Flows E between the W-setting Atlantic North Equatorial Current and the Atlantic South Equatorial Currents. Its position changes considerably from month to month. The W part nearly disappears in January, February, and March. At this time, it sinks and flows under the North Atlantic Equatorial Current, which establishes itself as a W-setting current on the surface. The speed of the Atlantic Equatorial Countercurrent is about 0.9 knot during July, August, and September, the period of its greatest strength and extent.

2. **Guiana Current**—A strong persistent NW flowing current along the NE coast of Brazil. Speeds average 2 knots in many areas and occasionally reach 4 knots. The direction is constant year round, but the speed is slightly stronger in winter (July, August, September).

3. **Atlantic South Equatorial Current**—Flows W across the Atlantic Ocean along and just S of the Equator. The current expands N during January, February, and March. Speeds average 1.0 to 1.2 knots in the N portion and about 0.7 knot over the remaining part.

4. **Brazil Current**—The extension of the Atlantic South Equatorial Current which flows SW off the coast of Brazil to about 35°S. It is slightly stronger during the Southern Hemisphere winter (July, August, September), even though countercurrents, caused in part by a N extension of the Falkland Current, persist along the immediate coast as far N as 23°S.

Tidal currents.—Tidal currents in nearshore waters are usually reversing, flooding inward and ebbing away from the coast, or alternately flooding and ebbing in opposite directions parallel to the coast. Since the tides are semi-diurnal, there will usually be two flood-ebb cycles daily.

Ebb currents of 2 to 4 knots may be experienced at the mouths of major rivers.

Northeast South Atlantic Ocean

Non-tidal Currents.—The flow is generally NW or N off the coast of Africa. West of 5°E it turns W. The speed of this flow is about 0.5 knots generally and increases to about 0.9 knots along the Equator. North of the Equator along the Gulf of Guinea coast, the Guinea Current flows E at about 1 knot.

The non-tidal surface currents in this area are, as follows:

1. **Guinea Current**—Flows E along the African coast from 14°W to 8°E during the Northern Hemisphere summer, at a mean speed of 1.2 knots; from December through February, E winds reduce the speed considerably and sometimes reverse the current. The current widens considerably between 10°W and 20°W.

2. **Benguela Current**—A slow-moving NW-setting current which flows along the W coast of Africa from Cape

Agulhas to 17°S, and then off the coast to just N of the Equator at 10°W. The direction gradually turns toward the west N of 10°S. The mean speed is about 0.6 knot.

3. **Atlantic South Equatorial Current**—Flows NW just W of the Benguela Current from about 30°S to about 10°S and then W, reaching the Equator at about 10°W. The mean speed is about 0.7 knot, except in the extreme N, where it exceeds 1 knot.

Tidal currents.—Tidal currents in nearshore waters are usually reversing, flooding inward and ebbing away from the coast, or alternately flooding and ebbing in opposite directions parallel to the coast. Since the tides are semi-diurnal, there will usually be two flood-ebb cycles daily.

Ebb currents of 2 to 4 knots may be experienced at the mouths of major rivers.

Southeast South Atlantic Ocean and the Western Indian Ocean

Non-tidal Currents.—The non-tidal surface currents in this area are, as follows:

1. **Agulhas Current**—Sets S and SW along the SE coast of Africa. West of 25°E, the direction shifts to the W. The average speed is about 2 knots, except in the extreme SW part, where it drops to 1 knot. In the vicinity of 30°W, speeds occasionally reach 5 knots.

2. **South Atlantic Current**—Sets E or ENE over a large area between 32°S and 42°S west of 10°E, with an average speed of about 0.7 knot. It is apparently maintained by prevailing W winds with a high degree of constancy. The current turns sharply to the NW into the Benguela Current a couple of hundred miles E of the Cape of Good Hope.

3. **West Wind Drift**—A broad global circulation of water with a N boundary between 40°S and 45°S, and extending S almost to Antarctica. The water is entirely of high latitude origin as contrasted with the South Atlantic Current, where the flow originates from the low latitude Brazil Current. The flow is E or ENE, at an average speed of 0.5 knot in the S to about 0.8 knot in the N.

Tidal currents.—Tidal currents in nearshore waters are usually reversing, flooding inward and ebbing away from the coast, or alternately flooding and ebbing in opposite directions parallel to the coast. Since the tides are semi-diurnal, there will usually be two flood-ebb cycles daily.

Ebb currents of 2 to 4 knots may be experienced at the mouths of major rivers.

Southwest South Atlantic Ocean

Non-tidal Currents.—The flow is generally eastward S of 55°S. East of Cape Horn, it turns NNE between the Argentine coast and the Falkland Islands and then NE off the Argentine coast as far N as 35°S, where it turns SE. The average current speed in this flow is 0.6 knot, generally, and increases to 1 knot in the vicinity of Cape Horn. Along the immediate Argentine coast S of 39°S, there is usually a S-setting countercurrent. East of 50°W, the flow is generally E at about 0.5 knot.

The non-tidal surface currents in this area are, as follows:

1. **Cape Horn Current**—Sets continuously E close to the tip of South America and enters Drake Passage at about 70°W, with observed speeds of up to 2.4 knots. The set veers NNE and the current slows considerably after it crosses longitude 65°W. North of 54°S, some of the current merges

into the Falkland Current; the remainder fades into the West Wind Drift.

2. **Falkland Current**—Sets NE off the coast of Argentina from 54°S to 35°S in December, January, and February, and to 25°S in April, May, and June. The mean speed is 0.8 knot in July and August and 0.6 knot in January and February. Along the immediate coast currents are tidal, with a slight S set.

3. **South Atlantic Current**.—A broad area of E-setting current E of 40°W to 45°W between 30°S and 40°S. The set is SE in the NW portion. The average speed ranges from 0.5 knot in the N to 0.7 knot in the S. The current shrinks considerably in January and February.

4. **West Wind Drift**—The area of E-setting current S of 41°S, E of the Falkland Islands, and S of the Cape Horn Current. The mean speed is about 0.5 knot, generally, and 0.7 knot in the Drake Passage S of the Cape Horn Current. The West Wind Drift is composed of water originating in high latitudes and circles the world as far S as 60°S to 65°S.

Tidal currents.—Tidal currents in nearshore waters are usually reversing, flooding toward, and ebbing away from the coast or alternately flooding and ebbing in opposite directions parallel to the coast. Since the tides are mixed or semi-diurnal, there will usually be two flood-ebb cycles daily.

Ebb currents of 1 to 1.5 knots may be experienced at the mouth of the River Plate; the flood current may be slightly less.

Government

Dependent Island Groups

Saint Helena

Saint Helena (15°56'S., 5°42'W.) and its dependencies of Ascension Island, Tristan da Cunha Group, and Gough Island are described in Saint Helena/Ascension Island.

Bouvetoya

Bouvetoya (54°26'S., 3°25'E.) also known as Bouvet Island, is a dependency of Norway. This island lies 1,360 miles SW of the Cape of Good Hope and 997 miles SE of Gough Island. It is uninhabited and the most isolated piece of land on the earth's surface.

Bouvetoya has an area of about 19 square miles and consists of a single volcanic cone with a wide indented crater. Olav Peak, 780m high, stands at the center of the island. The slopes of the central cone terminate on all sides in precipitous cliffs or glaciers, which descend abruptly to the sea. The E side of the island is entirely covered with an ice sheet. The N and W sides of the island are comparatively free from ice, except for isolated glaciers, but are much steeper than the S and E sides. Bouvetoya lies in the path of the strongest W winds and thick clouds usually obscure its highest elevations. Snow is frequent and temperatures rarely exceed 2°C in the summer, averaging 1.5°C in the winter.

Ice

The N limit of drift ice averages about 40°S during autumn and 37°S during winter. Drift ice reaches 33°S about 150 miles off the coast of Uruguay and southern Brazil during spring and

summer, but the blocking action of Tierra del Fuego keeps the coast of Argentina free of drift ice as far as 50°S, as currents generally set NNE away from the coast. On the other side of the Atlantic Ocean, drift ice makes it almost to Cape Agulhas on the South African coast during winter.

Large tabular icebergs having areas of 1 square nautical mile or more extend N to about 45°S. The seasonal variation in the N penetration is about 2° of latitude with the northernmost drift occurring in winter and spring (July through December). The longitudinal zones of maximum N drift of large tabular bergs are between 35°W and 45°W, and E of 0°E.

Navigational Information

International Ship and Port Facility (ISPS) Code

For information concerning the International Ship and Port Facility (ISPS) Code, see Indian Ocean—Navigational Information.

Electronic Navigation and Communication

For information concerning electronic navigation and communication, see Indian Ocean—Navigational Information.

Enroute Volumes

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Pollution

Single-hull Tanker Phase-out Schedule

In accordance with Regulation 13G of Annex I of the MARPOL Convention, single-hull tankers should be phased out or converted to a double-hull configuration according to a schedule based on their year of delivery. These requirements are designed to reduce the risk of oil spills from tankers involved in low-energy collisions or groundings.

The types of vessels affected by these regulations and their phase-out schedule is, as follows:

1. **Category 1**—Commonly known as Pre-MARPOL Tankers, consists of the following types of vessels:

- a. Tankers of 20,000 dwt and over carrying crude oil, fuel oil, heavy diesel oil, or lubricating oil as cargo.
- b. Tankers of 30,000 dwt and over carrying other oils, which do not comply with the requirements for protectively-located segregated ballast tanks.

The phase out schedule for Category 1 vessels is, as follows:

- a. Vessels delivered on or before 5 April 1982—not allowed to trade after 5 April 2005.
- b. Vessels delivered after 5 April 1982—not allowed to trade after the anniversary date, in 2005, of their delivery date.

2. **Category 2**—Commonly known as MARPOL Tankers, consists of the following types of vessels:

- a. Tankers of 20,000 dwt and over carrying crude oil, fuel oil, heavy diesel oil, or lubricating oil as cargo, which comply with the MARPOL requirements for protectively-located segregated ballast tanks.

b. Tankers of 30,000 dwt and over carrying other oils, which comply with the MARPOL requirements for protectively-located segregated ballast tanks.

The phase out schedule for Category 2 vessels is, as follows:

a. 5 April 2005 for vessels delivered on 5 April 1977 or earlier.

b. Anniversary date in 2005 for vessels delivered after 5 April 1977 but before 1 January 1978

c. Anniversary date in 2006 for vessels delivered in 1978 and 1979.

d. Anniversary date in 2007 for vessels delivered in 1980 and 1981.

e. Anniversary date in 2008 for vessels delivered in 1982.

f. Anniversary date in 2009 for vessels delivered in 1983.

g. Anniversary date in 2010 for vessels delivered in 1984 or later.

3. **Category 3**—Consists of tankers 5,000 dwt and over but less than the tonnage specified for Category 1 and Category 2 vessels.

The phase out schedule for Category 3 vessels is, as follows:

a. 5 April 2005 for vessels delivered on 5 April 1977 or earlier.

b. Anniversary date in 2005 for vessels delivered after 5 April 1977 but before 1 January 1978

c. Anniversary date in 2006 for vessels delivered in 1978 and 1979.

d. Anniversary date in 2007 for vessels delivered in 1980 and 1981.

e. Anniversary date in 2008 for vessels delivered in 1982.

f. Anniversary date in 2009 for vessels delivered in 1983.

g. Anniversary date in 2010 for vessels delivered in 1984 or later.

Single-hull tankers of 5,000 dwt and over are prohibited from carrying heavy grade oil (HGO) after 5 April 2005. Single-hull tankers of 600 dwt and over but less than 5,000 dwt are prohibited from carrying HGO after the anniversary of their delivery date in 2008.

Routes

Routes between South American ports situated N of Rio de La Plata and ports on the African coast situated N of 25°S should be by great circle in both directions. A great circle track is also recommended in either direction between the port of Recife (or Salvador) and the Cape of Good Hope. Otherwise, vessels proceeding E should follow a great circle track while those proceeding W should normally proceed by rhumb line so as to avoid the strength of the South Atlantic Current and the Prevailing Westerlies. Mid-ocean transits to the S of 42°S should be avoided in either direction.

Vessels transiting the South Atlantic Ocean should be cautioned that the extreme limit of iceberg migration is about 36°S near Cape Agulhas and 39°S near Tristan da Cunha. This

limit extends to within 200 miles of the mouth of the Rio de la Plata.

Seas

Adjacent Waters

Adjacent waters include the Gulf of Guinea, the Strait of Magellan, and the Rio de la Plata.

The Gulf of Guinea

The Gulf of Guinea is that part of the South Atlantic Ocean lying E of a line extending SE from Cape Palmas, in Liberia, to Cape Lopez, in Gabon. In the upper part of this gulf between Ghana and the Niger delta, a broad indentation forms the Bight of Benin. In the NE corner of the gulf, a line of volcanic islands extends NE from Oagalu to Bioko (Macias Nguema Biyogo) and forms the Bight of Biafra. The warm Guinea Current flows E near the coast and swings around in this latter bight to join the South Equatorial Current, which is composed mainly of cooler water from the Benguela Current moving up from the S.

The Strait of Magellan

The Strait of Magellan separates Archipelago de Tierra del Fuego from the Patagonian mainland and Archipelago Reina Adelaide. This strait was named after its discoverer, Hernando de Magallanes, in 1520.

The strait is entered at the E end between **Punta Dungeness** (52°24'S., 68°25'W.) and Cabo Espiritu Santo, 16.5 miles SW. The W entrance lies between **Cabo Victoria** (52°17'S., 74°54'W.) and Cabo Pilar, 28 miles SSE. The distance between these entrances is about 310 miles.

Vessels must exercise caution when transiting the strait in either direction because during bad weather, which is most likely to be the case, the navigation is particularly difficult and dangerous. Generally, the anchorages are foul and rocky throughout the strait. In addition, the strait offers problems concerning both local wind directions and speeds. In the many countless passages, the wind usually follows the run of the channel, having only two possible directions in any one location. This is particularly true within the narrow passages lying W of Cape Froward.

The rugged sparsely-populated S coast of Chile is a stormy and windy region where, in many places, trees are stunted and indicate the direction of the prevailing wind by their distorted shapes, much like trees high on a mountain which lean with the prevailing wind.

The Rio de La Plata

The Rio de La Plata is a broad estuary comprising an enormous drainage basin which includes the Paraguay River, the Parana River, and the Uruguay River, as well as numerous small streams. The estuary is entered between **Punta del Este, Uruguay** (34°58'S., 54°57'W.) and Cabo San Antonio, Argentina, located 120 miles SW. It extends in a WNW direction for about 140 miles.

Despite the enormous amount of water discharged into the ocean, the Rio de la Plata is relatively shallow. Seasonal rates of flow, winds, and tides have a considerable effect on the depths. The expanse of the low plain, known as the pampas, on the S side permits violent winds, called pamperos, to build up and whip the waters of the estuary into violent storms at certain

times of the year. A large portion of the river cannot be used except by very shallow draft vessels. Navigation in the lower reaches is only maintained by constant dredging.

Tides

General

The tide is semidiurnal along the coast of Africa, the E end of the Strait of Magellan, and the coast of Brazil S to 21°30'S; tides are mixed along the remaining coast of Brazil and Argentina.

The tidal range varies from less than 0.6m along the coast of Uruguay and southern Brazil to around 9.1m at the E end of the Strait of Magellan.

Northwest South Atlantic Ocean

The tide is semi-diurnal (two high and two low tides daily) along the coast of Brazil N of 21° 30'S, and mixed (part diurnal and part semi-diurnal) to the S.

The tide range varies from less than 0.6m S of 25°S to about 3.1m near the Equator.

Northeast South Atlantic Ocean

The tide is semi-diurnal along the W coast of Africa from Cape Agulhas to 10°N.

The mean tide range is from 0.9 to 1.5m in most places except the extreme N, where it exceeds 2.1m.

Southeast South Atlantic Ocean and the Western Indian Ocean

The tides are semi-diurnal along the coasts of southern Africa.

The average range is about 1.2m, except for an increase to 2.1m along the coast of Mozambique.

Southwest South Atlantic Ocean

The tide is mixed, except at the E end of the Strait of Magellan, where it is semi-diurnal.

The mean tide range varies from 0.3m along the coast of Uruguay to 9.1m at the E end of the Strait of Magellan. From 41°S to 54°S, the mean range is from 3.1 to 6.2m; at 55°S, it drops to under 1.5m.



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General

Sri Lanka, formerly Ceylon, is a large pear-shaped island lying off the SE coast of India. The central part of the S half is mountainous, while elsewhere the island is practically flat. Extensive fresh and salt water lagoons lie close inland along much of the coast. Slight earthquake shocks are occasionally felt in Sri Lanka, but they are not sufficiently intense to cause serious damage. The climate is tropical monsoon; the North-east Monsoon lasts from December to March, while the South-west Monsoon lasts from June to October.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 107 (Issued 1 December 1997)

1. Sri Lanka has announced that entrance by unauthorized vessels into the waters of Palk Strait and the eastern territorial waters of Sri Lanka is prohibited because of the increased acts of terrorism against shipping and Sri Lankan naval vessels. Sri Lanka requires that vessels in the vicinity contact the Sri Lankan Command (Tel. 941-42-30-10, Fax: 941-433-986) for authorization if they wish to enter these areas.

2. The government also has establish a restrictive zone in coastal waters along the west coast from Kalpitiya to Colombo Port's southern backwaters. Written permission from the Sri Lankan Command is required for entry into these waters as well. Sri Lankan authorities have advised that they will fire on violators.

3. The U.S. Embassy in Colombo reports that between July and September 1997, at least three foreign flag merchant vessels were attacked by the Liberation Tigers of Tamil Eelam (LTTE). One vessel operating as a passenger ferry off Mannar on the northeast coast was set afire and sunk. A second vessel departing north from the Jaffna Peninsula was hijacked, stripped of equipment, and its crew temporarily held by terrorists. One crew member was killed during the hijacking. A third vessel was loading mineral cargo off the northeast coast near Pulmoddai when it was attacked and at least five members of its crew killed.

4. Any anti-shipping activity should be reported to NGA NAVSAFETY, U.S. State Department, or the nearest U.S. Consulate. Refer to NGA Pub. 117, Chapter 4, for instructions on filing a Ship Hostile Action Report (SHAR) or Anti-Shipping Activity Message (ASAM).

5. The publication of this notice is solely for the purpose of advising United States mariners of information relevant to navigational safety and in no way constitutes a legal recognition by the United States of the validity of any foreign rule, regulation, or proclamation so published.

Piracy

Attacks on all classes of vessels occur in the waters of Sri Lanka, particularly off the N and NE coasts of the island. They also occur at a considerable distance offshore.

Currency

The official unit of currency is the Sri Lankan rupee, consisting of 100 cents.

Firing Areas

Naval gun firing exercises are carried out in areas bounded by lines joining the following positions:

1. **Area D2.**
 - a. 06°50'N, 79°25'E.
 - b. 06°50'N, 79°39'E.
 - c. 06°35'N, 79°39'E.
 - d. 06°35'N, 79°25'E.
2. **Area D3.**
 - a. 07°19'N, 79°10'E.
 - b. 07°16'N, 79°30'E.
 - c. 07°06'N, 79°30'E.
 - d. 07°03'N, 79°10'E.
3. **Area D4.**
 - a. 08°50'N, 81°20'E.
 - b. 08°50'N, 81°30'E.
 - c. 08°40'N, 81°30'E.
 - d. 08°40'N, 81°20'E.
4. **Area D5.**
 - a. 08°30'N, 81°30'E.
 - b. 08°30'N, 81°40'E.
 - c. 08°20'N, 81°40'E.
 - d. 08°20'N, 81°30'E.

Details of operating/activation times for the above areas will be transmitted by Colombo Radio.

Government



Flag of Sri Lanka

Sri Lanka is a republic. The island is divided into eight provinces.

Sri Lanka is governed by a directly-elected President, who is serving a 6-year term. The unicameral Parliament consists of

225 directly-elected members, under a modified system of proportional representation, serving 6-year terms.

The legal system is based on a highly complex mixture of English common law, Roman-Dutch law, Muslim law, and Sinhalese customary law.

The capital is Colombo.

Holidays

The following holidays are observed:

February 4	National Day
Good Friday	Variable
April 13	New Year's Eve (Tamil and Sinhala)
April 14	New Year's Day (Tamil and Sinhala)
May 1	May Day
December 25	Christmas Day

Religious holidays, the dates of which vary from year to year depending on the appearance of the moon, include Thai Pongal, Eid-al-Fitr, Maha Sivarathri, Eid-al-Adha, Deepavali, Milad-Un-Nabi (Prophet's Birthday), and 12 days during the year known as Full Moon Poya Days.

Industries

Major industries include the processing of rubber, tea, tobacco, coconuts, and other agricultural commodities. Other main industries include livestock raising, gem and mineral mining, textiles, clothing, pharmaceuticals, fertilizers, fishing, leather goods, and petroleum refining.

Languages

Sinhala and Tamil are the official languages. English is also widely used.

Navigational Information

Enroute Volume

Pub. 173, Sailing Directions (Enroute) India and the Bay of Bengal.

Maritime Claims

The maritime territorial claims of Sri Lanka are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims Palk Bay, Palk Strait, and the Gulf of Mannar as historic waters.

** Also considered a Security Zone.

Regulations

Security Zone

Mariners are cautioned that the government of Sri Lanka has declared a 3-mile wide territorial security zone off the E coast between **Point Pedro** (9°50'N., 80°15'E.) and **Komari** (Sangamankanda Point) (7°00'N., 81°53'E.). All merchant vessels approaching Sri Lanka from the E should be aware of the possible presence of naval patrol vessels which may request identification and details of destination.

The government of Sri Lanka has issued the following regulations:

1. No vessel shall enter or remain within Sri Lanka's territorial waters other than:
 - a. Those entering or leaving Sri Lanka's ports of Colombo, Galle, Trincomalee, and Kankasanturai.
 - b. Vessels navigating through the traffic separation zone off Dondra.
 - c. Vessels engaged in Sri Lanka's coastal trade.
 - d. Vessels laid up inside Trincomalee Harbor.
 - e. Vessels waiting in the roads off the port of Colombo with the approval of the harbormaster.
 - f. Vessels navigating through Sri Lanka's territorial sea and internal waters in the Palk Strait with the permission of the commander of the Sri Lanka Navy.
2. Any vessel which enters Sri Lanka's territorial waters in contravention of these rules shall do so at their own risk, and the Sri Lanka government shall not be liable for any loss or damage such vessels may suffer.
3. The master of any vessel which enters Sri Lanka's territorial waters shall identify the vessels if challenged by:
 - a. Any vessel responsible for the performance of coast guard duties.
 - b. Any Sri Lanka aircraft.
 - c. Any Sri Lanka authority from land by radio.

4. Any vessel which has to enter Sri Lanka's territorial waters for purposes other than those described in the rules shall do so only with the approval of the harbormaster.

The above regulations are promulgated for information only and should in no way be construed as in derogation of the right of navigation on the high seas.

Search and Rescue

Search and rescue operations are coordinated with the Sri Lankan Navy, Air Force, and port authorities. A Maritime Rescue Coordination Center (MRCC) is located in Colombo. Colombo Coast Radio Station (4PB) maintains a continuous listening watch for distress calls on 2182 kHz and VHF channel 16. Galle Coast Radio Station (4PG), a remote-controlled station operated from Colombo Coast Radio Station, maintains a continuous listening watch for distress calls on VHF channel 16.

Rescue craft are located in Jaffna, Galle, and Colombo.

Time Zone

The Time Zone description FOXTROT (-6); however, it has been reported (2006) that Sri Lanka will begin observing Standard Time 5 hours 30 minutes fast of UT(GMT) beginning on 13 April 2006. Daylight Savings Time is not observed.

Traffic Separation Schemes

An IMO-adopted Traffic Separation Scheme is located off Dondra Head, the S extremity of Sri Lanka.

U.S. Embassy

The U.S. Embassy is situated at 210 Galle Road, Colombo. The mailing address is P.O. Box 106, Colombo.

<p>U. S. Embassy Sri Lanka Home Page http://usembassy.state.gov/srilanka</p>



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General

Sudan, the largest country in Africa, is located in the NE part of Africa. It is bounded on the SE by Ethiopia and Eritrea, on the E by the Red Sea, on the N by Egypt, and on the NW by Libya. The country may be divided into two regions, as follows:

1. The region lying N of 16°N is a continuation of the Sahara Desert
2. The region lying S of 16°N is fertile, abundantly watered, and densely wooded in places

Sudan is traversed from S to N by the Nile River; the Nubian Desert extends between the valley of this river and the Red Sea. This desert consists of a rugged and barren wasteland scored with ravines where there is scanty vegetation.

The climate is tropical in the S part, with a rainy season of April to October, and arid desert in the N part.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Special Warning 108 (Issued 20 October 1998)

1. In January 1996, the Department of State warned all U.S. citizens against traveling to Sudan due to ongoing violence within the country. Citing the U.S. government's suspension of its diplomatic presence in Sudan, the department advised that its ability to provide emergency consular services would be severely limited. In August 1998, the State Department again warned U.S. citizens against travel to Sudan "following the recent U.S. air strikes against terrorist facilities and possible threats to Americans and American interests in that country." The latter warning (No. 98-041) remains in effect to date.

2. In November 1997, President Clinton issued Executive Order 13067 imposing a U.S. trade embargo against Sudan. Among the prohibited activities are "any transaction by a United States person relating to transportation of cargo to or from Sudan." "United States person" is defined as any U.S.

citizen, permanent resident, entity organized under U.S. law, or person in the United States. The embargo is still in effect.

3. Notwithstanding the pre-existing travel warning and ongoing U.S. trade embargo, the recent U.S. missile attack on a chemical plant in Khartoum has raised concerns of possible retaliation against U.S. citizens and/or commercial interests. U.S. mariners are therefore urged to avoid Port Sudan or other Sudanese ports. U.S. vessels are also advised to remain well clear of Sudanese territorial waters in the western Red Sea area.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the dinar, although the former Sudanese pound remains legal tender.

Government



Flag of Sudan

Sudan is a sovereign independent republic. The country is divided into 26 states.

Sudan is governed by a directly-elected President serving a 5-year term. The unicameral National Assembly, currently suspended (2003), consists of 360 members; 270 members are directly elected, while 90 seats are filled by a assembly of interest groups known as the National Congress.

The rebel Sudanese People's Liberation Army maintains guerrilla activities in the S part of the country.

The legal system is based on Islamic law and English common law.

The capital is Khartoum.

Holidays

The following holidays are observed:

January 1	Independence Day
March 3	National Unity Day

April 6	Uprising Day
May 25	Revolution Day
June 30	National Salvation Revolution Day
December 25	Christmas Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Agriculture is the primary industry. The major crops are cotton, sorghum, sugar cane, peanuts, gum, millet, wheat, and sesame.

Other industries include minerals, sugar processing, cotton ginning, textiles, cement, hides and skins, and petroleum products.

Languages

Arabic is the official language. Nubian, Ta Bedawie, Nilo-Hamitic, and English are used. Several diverse dialects of Nilotic and some Sudanic languages are also spoken.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Sudan are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	18 miles.
Continental Shelf	Depth of 200m or the Limit of Exploitation.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

** Also considered a Security Zone.

Search and Rescue

The Ministry of Transport is responsible for coordinating search and rescue operations. Port Sudan Coast Radio Station (STP) maintains a continuous listening watch for distress calls on 2182 kHz and VHF channel 16.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

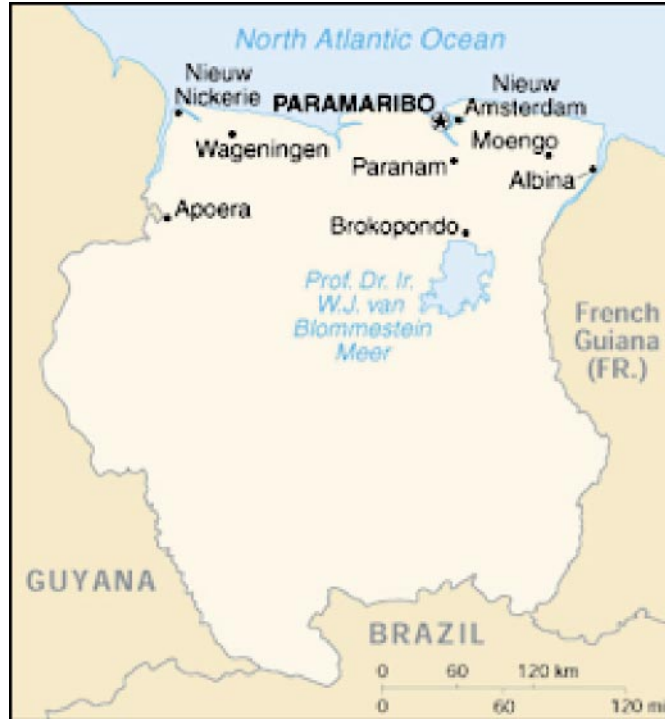
The U.S. Embassy is situated at Shar'ia Ali Abdul Latif, Khartoum.

The mailing addresses are, as follows:

1. Sudan address—
P.O. Box 699

- Khartoum
2. U.S. address—
APO AE 09829

<p>U. S. Embassy Sudan Home Page http://khartoum.usembassy.gov</p>



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Currency

The official unit of currency is the Suriname guilder, consisting of 100 cents.

Government



Flag of Suriname

General

Suriname, located in the N part of South America, is bounded on the E by French Guiana, on the W by Guyana, on the S by Brazil, and on the N by the Atlantic Ocean.

The majority of the population inhabits the flat and fertile coastal area, 210 miles long, where dikes permit agriculture. The country inland is hilly and covered with dense tropical forests.

The climate is equatorial with uniformly high temperatures and rainfall. There is no recognized dry season.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Suriname is a constitutional democracy. The country is divided into ten districts.

Suriname is governed by a president elected by the National Assembly for a 5-year term. The President appoints the Cabinet of ministers from members of the National Assembly. The unicameral National Assembly consists of 51 directly-elected members serving 5-year terms.

The legal system is based on Dutch civil law incorporating French penal theory.

The capital is Paramaribo.

Holidays

The following holidays are observed:

January 1	New Year's Day
February 25	Revolution Day
Easter Sunday	Variable
Holy Phagwa	Variable
May 1	Labor Day
July 1	Emancipation Day
November 25	Independence Day
December 25	Christmas Day
December 26	Boxing Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

The major industries include crude oil production, bauxite mining, aluminum smelting, timber, food processing, fishing, palm oil processing, leather goods, and livestock raising.

The chief crops are rice, coconuts, bananas, citrus fruits, vegetables, and cassava.

Languages

Dutch is the official language, but English is widely spoken. Spanish, Hindi, Javanese, and Chinese are also used. Sranan, also known as Surinamese or Taki-Taki, is a native language spoken by the Creoles and many young people.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of Suriname are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.

Maritime Boundary Disputes

Suriname and Guyana seek United Nations arbitration to resolve a long-standing dispute over the axis of the territorial sea in potentially oil-rich waters.

Regulations

Vessels in ballast must carry sufficient clean ballast to allow safe handling over the bars and up the rivers.

In all ports, vessels must maintain a sufficient state of readiness to get underway at full power at short notice.

Dangerous cargo must have the method of packing and stowage indicated on the manifest.

Search and Rescue

A Maritime Rescue Coordination Center (MRCC) is located in Paramaribo. Paramaribo Coast Radio Station (PZN) maintains a continuous listening watch for distress traffic on 2182 kHz and VHF channel 16.

Time Zone

The Time Zone description is PAPA (+3). Daylight Savings Time is not observed.

U.S. Embassy

The U. S. Embassy is situated at 129 Dr. Sophie Redmondstraat, Paramaribo.

The mailing address is Department of State, 3390 Paramaribo Place, Washington DC 20521-3390.

U. S. Embassy Suriname Home Page
<http://paramaribo.usembassy.gov>



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Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the Tanzanian shilling, consisting of 100 cents.

Government

General

Tanzania, consisting of Tanganyika and the off-lying islands of Zanzibar and Pemba, is located on the E coast of Africa between the great lakes of the central part of the continent and the Indian Ocean. It is bounded on the NE by Kenya; on the NW by Uganda, Rwanda, and Burundi; on the W by Democratic Republic of the Congo (Zaire); on the SW by Zambia and Malawi; and on the S by Mozambique.

The mainland consists of a low-lying coastal area, a high central plateau, and several scattered mountainous zones. Mount Kilimanjaro, the tallest peak in Africa, stands in the NE part of Tanzania, near the Kenyan border, and is 5,895m high.

Zanzibar is the largest and most important of the many islands lying off the E coast of Africa. This island is undulating, fertile, and has a harbor on its W side. Pemba, a low island, lies 24 miles NE of Zanzibar.

The climate varies from tropical along the coast to temperate in the highlands.



Flag of Tanzania

Tanzania is a republic. The country is divided into 25 regions.

Tanzania is governed by a directly-elected President serving a 5-year term. The Prime Minister and the cabinet are named

by the President from members of the National Assembly. The unicameral 274-member National Assembly consists of 232 directly-elected members, 37 female members appointed by the President, and five members from the Zanzibar House of Representatives; all members serve 5-year terms.

Zanzibar has its own directly-elected President, as well as a directly-elected 50-member House of Representatives, serving 5-year terms; they enact laws that apply only to Zanzibar.

The legal system is based on English common law.

The official capital is Dodoma. Dar es Salaam is the chief port and former capital.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 12	Zanzibar Revolution Day
Good Friday	Variable
Holy Saturday	Variable
Easter Sunday	Variable
Easter Monday	Variable
April 28	Union Day
May 1	Labor Day
July 7	Saba Saba Day
August 8	Peasants' Day
October 14	Mwalimu Nyerere Day
December 9	Independence Day
December 25	Christmas Day
December 26	Boxing Day

Islamic holidays, which are subject to the appearance of the moon, include Eid-il-Fitr (End of Ramadan), Eid-il-Hajj (End of Pilgrimage), and Maulid.

Industries

The major industries include food processing, diamond mining, petroleum and chemical products, cement, textiles, fertilizer, and wood products.

The principal mainland agricultural crops are cotton, coffee, millet, sorghum, sugar, maize, and sisal. The islands of Zanzibar and Pemba provide the greater part of the world's supply of cloves.

Languages

English and Swahili are the official languages. English is the principal language of commerce, administration, and higher education.

Swahili, the principal language of communication and primary education, is widely used by numerous ethnic groups. There are many tribal languages.

Navigational Information

Enroute Volume

Pub. 171, Sailing Directions (Enroute) East Coast of Africa.

Maritime Claims

The maritime territorial claims of Tanzania are, as follows:

Territorial Sea	12 miles.
Fisheries or Economic Zone	200 miles.

Regulations

Vessels are advised that it is prohibited to transmit on HF or MF frequencies when anchored in or navigating within 15 miles of Tanzanian ports. Only VHF transmissions are allowed unless prior permission has been obtained from the Chief Marine Radio Inspector, Maritime Communications Division, P.O. Box 2260, Dar es Salaam. Other methods for requesting the Chief Marine Radio Inspector are, as follows:

Facsimile:	255(0)51-50463
Telex:	989-41908 MBUGI (addressed to the attention of the Chief Marine Radio Inspector)

Search and Rescue

The Tanzania Harbor Authority is responsible for search and rescue operations within the coastal waters of Tanzania. Dar es Salaam Port Control maintains a continuous listening watch for distress traffic on VHF channel 16.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 686 Old Bagamoyo Road, Msasani, Dar es Salaam.

The mailing address is P.O. Box 9123, Dar es Salaam.

U. S. Embassy Tanzania Home Page
<http://tanzania.usembassy.gov>



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General

Thailand, formerly Siam, is located in Southeast Asia and borders the Gulf of Thailand and the Andaman Sea. It is bounded on the W by Burma (Myanmar), on the E by Laos and Kampuchea (Cambodia), and on the S by Malaysia.

The terrain consists of a central plain, with a plateau in the E part and mountains elsewhere.

The climate is mostly tropical. It is rainy and warm during the Southwest Monsoon, from mid-May to September. It is dry and cool during the Northeast Monsoon, from November to mid-March. The S part is always hot and humid.

Buoyage System

The IALA Buoyage System (Region A) is in effect, although some beacons and buoys which do not conform to this system continue to exist. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the baht, consisting of 100 satang.

Government



Flag of Thailand

Thailand is a constitutional monarchy. The country is divided into 76 provinces.

Thailand is governed by a King. The Prime Minister is appointed by the King. The bicameral National Assembly consists of a directly-elected 200-member Senate and a directly-elected 500-member House of Representatives serving 4-year terms.

The legal system is based on civil law, with influences of common law.

The capital is Bangkok.

Holidays

The following holidays are observed:

January 1	New Year's Day
May 1	Labor Day
May 5	Coronation Day
July 1	Mid-year Day
August 12	Her Majesty the Queen's Birthday
December 5	His Majesty the King's Birthday
December 10	Constitution Day
December 25	Christmas Day
December 31	New Year's Eve

Other holidays, which vary from year to year depending on the appearance of the moon, are Magha Puja Day, Chakri Day,

Songkran Day, Nao Day, Taleung Sok, Visakha Bucha Day, Kao Pansa Day, and Chulalongkorn Day.

Industries

The major industries include agricultural processing, textiles, cement, wood products, tin and tungsten ore mining, tourism, and light manufacturing (jewelry, appliances, integrated circuits, and plastics).

The principal crops include rice, maize, sugarcane, tobacco, tapioca root, soybeans, rubber, opium, and cotton. Teak, yang, and other woods, and charcoal are the main forestry products.

Languages

Thai is the official language. There are also several ethnic and regional dialects. English is used widely by the elite and in commerce.

Navigational Information

Enroute Volumes

Pub. 161, Sailing Directions (Enroute) South China Sea and Gulf of Thailand.

Pub. 174, Sailing Directions (Enroute) Strait of Malacca and Sumatera.

Maritime Claims

The maritime territorial claims of Thailand are, as follows:

Territorial Sea *	12 miles.
Fisheries or Economic Zone	200 miles.

* Claims straight baselines. Claims the inner Gulf of Thailand to 12°35'45"N as a historical bay.

Maritime Boundary Disputes

A short section of the maritime boundary with Malaysia at the mouth of the Sungai Kolok (6°15'N., 102°05'E.) remains in dispute.

Regulations

The laws relating to the production, possession, distribution, and use of narcotic drugs are extremely severe in Thailand. Penalties for infringement range from prison sentences and fines to life imprisonment and even execution.

Crew members, when on shore leave, must not carry sheath knives or other dangerous weapons.

Search and Rescue

Search and rescue operations in Thailand are coordinated by the Department of Aviation at Krung Thep (Bangkok) Rescue Coordination Center with the Royal Thai Navy, the Thai Marine Police Division, and the Harbor Department. A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Signals

General

Thailand requires that vessels preparing to leave port or Thai waters shall fly the International Code flag "P" indicating that the vessel is about to proceed to sea. If the vessel is to depart in the morning, this flag is to be flown in the afternoon of the previous day. If departure is in the afternoon, the flag is to be flown in the morning.

The vessel shall notify the harbor master at least 6 hours before the expected time of departure.

Within Thai territorial waters, merchant vessels may be signaled by Thai naval craft to stop, or to proceed in a certain direction, for the purpose of a search.

By day, signals from the International Code will be used by naval patrol craft. By night, repeated short and long flashes will be made by naval patrol craft, or a rocket, from which a red flare is ejected, will be fired. Vessels that do not stop in answer to these signals will be fired on.

Thai naval aircraft will make the appropriate signal from the International Code. They will fly low round the vessel and then proceed towards a certain direction indicating that the vessel must proceed in that direction. Vessels ignoring this signal will be warned by a burst of machine-gun fire directed ahead of the vessel.

Storm Signals

Signals indicating the presence of storms in the Gulf of Thailand and adjacent waters and their intensity are displayed at Bangkok. These signals, consisting of a pennant and a flag, are hoisted on the same yardarm; the pennant is displayed above the flag. The pennant indicates the intensity of the storm while the flag indicates the location. The signals are, as follows:

1. Yellow pennant—Tropical depression or storm with winds near the center not exceeding 33 knots
2. Blue pennant—Tropical depression or storm with winds near the center between 34 and 63 knots.
3. Red pennant—Tropical depression or storm with winds near the center exceeding 64 knots
4. Yellow flag—Area 1—West coast of the Gulf of Thailand to latitude 5°N and longitude 105°E.
5. Blue flag—Area 2—West coast of the Gulf of Thailand to latitude 5°N.
6. Red flag—Area 3—The Andaman Sea.
7. Blue flag with yellow square center—Area 4—The South China Sea in an area bound by lines joining the following positions:
 - a. 5°00'N, 105°00'E.
 - b. 12°00'N, 105°00'E.
 - c. 12°00'N, 112°00'E.
 - d. 5°00'N, 112°00'E.

Time Zone

The Time Zone description is GOLF (-7). Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at 120/22 Wireless Road, Bangkok 10330.

The mailing address is APO AP 96546.

U. S. Embassy Thailand Home Page
<http://bangkok.usembassy.gov>



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The seacoast, 28 miles long, lies between a position about 0.8 mile SW of **Lome** (6°07'N., 1°13'E.) and a point 2 miles E of Anecho.

Togo is traversed from SW to NE by a mountain range, which divides the country into two nearly equal triangles. The NW region consists of lowlands drained by rivers and bounded on the N by hills. The SE region is made up of low-lying coastal districts, with lagoons in the S part and an interior plateau in the N. There are long stretches of forest and bush-wood. The dry plains alternate with arable land.

The tropical climate produces wet seasons from March to July and from October to November in the S part.

The N part has one wet season, from April to July. The heaviest rainfall occurs in the mountains of the W, SW, and central parts.

General

Togo is located on the W coast of Africa. It is bounded on the W by Ghana, on the N by Burkina Faso, and on the E by Benin.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Currency

The official unit of currency is the French African Community franc, consisting of 100 centimes.

Government



Flag of Togo

Togo is a republic. The country is divided into five regions.

The country is governed by a directly-elected President serving a 5-year term. The Prime Minister is appointed by the President. The unicameral National Assembly consists of 81 directly-elected members serving 5-year terms.

The legal system is based on French civil law and customary law.

The capital is Lome.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 13	Liberation Day
January 24	Sarakawa (Economic Liberation Day)
Good Friday	Variable
Easter Sunday	Variable
Easter Monday	Variable
April 27	Independence Day
May 1	Labor Day
May 8	Victory Day
Ascension Day	Variable
Whitsunday	Variable
Whitmonday	Variable
June 21	Martyrs' Day
August 15	Assumption Day

November 1	All Saints' Day
December 25	Christmas Day

Ramadan and Tabaski are Islamic holidays, the dates of which vary depending on the appearance of the moon.

Industries

The main items of commerce are based on coffee, cocoa, palm oil, palm kernels, copra, groundnuts, cotton, and manioc. The major food crops include maize, yams, cassava, and groundnuts.

There are extensive deposits of bauxite and phosphate. Other mineral deposits include limestone, iron ore, and marble. A cement works, an oil refinery, and a steel mill are situated at Lome. Small, but developing, industries include textiles and food processing.

Languages

French is the official language. The major African languages spoken are Ewe and Mina, in the S part of the country, and Dagomba and Kabye, in the N part of the country.

Navigational Information

Enroute Volume

Pub. 123, Sailing Directions (Enroute) Southwest Coast of Africa.

Maritime Claims

The maritime territorial claims of Togo are, as follows:

Territorial Sea	30 miles.
Fisheries or Economic Zone	200 miles.

Search and Rescue

The Marine Nationale coordinates search and rescue operations in Togo.

Time Zone

The Time Zone description is ZULU. Daylight Savings Time is not observed.

U.S. Embassy

The U.S. Embassy is situated at Angle Rue Kouenou and Rue 15 Beniglato, Lome.

The mailing addresses are, as follows:

1. Togo address—
BP 582
Lome
2. U. S. address—
Department of State

Washington DC 20521-2420

<p>U. S. Embassy Togo Home Page http://lome.usembassy.gov</p>
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General

The United Arab Emirates is located on the E side of the Arabian Peninsula. It is bounded on the N by the Persian Gulf, on the E by Oman and the Gulf of Oman, and on the S and W by Saudi Arabia.

The United Arab Emirates has a dispute with Iran concerning the territorial claims of several islands in the Persian Gulf.

The country consists of a flat, barren coastal plain that merges into a vast desert with rolling dunes. Some mountains rise in the E part.

The climate is mostly hot, dry desert being somewhat cooler in the mountains.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Locust Reports

See Indian Ocean—Cautions for further information.

Currency

The official unit of currency is the Emirian dirham, consisting of 100 fils.

Firing Areas

Naval firing practices (surface-to-surface and surface-to-air) and other exercises take place within **Area No. 1** (NE of Abu Dhabi) enclosed by the following positions:

- 24°47'N, 54°35'E.
- 25°02'N, 54°30'E.
- 25°02'N, 54°07'E.

Details of firing exercises within the above area will be broadcast as warnings by Bahrain Radio (A9M) on 500 kHz, normally 3 days in advance. Vessels are advised to avoid the area, or if it is necessary to enter, to proceed with caution.

Government

The United Arab Emirates is a federation of seven emirates, each with its own ruler.

The United Arab Emirates is governed by a President elected by the Federal Supreme Council (composed of the rulers of the



Flag of United Arab Emirates

seven emirates) serving a 5-year term. The unicameral Federal National Council (FNC) consists of 40 members appointed by the rulers of the emirate to serve 2-year terms. The FNC may propose amendments to legislation and the federal budget drafted by the Council of Ministers, but has no executive power.

The legal system consists of a federal court introduced in 1971. All emirates except Dubayy and Ras al Khaymah have joined this federal system. All emirates have secular and Islamic law for civil and high courts.

The capital is Abu Dhabi.

Holidays

The following holidays are observed:

January 1	New Year's Day
December 2-3	U.A.E. National Day

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoorra, Ascension of the Prophet, and the Prophet's Birthday.

In some regions, the holiday of Ruler's Accession Day (August 6) is observed.

Industries

The main industries include crude oil and natural gas production. Other industries include construction materials, petrochemicals, fishing, and boat building.

Agriculture includes dates, vegetables, fruits, poultry, and livestock.

Languages

Arabic is the official language. Farsi and English are widely used in the major cities. Hindi and Urdu are also used.

Mined Areas

Vessels are advised that mined areas exist in the N part of the Persian Gulf. Further information should be obtained from the local authorities. Mine sightings should be reported to the naval authorities by INMARSAT (150-5612) or to Coalition naval vessels on VHF channel 13 or 16. Details of areas reported to be dangerous due to mines are also promulgated by

Notice to Mariners issued by the Middle East Navigation Aids Service (MENAS) and by MARAD advisories.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of the United Arab Emirates are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone **	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. Requires advance permission or notification for innocent passage of warships in the territorial sea.

** The Exclusive Economic Zone extends to agreed Continental Shelf boundaries or to median lines.

Maritime Boundary Disputes

The United Arab Emirates and Iran are conducting talks to resolve disputes over Iran's occupation of Jazireh-ye Tonb-e Bozorg (26°16'N., 55°18'E.), Jazireh-ye Tonb-e Kuchek (26°14'N., 55°09'E.), and Jazireh-ye Abu Musa (25°53'N., 55°02'E.).

Regulations

Masters are warned that public consumption of alcoholic drinks is strictly prohibited in the United Arab Emirates and its territorial waters. Crew members must not be allowed to offer alcohol to any Moslem for any reason whatsoever.

It has been reported (2003) that vessels calling at ports in Sharjah and Sharjah waters should appoint a local agent to advise the port of the vessel's ETA, particulars, and purpose of call.

Search and Rescue

Emirates Coast Radio Station (A6L) maintains a continuous listening watch on VHF channel 16 for distress traffic.

Time Zone

The Time Zone description is DELTA (-4). Daylight Savings Time is not observed.

Traffic Separation Schemes

An IMO-adopted Traffic Separation Scheme is located between Zaqqum Oil Field and Umm Shaif (Umm ash Shayf) Oil Field.

U.S. Embassy

The mailing address is P.O. Box 4009, Abu Dhabi.

The U.S. Embassy is situated in the Safarat District (Embassy District), Road 4, Abu Dhabi.

<p>U. S. Embassy United Arab Emirates Home Page http://uae.usembassy.gov</p>



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Caution is necessary, however, as the traditional buoyage system is also in use in Rio Uruguay.

Currency

The official unit of currency is the Uruguayan peso, consisting of 100 centesimos.

Government

General

Uruguay, located on the SE side of South America, is bounded on the NE by Brazil, on the S by the Rio de la Plata, on the W by Argentina, and on the SE by the Atlantic Ocean. It has a coast about 300 miles long, including the N shore of the Rio de la Plata. The shores are mostly fronted by sandy beaches, separated by rocky points.

Generally, the country is composed of rolling grassy plains and low hills. The land is well-watered by several rivers.

The climate is temperate with mild winters and warm summers. The wettest period is from March to June, but there is really no dry season.

Buoyage System

The IALA Buoyage System (Region B) is in effect. See Chart No. 1 for further IALA Buoyage System information.



Flag of Uruguay

Uruguay is a constitutional republic. The country is divided into 19 departments.

Uruguay is governed by a directly-elected President serving a 5-year term. The Council of Ministers is appointed by the President with the approval of the General Assembly. The bicameral General Assembly consists of the directly-elected 30-member Chamber of Senators, serving 5 -year terms, and

the directly-elected 99-member Chamber of Representatives, serving 5-year terms.

The legal system is based on Spanish civil law.

The capital is Montevideo.

Holidays

The following holidays are observed:

January 1	New Year's Day
January 6	Three Kings Day (Epiphany)/ Children's Day
Carnival (two days)	Variable
Holy Thursday	Variable
Good Friday	Variable
Holy Saturday	Variable
Easter Sunday	Variable
April 19	Desembarco de los 33 Orientales
May 1	Labor Day
May 18	Battle of Las Piedras
June 19	Birthday of Artigas
July 18	Constitution Day
August 25	Independence Day
October 12	Battle of Sarandi/Dia de la Raza/ Discovery of America Day
November 1	All Saints' Day
November 2	All Souls' Day
December 25	Christmas Day/Family Day
December 31	New Year's Eve

Industries

The major industries are livestock raising and livestock product processing. Other industries include textiles, footwear, cement, petroleum refining, fishing, forestry, wine, and automobile manufacturing.

The principal crops are wheat, oats, barley, maize, sugar beets, sugar cane, potatoes, and rice. Fruits include peaches, oranges, tangerines, and pears.

Languages

Spanish is the official language. Brazilero, a mixture of Portuguese and Spanish, is spoken in the region bordering Brazil.

Navigational Information

Enroute Volume

Pub. 124, Sailing Directions (Enroute) East Coast of South America.

Maritime Claims

The maritime territorial claims of Uruguay are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. Claims, jointly with Argentina, the estuary of the Rio de la Plata as internal waters.

Pilotage

Pilotage is compulsory W of Montevideo. Pilots board S of Lighted Buoy Km 9.35 in position 35°00.0'S, 56°13.5'E. Deep-draft vessels bound for Uruguayan river ports may be directed to obtain a pilot further E of the above position.

Pollution

Oil pollution regulations are strictly enforced. Among other measures, vessels are prohibited from discharging or dumping oil within fifty miles of the coast.

Regulations

Vessels in all ports must hoist the Uruguayan flag. It is recommended that the prescribed times for raising and lowering this courtesy flag be correctly established in order to avoid fines.

Vessel Traffic System

The Maritime Movement Control and Information System applies to all vessels entering or leaving Uruguayan waters. It encompasses the area W of longitude 50°50'W and SW of a line bearing 128° from **Chui Light** (33°45'S., 53°22'W.).

The system is divided into various zones, each containing a Port Control Center concerned with control and information within a port or within its surrounding area up to a distance of 50 miles. Information on each Port Control Center is given in the accompanying table.

The following procedures are in effect for the Maritime Movement Control and Information System:

1. Vessels should contact the appropriate Port Control Center when entering each zone, giving the following information:
 - a. Position (latitude and longitude).
 - b. Course.
 - c. Speed.
 - d. Maximum draft.
 - e. ETA at the pilot boarding position.
 - f. Other information that may be relevant to the navigation of the vessel.

2. The following information should also be reported to the Port Control Center:

- Any accident, fire, or damage on board the vessel.
- Assistance rendered to other vessels in distress or difficulty.
- Unmarked or uncharted hazards to navigation.
- Serious reduction in visibility.

3. Vessels should maintain a continuous listening watch on VHF channel 16 when within the zone. If a vessel cannot maintain a listening watch on VHF channel 16, they should

use VHF channel 11 or VHF channel 13 and advise the Port Control Center accordingly.

4. Clearance should be obtained from the Port Control Center prior to any movements. This clearance expires automatically after 15 minutes.

Spanish or English should be used when communicating with the Control Centers. Reports should be made by telex if VHF contact is not made. A log of all reports made should be maintained.

Maritime Movement Control and Information System Reporting Points

Port Control Center	Call sign	Zone	Geographic area	Reporting points
La Paloma *	La Paloma Control (CWC30)	Kilo	East of longitude 54°15'W	Abeam of Chui Light Abeam of Cabo Polonio Light Abeam of Cabo Santa Maria
La Paloma *	La Paloma Control (CWC30)	Lima	Port area	Abeam of Port Jetty Light
<p>* Vessels unable to communicate with La Paloma should send the following information to Montevideo Control:</p> <ol style="list-style-type: none"> Vessel's name. Country of registry. Last port of call and destination. Time of passing La Paloma. Reason for using telegraph. 				
Punta del Este	Punta del Este Control	Golf	Between longitudes 54°15'W and 55°30'W	Abeam of Isla de Lobos Abeam of Punta del Este
Punta del Este	Punta del Este Control (CWC34)	Hotel	Port area	—
Piriapolis	Piriapolis Control (CWC33)	Tango	Port area	—
Puerto del Buceo	CWC47	Oscar	Between longitudes 56°00'W and 56°09'W; north of latitude 34°57'S	—
Montevideo **	Montevideo Port Control (CWC)	Alfa	Outer zone between longitudes 55°30'W and 57°21'W	<p>Middle Channel:</p> <ol style="list-style-type: none"> Abeam of Graf Spee Lighted Buoy Abeam of La Panela Light Uruguayan Banco Ortiz Lighted Buoy Argentinian Banco Ortiz Lighted Buoy <p>North Channel:</p> <ol style="list-style-type: none"> Abeam of Graf Spee Lighted Buoy Abeam of La Panela Light Abeam of Jesus Maria Lighted Buoy Abeam of Arazati Lighted Buoy Abeam of Punta Rosario <p>East of the Access Channel:</p> <ol style="list-style-type: none"> Abeam of Punta Brava Abeam of Isla de Flores

Maritime Movement Control and Information System Reporting Points				
Port Control Center	Call sign	Zone	Geographic area	Reporting points
Montevideo **	Montevideo Port Control (CWC)	Bravo	Port area between longitudes 56°10'W and 56°19'W; north of latitude 35°01'S	Abeam of Fairway Entrance Lighted Buoy Abeam of the jetty
** Vessels entering or departing Zone Alfa and Zone Bravo should report the following information: 1. Vessel's name. 2. Nationality. 3. Last port of call (if entering)/next port of call (if departing).				
Santiago Vasquez	CWC38	Papa	Between longitudes 56°20'W and 56°40'W; north of latitude 34°56'S	—
Puerto Sauce	CWC27	Uniform	Outer zone	—
Colonia	Colonia Control	Charlie	Outer zone	Abeam of Punta Rosario Abeam of Puerto Sauce Abeam of Roca Barriles Abeam of Puerto Colonia del Sacramento Abeam of Isla Farallon North end of Barra de San Pedro Abeam of Punta Martin Chico
Colonia	Colonia Control (CWC23)	Delta	Port area	—
Carmelo	CWC22	Quebec	Outer zone	Abeam of Carmelo
Nueva Palmira	CWC31	Echo	Outer zone	—
Nueva Palmira	CWC31	Foxtrot	Port area	—
Fray Bentos	Frey Bentos Control	India	Outer zone	Abeam of Km 46 (Punta Amarilla) Abeam of Km 61 (Riacho Yaguari) Abeam of Km 67 Abeam of Km 83 (Paso Barrizal) Abeam of Puerto Fray Bentos Passing Ponte General San Martin Abeam of Km 122 (Nuevo Berlin) Abeam of Km 140 (Isla Roman)
Fray Bentos	Frey Bentos Control (CWC33)	Juliet	Port area	—
Paysandu	Paysandu Control	Mike	Outer zone	Abeam of Km 140 (Isla Roman) Abeam of Km 160 (San Javier) Abeam of Km 183 (Concepcion del Uruguay) Abeam of N end of Isla Punta Almiron Abeam of Puerto Paysandu Passing Ponte General Artigas Abeam of Punta Piedras Abeam of Arroya Malo
Paysandu	Paysandu Control (CWC32)	November	Port area	—
Salto	CWC37	Romeo	Outer zone	—

Maritime Movement Control and Information System Reporting Points				
Port Control Center	Call sign	Zone	Geographic area	Reporting points
Salto	CWC37	Sierra	Port area	—

Search and Rescue

The Maritime Rescue Coordination Center (MRCC) Uruguay is responsible for coordinating search and rescue operations and can be contacted by e-mail, as follows:

comflo_radio@armada.gub.uy jesar@armada.gub.uy

A network of coast radio stations maintains a continuous listening watch on international distress frequencies.

Lifesaving stations are located, as follows:

1. Punta del Este (34°58'S., 54°57'W.).
2. Piriapolis (34°52'S., 55°18'W.).
3. Montevideo (34°54'S., 56°13'W.).
4. Rio Santa Lucia (34°50'S., 56°26'W.).
5. Puerto Sauce (34°27'S., 57°26'W.).
6. Colonia (34°28'S., 57°50'W.).

Time Zone

The Time Zone description is PAPA (+3). Daylight Savings Time (OSCAR (+2)) is maintained from the middle of October through the middle of March of the following year; the exact starting and ending dates should be obtained from local authorities.

U.S. Embassy

The U.S. Embassy is situated at Lauro Muller 1776, Montevideo.

The mailing addresses are, as follows:

1. Uruguay address—
Lauro Muller 1776
Montevideo, 11200
2. U. S. address—
APO AA 34035

U. S. Embassy Uruguay Home Page http://montevideo.usembassy.gov



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General

Yemen is located in the SW part of the Arabian Peninsula. It is bordered on the N by Saudi Arabia, on the E by Oman, on the S by the Gulf of Aden, and on the W by the Red Sea.

It also includes the island of Suqutra (Socatra), in the Arabian Sea, and the islands of Mayyun and Kamaran, in the Red Sea.

The coastal areas are sandy and flat, while the interior is mountainous.

The climate is mostly desert; hot and humid along the W coast and extraordinarily hot and dry in the E. The W mountain area is temperate and subject to a seasonal monsoon.

Buoyage System

The IALA Buoyage System (Region A) is in effect. See Chart No. 1 for further IALA Buoyage System information.

Navigational lights in Yemen have been reported to be unreliable.

Cautions

Special Warning 121 (Issued 20 March 2003)

Information on Special Warning 121 can be found in Iraq—Cautions.

Special Warning 115 (Issued 5 March 2001)

Information on Special Warning 115 can be found in Iraq—Cautions.

Special Warning 113 (Issued 13 October 2000)

1. The level of risk for foreigners in Yemen remains high. On 12 October 2000, several U.S. citizens were killed and many more were injured in an incident involving a U.S. Navy ship in the port of Aden, Yemen in what may have been a terrorist attack. An explosion in the morning of 13 October 2000 caused minor damage to the British Embassy in Sanaa, Yemen and no casualties. While U.S. and Yemeni officials are still cooperating closely to determine the cause of the tragic explosion, the investigation has only started. Under these circumstances, U.S. mariners should avoid Yemeni ports for the present.

2. In light of this and other recent events, the U.S. Department of State warns U.S. citizens to defer travel to Yemen. U.S. citizens should exercise a very high level of caution and should only travel between cities by air or with an armed escort. They should register with the U.S. Embassy in Sanaa and remain in contact with the Embassy for updated security information at (967)(1)238-844 through 238-852.

Locust Reports

See Indian Ocean—Cautions for further information.

Gulf of Aden Voluntary Reporting System

A voluntary reporting system in support of Operation Enduring Freedom has been established to support surveillance and anti-terrorist operations in the Gulf of Aden and its approaches. For further information, see Indian Ocean—Navigational Information.

Currency

The official unit of currency is the Yemen riyal, consisting of 100 fils.

Firing Areas

It is reported that military vessels may be encountered exercising in areas centered 50 miles WSW and 18 miles ENE of Aden.

Government



Flag of Yemen

Yemen is a republic. The country is divided into 19 governorates.

Yemen is governed by a directly-elected President serving a 7-year term. The Prime Minister is appointed by the President. The bicameral legislature consists of a 111-member Shura Council appointed by the President and a directly-elected 301-member Assembly of Representatives serving 6-year terms.

The legal system is based on Islamic law, Turkish law, English common law, and local tribal customary practices.

The official political capital is Sanaa. The economic and commercial capital is the port city of Aden.

Holidays

The following holidays are observed:

January 1	New Year's Day
May 1	Labor Day
May 22	National Unity Day
July 7	Unity Factory Day
September 26	Revolution Day (North Yemen)
October 14	Revolution Day (Aden)
November 30	Independence Day (South Yemen)
December 31	Bank Holiday

Islamic holidays, which are subject to the appearance of the moon, include Eid Al-Fitr (End of Ramadan), Eid Al-Adha (End of Pilgrimage), Hijrah (Islamic New Year), Ashoora, and the Prophet's Birthday.

Industries

Crude oil production and petroleum refining are major industries.

Agriculture is the main occupation. Crops include cotton, millet, qat (a narcotic shrub), and fruits. There is a growing fishing industry.

Languages

Arabic is the official language. English is widely understood in the commercial city of Aden.

Navigational Information

Enroute Volume

Pub. 172, Sailing Directions (Enroute) Red Sea and the Persian Gulf.

Maritime Claims

The maritime territorial claims of Yemen are, as follows:

Territorial Sea *	12 miles.
Contiguous Zone **	24 miles.
Fisheries or Economic Zone	200 miles.
Continental Shelf	200 miles or the Continental Margin.

* Requires advance permission or notification for innocent passage of warships in the territorial sea. Claims a notice requirement for warships, nuclear-powered vessels, and vessels transporting nuclear materials or other radioactive substances prior to entering the territorial sea.

** Also considered a Security Zone.

Regulations

All vessels calling at Al Ahmadi (Hodeidah), Salif, Ras Isa Marine Terminal, and Al Mukha are required to submit the following documentation, via the agent, at least 24 hours prior to arrival:

1. Crew list.
2. Owner and charterer details.
3. Cargo manifest and cargo plan.
4. Dangerous cargo manifest.
5. Copy of last port clearance.

Search and Rescue

Aden Coast Radio Station (7OA) maintains a continuous listening watch for distress traffic on 500 kHz, 2182 kHz, and VHF channel 16.

Hodeidah Coast Radio Station (4WD) maintains a listening watch for distress traffic on 500 kHz, but it is not continuous.

Time Zone

The Time Zone description is CHARLIE (-3). Daylight Savings Time is not observed.

Traffic Separation Schemes

Traffic Separation Schemes (TSS) off Yemen are, as follows:

1. In Bab-el-Mandeb. (IMO adopted)
2. West and South of Hanish al Kubra. (IMO adopted)
3. East of Az Zuqar (Jabal Zuqar). (IMO adopted)

U.S. Embassy

The U.S. Embassy is situated at Sa'awan Street, Dhahr Himyar Zone, Sheraton Hotel District, Sanaa.

The mailing address is P.O. Box 22347, Sanaa, Yemen.

<p>U. S. Embassy Yemen Home Page http://yemen.usembassy.gov</p>
